

LABORATORY ECONOMICS

Competitive Market Analysis For Laboratory Management Decision Makers

An Update on the Pathologist Shortage

There are currently ~1,000 pathologist job openings in the United States, but only about 450 new pathologists are entering the workforce each year, according to Rich Cornell, Founder & President of the life sciences recruiting firm Santé Consulting (Ellisville, MO). The pandemic led many pathologists on the bubble of retirement (age 55-65) to retire early, while pathology case volumes have surged since lockdowns ended, notes Cornell. For an in-depth review, see pages 4-5.

Quest Buys New York-Presbyterian Outreach Lab Assets

Quest Diagnostics has agreed to purchase select assets of the clinical lab outreach business of New York-Presbyterian (New York City) for an undisclosed amount. The deal is expected to be completed by June 30. New York-Presbyterian will still own and operate its hospital labs. Existing anatomic pathology service arrangements, including for Pap and HPV testing, will also remain intact. *More details on page 6.*

PathAI Announces 13 Lab Contracts for Its AI Tools

PathAI (Boston, MA) has won contracts with 13 lab organizations that will be using its FDA-cleared AISight digital pathology image management and viewer analysis system. These new clients will also be using PathAI's software algorithm AIM-PD-L1 NSCLC RUO, which quantitates the percentage of PD-L1 positive tumor and immune cells in non-small cell lung cancer samples. *Full details on page 9.*

MACs Seek To Reduce Toxicology Spending

Late last year, National Government Services (NGS), a Medicare Administrative Contractor (MAC), finalized a coverage decision that limits reimbursement for definitive drug testing to no more than 14 drug classes. NGS processes Part B claims in 10 states, including Illinois, Massachusetts and New York. The coverage change has resulted in an effective reimbursement cut of 21% for procedure code G0482 (definitive drug testing for 15-21 drug classes) and a 37% cut for G0483 (22+ drug classes). Five other MACs across the country have proposed similar revisions to their drug testing policies. These changes, if implemented, are likely to be copied by private payers and could result in more than \$100 million per year of lost revenues for toxicology labs. *Continued on page 2.*

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MACs Seek To Reduce Toxicology Spending *(cont'd from page 1)*

NGS and other MACs that finalize their proposed LCDs will be setting a cap on reimbursement for definitive drug testing of \$156. The changes, if applied nationwide, would result in the loss of an estimated \$102 million of annual Medicare revenue for toxicology labs. Furthermore, *Laboratory Economics* estimates that, if Medicaid plans and private payers follow suit, the annual revenue loss could be as high as \$500 million.

The only MAC that has not issued a proposed LCD to cap definitive drug test reimbursement is Noridian, which processes Part B claims for 12 states, including California, Nevada and Arizona.

The proposed LCD changes come as the Office of Inspector General (OIG) has just released a new report (February 2023, No. A-09-21-03006) on drug testing. The OIG found that Medicare paid \$704 million between 2016-2020 for definitive drug testing services that were at risk for noncompliance with Medicare “reasonable and necessary” requirements. The OIG found 1,062 at-risk providers that overutilized billing for procedure code G0483 (definitive drug testing for 22+ drug classes).

“The focus on cost reduction is coming at the expense of patient care. The pendulum has swung too far in the wrong direction,” says Michael Sprintz, DO, who is Founder and CEO of the Sprintz Center for Pain and Recovery (Shenandoah, TX), which treats about 400 patients with chronic pain and/or substance use disorders per week and operates its own POL drug testing lab.

Sprintz, who is triple board-certified in addiction medicine, pain medicine, and anesthesiology, notes that between 2010 and 2016, a number of toxicology labs were over-billing insurers egregious amounts as out-of-network labs.

As a result, CMS introduced bundled coding (G0480-G0483) for definitive drug testing in 2016, which effectively cut reimbursement by roughly 50% (see *LE*, December 2015). In addition, many payers implemented overly restrictive policies for drug testing reimbursement, requiring extensive medical necessity documentation that ordering physicians often lack the time to provide.

Financial Consequences of Proposed LCDs on Drug Testing

Procedure Code	Number of Drug Classes Tested	2023 Medicare Rate	National Allowed Medicare Revenue (2021)	Potential Lost Annual Medicare Revenue*
G0480	1 - 7	\$114.43	\$78,136,396	\$0
G0481	8 - 14	\$156.59	\$77,481,959	\$0
G0482	15 - 21	\$198.74	\$128,723,673	-\$27M
G0483	22 and more	\$246.92	\$202,461,061	-\$74M

*Assumes all MACs limit definitive drug test reimbursement to a maximum of 14 drug classes

Source: *Laboratory Economics* from MACs and www.codemap.com

And now, MACs are seeking more cuts through LCD policy changes that appear clearly focused on cost savings not evidence, according to Sprintz. He notes that Novitas and other MACs have also proposed the elimination of alcohol as a reimbursable drug class. “This is clinically illogical and endangers patient lives, particularly in the context of the opioid epidemic and the shocking rise in alcohol use during the Covid-19 pandemic,” notes Sprintz.

Furthermore, the Novitas LCD has also proposed eliminating several confirmatory reasons for reimbursing definitive drug tests, notes Sprintz. For example, definitive drug tests ordered to confirm a “presumptive urine drug test result that is inconsistent with a patient’s self-report, presentation, medical history, or current prescribed pain medication plan” would no longer be reimbursed.

Sprintz warns that the proposed changes will have devastating unintended consequences, including loss of lives, poor outcomes, and increased healthcare costs for Medicare and other payers. “It’s extremely short-sighted,” argues Sprintz. “It’s just as important to support appropriate drug testing as it is to stop inappropriate drug testing.”

Overview of MACs and Proposed LCDs on Drug Testing

Medicare Admin. Contractor (MAC)	Part B States	LCD ID	Status
CGS Administrators	KY, OH	DL36029	Proposed LCD will limit reimbursement for definitive drug testing to no more than 14 drug classes.
First Coast Service Options	FL, Puerto Rico	DL36393	Proposed LCD will limit reimbursement for definitive drug testing to no more than 14 drug classes.
National Government Services	CT, IL, MA, MN, NH, NY, ME, RI, VT, WI	L36037	Implemented changes effective 10/1/2022.
Noridian	AK, AZ, CA, ID, MT, ND, NV, OR, SD, UT, WA, WY	NA	No proposed changes.
Novitas Solutions	AR, CO, DC, DE, LA, MD, MS, NJ, NM, OK, PA, TX	DL35006	Proposed LCD will limit reimbursement for definitive drug testing to no more than 14 drug classes.
Palmetto GBA	AL, GA, NC, SC, TN, VA, WV	DL35724	Proposed LCD will limit reimbursement for definitive drug testing to no more than 14 drug classes.
Wisconsin Physicians Service	IA, IN, KS, MI, MO, NE	DL34645	Proposed LCD will limit reimbursement for definitive drug testing to no more than 14 drug classes.

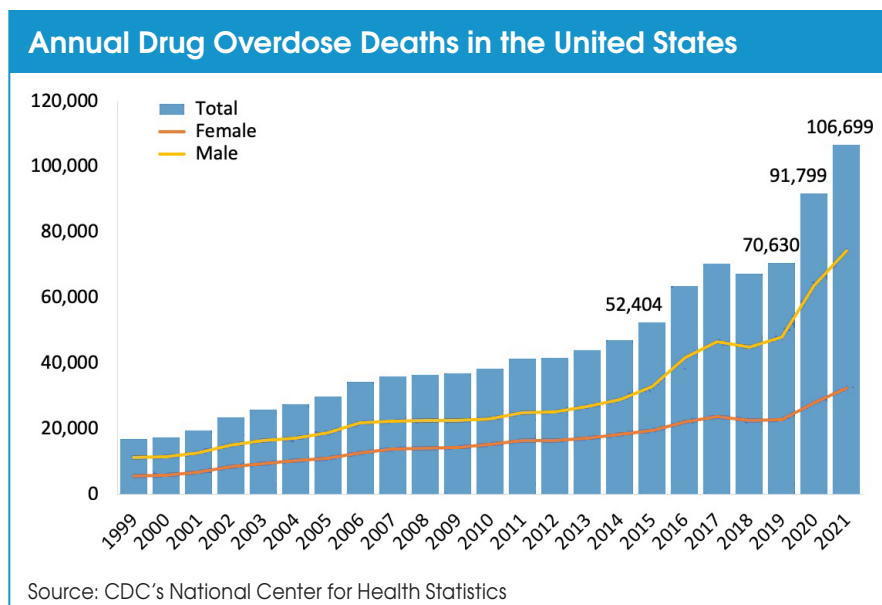
Source: *Laboratory Economics* from MACs and OIG report on drug testing services (June 2021)

One in Two Patients Misuse Prescription Drugs

One in two patients tested misuse prescription drugs, according to the 10th Annual Quest Diagnostics Health Trends Report. The report analyzed 20 million clinical drug tests performed by Quest between 2012 and 2021. A test result suggests misuse when a) additional drugs are found with the prescribed medication(s); b) different drugs are found than the prescribed medication; or c) no drugs are found (which may be due to illegal diversion).

The Quest report noted that since 1980, 1.3 million Americans have died from drug overdoses and more than 200 Americans are currently dying each day from opioid drug overdoses.

Ten years ago, drug overdoses claimed 42,000 lives annually in the United States. That number jumped to 91,799 in 2020 and 106,699 in 2021. “The drug crisis shows no signs of abating, fueled by increased access to illicit drugs as well as barriers to healthcare access exacerbated by the Covid-19 pandemic,” according to the Quest report.



An Update on the Pathologist Shortage *(cont'd from page 1)*

Cornell founded Santé Consulting in 2008. Santé is focused exclusively on the recruitment of pathologists, PhDs, and laboratory executives and directors. Over the course of his career, Cornell has negotiated more than 1,000 physician and PhD employment agreements. Below we summarize his views on the current pathologist job market.



Rich Cornell

Can you provide the details behind the supply-demand imbalance?

Yes. There are 20,322 board-certified pathologists, including anatomic and clinical pathology and subspecialists, in the United States according to the American Board of Medical Specialties (ABMS). Of this total, the College of American Pathologists (CAP) estimates that 17,500 pathologists are in active practice.

On the demand side, the biggest online job board for pathologists, PathologyOutlines.com, currently has 706 pathologist jobs listed (see graph below). This likely represents about 75% of all U.S. pathologist job openings. That means there are currently about 941 pathologist-related job openings in the United States. The number of openings has consistently been around 1,000 at any given point in time over the past two years.

On the supply side, there are 144 residency programs in the United States and 2,300 combined pathology residents and fellows, including 55% of whom are international medical school graduates. By my estimation there are approximately 450 new pathologists entering the workforce each year.

The imbalance of 1,000 job openings vs. 450 new pathologists means it can take several months or even years to fill an open position at an academic medical center or hospital-based pathology group. In the meantime, most practicing pathologists are overburdened with case volumes.

Which types of pathologists are in greatest demand?

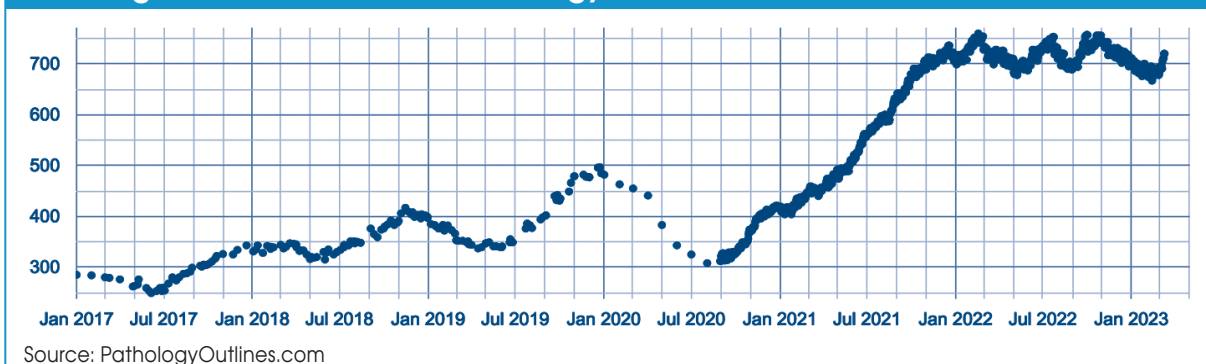
The need is greatest for subspecialists, particularly board-certified cytopathologists and hematopathologists. Fellowship-trained breast/GYN and GI/liver pathologists are also in high demand.

Hospital-based groups have the greatest demand for bread-and-butter surgical pathologists willing to sign-out general surgical cases and cover clinical pathology as well.

Can you give some anecdotal stories of recent job placements?

We recently placed a young pathologist who had just completed two fellowships at the Harvard Medical School system and is triple board certified (clinical pathology, microbiology and immunology). He accepted a job offer from an academic medical center in the upper Midwest. He's now a practicing pathologist and assistant professor. He received a starting salary of approximately \$250,000 with a sign-on bonus of \$20,000 and \$15,000 for relocation expenses. He also received 30 days of paid time off (PTO) plus 10 days for continuing medical education (CME) and a \$5,000 CME allowance.

Pathologist Job Ads Posted on PathologyOutlines.com



In another example, we placed an older pathologist (mid-50s) from western New York. He had been medical director at a mid-sized pathology practice. He and his wife were looking for a change now that their kids were off to college. He accepted a staff pathologist job at a small hospital-based group in Wyoming with a smaller salary and fewer responsibilities. He received \$15,000 for relocation expenses, a salary of \$350,000, six weeks of PTO and 10 days for CME conferences. He also has the opportunity to switch to a per diem role in the future. The practice had been searching for a pathologist for several months and was willing to modify its job offer to suit the requests of the hired pathologist.

What about pathologists hired by the commercial labs (Quest Diagnostics, Labcorp, Sonic, etc.)?

We recently helped relocate a pathologist that had been practicing at an academic medical center in New York City for almost two decades. He's an anatomic and clinical pathologist with 20 years of experience and subspecialty expertise in GI pathology. He was seeking a leadership opportunity at a commercial lab in a "blue state" with less congestion and a lower crime rate. We placed him in California with one of our commercial lab clients. His annual salary was in the low \$400,000 range with a 20% bonus plan. He also received a \$40,000 relocation package and a \$25,000 signing bonus, plus 35 days of PTO including CME.

Can pathology assistants (PAs) help with the shortage?

I've seen a lot of pathology groups hire PAs to replace retiring pathologists. Once a practice hires a PA, they tend to never look back. Starting salaries for PAs are averaging roughly \$125,000 to \$150,000 range. The problem is that accredited PA programs are only collectively graduating approximately 180 to 230 students per year.

Will digital pathology plus artificial intelligence (AI) help alleviate the shortage?

AI is definitely the wave of the future. But it's likely to take years before the average hospital-based pathology group brings it into their practice. However, in the long run, it will help relieve the shortage just as it did with radiology.

What are some things that cause employers to not make a job offer to a pathologist?

When the candidate treats someone inappropriately during the interview, like being rude to an administrative assistant or clerical staff. Other reasons might include bad references, or the candidate didn't dress appropriately or come prepared for the interview.

A job offer might also be withheld if the candidate does not express a strong interest after the interview like postponing a commitment as they continue their interviews, or not deciding in a timely manner.

Median Pathologist Total Compensation* by Setting and Experience for 2021

<i>Years in Practice</i>	<i>Academic Medical Centers</i>	<i>Community Hospital</i>	<i>Independent Labs</i>
< 3 years	\$227,500	\$292,500	NA
4-10 years	\$241,000	\$315,000	\$312,000
11-20 years	\$300,000	\$369,000	\$360,500
20+ years	\$376,896	\$358,000	\$350,000

*Includes salary and bonus

Source: CAP 2022 Practice Characteristics Survey Report

What turns off a pathologist from accepting a job offer from an employer?

The number one reason is location. Pathologists today are much more geographically driven than in years past.

Obviously, another big reason is compensation. Either the group is not willing to be forthcoming with their compensation structure or partnership track, or they simply make too low of an offer.

Quest Buys New York-Presbyterian Outreach Lab Assets *(cont'd from page 1)*

Under the agreement, Quest is essentially buying the clinical lab outreach client list and a handful of patient service centers from New York-Presbyterian. High-sensitivity testing requiring a <4-hour turnaround time will continue to be performed at New York-Presbyterian's hospital labs. All other clinical lab tests will be performed at Quest's new 250,000-square-foot lab in Clifton, New Jersey, located 15 miles west of Manhattan. Quest will not be hiring any staff from New York-Presbyterian.

New York-Presbyterian has 10 hospitals and nearly 200 primary and specialty care clinics and medical groups in the greater NYC area. Its flagship medical centers are Columbia University Medical Center and Weill Cornell Medical Center. These two medical centers have a combined 2,696 beds and an annual lab department budget of \$366 million, according to Medicare Hospital Cost Reports for 2021. New York-Presbyterian's annual clinical lab outreach business is estimated at more than \$50 million per year.

New York-Presbyterian will continue to utilize several reference labs, including Quest, for send-out testing. The deal does not make Quest the primary reference lab. "We'll have to earn that," says Michael Lukas, Vice President and General Manager for Health Systems at Quest.

Top 10 Health Systems in NYC by Estimated Lab Outreach Revenue

Health System	Location	Total Medicare Part B Fee-for-Service Lab & Pathology Payments 2021	Estimated Total Clinical Lab & Pathology Services Outreach Collected Revenue (5 x Medicare Total) 2021
Northwell Health (including Northwell Health Labs)	Long Island	\$40,191,430	\$200,957,150
New York-Presbyterian Healthcare System	Manhattan	\$11,365,302	\$56,826,510
Montefiore Health System	Bronx	\$8,063,223	\$40,316,115
Memorial Sloan Kettering Cancer Center	Manhattan	\$6,125,757	\$30,628,785
NYU Langone Health	Manhattan	\$5,689,499	\$28,447,495
Mount Sinai Health System	Manhattan	\$5,505,490	\$27,527,450
Catholic Health	Long Island	\$4,920,053	\$24,600,265
Stony Brook Medicine	Long Island	\$4,371,750	\$21,858,750
Westchester Medical Center Health Network	Westchester	\$1,518,481	\$7,592,405
St. John's Riverside Hospital	Westchester	\$481,104	\$2,405,520
Grand Total for 10 NYC Health Systems		\$88,232,089	\$441,160,445

Source: *Laboratory Economics* based on data from Medicare Hospital Cost Reports for 2021

Quest Signs Lab Services Agreement with Tower Health

Quest Diagnostics has signed a multi-year agreement to provide lab supply chain management, including the purchase of capital equipment, supplies and reagents, to Tower Health (West Reading, PA). The agreement covers three hospitals in the Tower network: Reading Hospital (655 beds), Phoenixville Hospital (144 beds) and Pottstown Hospital (211 beds). The arrangement will leverage Quest's purchasing power for instruments and supplies. Quest will also continue to provide reference testing for Tower.

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Labcorp Reports Full-Year 2022 Financial Results

Labcorp (Burlington, NC) reported net income of \$1.279 billion for the full-year 2022, down 46% from \$2.377 billion in 2021. Labcorp's overall revenue decreased by 7.7% to \$14.9 billion in 2022. Revenue from Labcorp's lab testing business decreased by 11% to \$9.2 billion in full-year 2022, including -7.5% from lower volume and -3.7% from lower average revenue per requisition. On February 16, Labcorp held a conference call with analysts and investors. Here are some comments on a few key topics from CEO Adam Schechter.

Covid-19 Testing

Labcorp generated revenue of \$1.15 billion from Covid-19 testing in 2022, down 58% from \$2.76 billion in 2021. In the fourth quarter, Labcorp's average Covid-19 PCR test volume was about 16,000 per day. Its Covid-19 PCR test volume fell to 11,000 per day in the month of January. Labcorp expects to perform an average of between 5,000 and 12,000 Covid-19 PCR tests per day in full-year 2023. Covid-19 testing revenue is expected to decline by more than 75% this year.

Acquisitions and Hospital Lab Deals

Labcorp spent \$1.2 billion of cash on acquisitions in 2022. Its biggest deals included \$455 million for Personal Genome Diagnostics Inc. (see *LE*, January 2022) and \$424 million for Ascension Healthcare's clinical lab outreach business (see *LE*, October 2022). Labcorp has completed the integration of the Ascension outreach labs, adding nearly 5,000 employees, and will also provide laboratory management services for nearly 100 hospitals across the system. Labcorp expects the Ascension deal to add approximately \$550 million to \$600 million of revenue in 2023 "We are seeing an increased number of people that are interested in looking at us running and acquiring parts of the hospital [lab] business," added Schechter.

LabCorp Financial Summary (\$ millions)

	2022	2021	% Chg
Total revenue	\$14,876.8	\$16,120.9	-7.7%
LabCorp Diagnostics	9,203.5	10,363.6	-11.2%
Drug Development/CRO	5,710.2	5,845.5	-2.3%
Operating cash flow	1,955.90	3,109.6	-37.1%
Capital expenditures	481.9	460.4	4.7%
Free cash flow	1,474.0	2,649.2	-44.4%
Pretax income	1,582.6	3,126.6	-49.4%
Net income	1,279.1	2,377.3	-46.2%
Diluted EPS	\$13.97	\$24.39	-42.7%
Est'd number of requisitions	179.5	194.0	-7.5%
Est'd revenue per requisition	\$51.40	\$53.40	-3.7%

Source: Labcorp and *LE*'s estimates for number of reqs and average revenue per req.

Lab Test Pricing

Medicare CLFS rates were frozen for the third year in a row in 2023. In terms of private payer contracts, Schechter said, "We've seen continued pressure over the last 5 years and I think that pressure will continue but it's not accelerating. It's kind of very steady."

Labor Shortages

"I would say there's still a difficult labor environment in healthcare in general. We have made some progress in acceptance rates when we make [job] offers....We're also working hard on retention," said Schechter.

Direct-to-Consumer Testing

In 2022, the company introduced Labcorp OnDemand, an online platform that lets consumers order more than 45 test panels. Orders are reviewed by physicians at PWNHealth. Patients provide samples at Labcorp PSCs and results are provided online.

BioReference Restructures to Offset Falling Covid-19 Test Volumes

OPKO Health's BioReference Labs division (Elmwood Park, NJ) reported an operating loss of \$174 million in 2022 versus an operating profit of \$98 million in 2021; revenue fell by 53% to \$756 million.

Financial results were hurt by plummeting Covid-19 test volumes. BioReference saw its Covid-19 PCR test volume fall to 3.1 million tests in 2022 from 11.9 million tests in 2021. BioReference has been restructuring its lab operations for the past 12 months to adjust to the decline in Covid-19 testing.

Below *LE* summarizes data from OPKO Health's 2022 annual report and comments from Elias Zerhouni, MD, Vice Chairman and President of OPKO, made on a February 23 conference call with investors and analysts.

Cost Cutting Initiatives

BioReference has eliminated approximately \$140 million of annualized expenses since February 2022. The company is targeting an additional \$30+ million of reductions, or about 5% of its expected spending, in 2023, according to Zerhouni.

Components of the cost cutting include a reduction in headcount. At the peak of the pandemic in late 2021/early 2022, BioReference had 8,000 employees and it currently has 3,300 employees, including 180 sales and marketing reps.

BioReference has also been shutting down low-volume patient service centers. Over the past year, the company closed 13 less productive PSCs and opened 11 new PSCs in more promising locations. Zerhouni said that each PSC is expected to perform a minimum of 50 to 60 draws per day. BioReference currently operates a total of 124 PSCs, down from a pre-pandemic level of 300 PSCs.

Scaling Back At-Home Blood Draw Service

BioReference made significant investments to launch its at-home specimen collection service, branded Scarlett Health, back in early 2021 (see *LE*, February 2021). Scarlett Health allows telemedicine patients to make online appointments with phlebotomists for home specimen collections. Zerhouni says investment in Scarlett Health is being scaled back.

Focus on Oncology, Urology and Women's Health

Zerhouni said that BioReference is focusing on higher growth areas such as oncology, urology, women's health, and partnerships with large health systems. He believes these areas have the opportunity for growth in the high-single, low-double-digit range.

Search for New CEO for BioReference

Jon Cohen, MD, retired as Executive Chairman and CEO of BioReference Labs in mid-2022. OPKO Health has not yet announced a new hire to replace Dr. Cohen.

BioReference Labs Key Performance Indicators

	2022	2021	2020	2019	2018	2017	5-Year CAGR
Revenue (\$000)	\$755,630	\$1,607,106	\$1,262,242	\$716,434	\$813,248	\$889,076	-3.2%
Operating Income (\$000)	-173,652	98,067	138,922	-123,359	-44,942	-136,540	NA
Overall Patient Requisition Volume (millions)	12	21	19	11	11	11	1.8%
Covid-19 PCR Test Volume (millions)	3.1	11.9	10.2	0	0	0	NA
Avg. Revenue per Patient Req.	\$62.97	\$76.53	\$66.43	\$65.13	\$73.93	\$80.83	-4.9%
# Patient Service Centers	124	128	200	200	200	275	-14.7%
Sales & Marketing Reps	180	250	300	300	300	400	-14.8%

Source: *Laboratory Economics* from OPKO Health 10K Annual Reports

PathAI Announces 13 Lab Contracts for Its AI Tools *(cont'd from page 1)*

Among the 13 labs that will be using PathAI's AI-based software algorithms is PathAI Diagnostics (Memphis, TN)—formerly named Poplar Healthcare. PathAI acquired Poplar Healthcare in August 2021 (see *LE*, August 2021). PathAI Diagnostics is a full-service anatomic pathology lab with 350 employees, including 25 pathologists.

Other labs that will be using PathAI's software tools include Caris Life Sciences, NeoGenomics and University of Pittsburgh Medical Center (see table).

These labs will have early access to additional AI algorithms that PathAI expects to bring to market for research use only (RUO) within the next few months. These products include AI software tools for quantitative PD-L1 tests for melanoma, head and neck, and bladder cancer, as well as an algorithm for the automated quantification of HER2 IHC images in breast cancer tissue.

Labs will have the potential to validate PathAI's RUO products so that they can be used as lab-developed tests for clinical diagnostics, according to Andy Beck, MD, PhD, Chief Executive of PathAI.

The new clients were all signed by PathAI within the past six months. Beck anticipates more lab client announcements soon. Eric Walk, MD, Chief Medical Officer, and Parth Chodavadia, Head of Commercial, Digital Diagnostics, are leading the marketing efforts at PathAI.

PathAI has raised a total of \$255 million since being formed in 2016. Major backers include Labcorp, Kaiser Permanente, Merck and Bristol Meyers, as well as the private equity firms General Atlantic and General Catalyst.

PathAI's New Lab Clients:

Independent Labs

- Caris Life Sciences (national)
- Celligent Diagnostics (North and South Carolina)
- NeoGenomics (national)
- PathAI Diagnostics (national)
- PathGroup (national)
- TriCore (New Mexico)

Academic Medical Centers & Health Systems

- Baylor Scott & White Health (Texas)
- Cleveland Clinic (Ohio)
- Inova Health (Virginia)
- Medstar Health (District of Columbia)
- Penn State Health (Pennsylvania)
- SUNY Upstate Medical University (New York)
- Univ. of Pittsburgh Medical Center (Pennsylvania)

Ibex to Provide AI Software Tools to Alverno Labs

Ibex Medical Analytics (Tel Aviv, Israel) has won a contract to provide its AI-powered software tools for cancer diagnosis to Alverno Laboratories (Hammond, IN).

Alverno, an independent lab joint venture between Franciscan Alliance and Ascension Illinois, manages 31 hospital labs and provides clinical and anatomic pathology testing services to over 2,500 physician offices in Indiana and Illinois.

Ibex's Galen suite of AI software tools, including for breast and prostate cancer, will be made available to Alverno and its affiliated pathologists.

Alverno launched a major initiative to convert nearly all of its anatomic pathology services to digital pathology in 2019 (see *LE*, June 2019) using the Philips IntelliSite Pathology Solution for slide scanning. Alverno consults on 150,000 histological cases per year, which translates to more than 1.1 million tissue slides.

CDC Recommends Hepatitis B Screening for All Adults

The Centers for Disease Control and Prevention (CDC) published *CDC Recommendations for Hepatitis B Screening and Testing — United States, 2023* in early March. The updated recommendations advise hepatitis B screening for all adults at least once in their lifetime. CDC says that screening will substantially improve timely diagnosis and care for persons with hepatitis B.

Previous CDC recommendations for hepatitis B testing were focused on testing individuals identified as being at risk for infection, including the prison population; persons with a history of sexually transmitted infections; and persons with a history of hepatitis C virus infection.

The new CDC recommendations advise that “All adults should be screened at least once in their lifetime with a triple panel test for hepatitis B surface antigen (HBsAg), antibody to hepatitis B surface antigen (anti-HBs), and total antibody to hepatitis B core antigen (total anti-HBc).”

In 2020, the U.S. Census Bureau counted 331.4 million people living in the United States; more than three-quarters (77.9%) or 258.3 million were adults, 18 years or older. The Medicare rate for a three-test screening panel for hepatitis B is approximately \$30. Thus, the CDC’s new hepatitis B screening recommendation could easily result in hundreds of millions of dollars of new testing revenue for labs over the next few years ($258.3 \times \$30 = \7.7 billion). The annual market size will, of course, depend on the rate of adoption by Medicare, Medicaid and private insurance plans.

Key Hepatitis B Screening Test Codes

Code	Description	Medicare Rate 2023
G0499	Hepatitis B screening in high-risk individuals; includes HBsAg, anti-HBs and anti-HBc	\$28.27
86704	Hepatitis B core antibody (HBcAb); total	\$12.05
86706	Hepatitis B surface antibody (HBsAb)	\$10.74
87340	Hepatitis B surface antigen (HBsAg)	\$10.33

Source: www.codemap.com

Johns Hopkins Covid-19 Dashboard No Longer Being Updated

On March 10, Johns Hopkins University did its final update to its free coronavirus dashboard and hot-spot map with the Covid-19 death count standing at more than 6.8 million worldwide, including 1.1 million U.S. deaths. Many government sources from around the world have stopped timely reporting of cases, hospitalizations and deaths. In the U.S., only New York, Arkansas and Puerto Rico still publish Covid-19 case and death counts daily.

Meanwhile, the CDC’s last nationwide Covid-19 infection-induced antibody seroprevalence survey (excluding vaccinations) was conducted more than a year ago (February 2022). That data showed that 58% of the U.S. population had detectable antibodies indicating past Covid-19 infection. In addition, the CDC currently estimates that 69% of the U.S. population has gotten the primary two-shot Covid-19 vaccine.

Correction: The February 2023 issue of *Laboratory Economics* incorrectly cited the total Covid-19 PCR test volume for Aegis Sciences Corp. In fact, Aegis has processed a total of more than 14 million Covid-19 PCR tests to date.

Comparing Productivity At Quest, Labcorp and BioReference for 2022

On a weighted basis, three publicly-traded lab companies collected average revenue of \$48.98 per requisition in 2022. Average collected revenue per test was an estimated \$16.33. Results for 2022 were skewed by Covid-19 test volumes. The three lab companies performed a total of 31.1 million Covid-19 PCR tests (down 57% from 2021) and 2.6 million antibody tests in 2022 (down 66% from 2021).

The three companies—Quest Diagnostics, Labcorp and OPKO’s BioReference Labs—generated a weighted average of \$191,282 in revenue per employee in 2022. The average number of requisitions and tests processed per employee per year were 3,905 and 11,716, respectively. These figures are based on the total number of employees at the three companies, including all administrative, couriers, sales and marketing, and lab technical staff.

Productivity Stats at Quest Diagnostics, LabCorp and BioReference for 2022

2022 Financials	Quest Diagnostics	Labcorp Diagnostics*	BioReference Laboratories	Total
Total Lab Testing Revenue 2022	\$9,609,000,000	\$9,203,500,000	\$755,630,000	\$19,568,130,000
Base Lab Testing Revenue	\$8,155,000,000	\$8,058,200,000	\$480,630,000E	\$16,693,830,000
Covid-19 Testing Revenue	\$1,454,000,000	\$1,145,300,000	\$275,000,000E	\$2,874,300,000
Operating Income 2022	\$1,428,000,000	\$2,025,500,000	-\$173,652,000	\$3,279,848,000
# Employees	50,000	49,000	3,300	102,300
Employee Efficiency				
Avg. Annual Revenue per Employee	\$192,180	\$187,827	\$228,979	\$191,282
Avg. Annual Operating Income per Employee	\$28,560	\$41,337	-\$52,622	\$32,061
Requisition Stats				
Est'd Annual Requisitions 2022	208,000,000	179,500,000	12,000,000	399,500,000
Est'd Avg. Revenue per Requisition	\$46.25	\$51.40	\$62.97	\$48.98
Est'd Avg. Operating Income per Requisition	\$6.87	\$11.28	-\$14.47	\$8.21
Est'd Avg. Reqs Processed per Employee	4,160	3,663	3,636	3,905
Test Stats				
Est'd Annual Test Volume 2022**	624,000,000	538,500,000	36,000,000	1,198,500,000
Est'd Avg. Revenue per Test	\$15.42	\$17.13	\$20.99	\$16.33
Est'd Avg. Operating Income per Test	\$2.29	\$3.76	-\$4.82	\$2.74
Est'd Avg. Tests Processed per Employee	12,480	10,990	10,909	11,716
Billing Stats				
Accounts Receivable	\$1,147,200,000	\$1,046,900,000	\$114,580,800E	\$2,308,680,800
Est'd Bad-Debt % (pre-ASC 606)	4% - 5%	4% - 5%	5% - 10%	4.5%
Days in AR	44	42	55	43
Revenue by Payer				
Private Patients	12.3%	9.7%	2.1%	10.7%
Medicare CLFS	8.2%	8.9%	9.9%	8.6%
Medicare PFS	1.0%	0.4%	1.2%	0.7%
Medicaid	2.1%	1.8%	1.9%	2.0%
Client Payers (physicians, hospitals, etc.)	33.9%	29.1%	41.9%	32.0%
Healthcare Insurers	42.2%	50.1%	43.2%	46.0%
Covid-19 Testing				
PCR Test Volume for 2022	15,000,000	13,000,000	3,100,000	31,100,000
Antibody Test Volume for 2021	1,300,000	1,000,000	325,000	2,625,000

*Data is for LabCorp’s lab testing business only. **Test volume stats assume an average of 3 tests per requisition.
Source: Company reports and *Laboratory Economics*’ estimates

Lab Stocks Up 10% Year-to-Date In 2023

Twenty-four lab stocks have risen by an unweighted average of 10% year to date through March 13. In comparison, the S&P 500 Index is up 2% year to date. The top-performing lab stock thus far in 2023 is DermTech, up 109%. NeoGenomics is up 91% and Myriad Genetics is up 49%. Labcorp is down 7% and Quest Diagnostics is down 15%.

Company (ticker)	Stock Price 3/13/23	Stock Price 12/30/22	2023 Price Change	Enterprise Value (\$ millions)	Revenue for Trailing 12 mos. (\$ millions)	Enterprise Value/Revenue
DermTech Inc. (DMTK)	\$3.70	\$1.77	109%	42	15	2.9
NeoGenomics (NEO)	17.64	9.24	91%	2,420	510	4.7
Myriad Genetics (MYGN)	21.67	14.51	49%	1,740	678	2.6
GeneDx (formerly Sema4)	0.36	0.26	38%	184	231	0.8
Natera (NTRA)	55.18	40.17	37%	5,800	820	7.1
Exact Sciences (EXAS)	63.54	49.51	28%	13,150	2,084	6.3
Psychemedics (PMD)	6.20	4.90	27%	35	26	1.4
Aspira Women's Hlth (AWH)	0.40	0.33	21%	32	8	4.1
Sonic Healthcare (SHL.AX)*	33.48	29.97	12%	17,850	8,670	2.1
Fulgent Genetics (FLGT)	32.21	29.78	8%	139	619	0.2
Opko Health (OPK)	1.25	1.25	0%	1,130	1,004	1.1
Exagen (XGN)	2.38	2.40	-1%	6	45	0.1
Interpace Biosciences (IDXG)	1.00	1.04	-4%	55	41	1.4
Veracyte (VCYT)	22.68	23.73	-4%	1,470	297	5.0
Guardant Health (GH)	25.86	27.20	-5%	3,010	450	6.7
Labcorp (LH)	219.25	235.48	-7%	25,370	14,877	1.7
CareDx (CDNA)	9.79	11.41	-14%	271	322	0.8
Quest Diagnostics (DGX)	133.06	156.44	-15%	19,330	9,883	2.0
Castle Biosciences (CSTL)	19.99	23.54	-15%	286	137	2.1
Invitae (NVTA)	1.49	1.86	-20%	1,570	516	3.0
Enzo Biochem (ENZ)	1.10	1.43	-23%	61	99	0.6
Biocept (BIOC)	0.39	0.53	-26%	1	50	0.0
Biodesix (BDSX)	1.65	2.30	-28%	117	38	3.1
ProPhase Labs (PRPH)	6.84	9.63	-29%	103	146	0.7
Totals & Averages			10%	\$94,174	\$41,566	2.3

*Sonic Healthcare's figures are in Australian dollars

Source: Laboratory Economics from SeekingAlpha.com

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