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RELIABLE BUSINESS INTELLIGENCE, EXCLUSIVELY FOR MEDICAL LAB CEOs/COOs/CFOs/PATHOLOGISTs

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Is the Profession of Anatomic Pathology Shrinking?

DID THE NUMBER OF ACTIVE PATHOLOGISTS practicing in the United States actually shrink by 17.53% between 2007 and 2017? That is the conclusion of a study published on May 31 by the online *Journal of the American Medical Association (JAMA)*. This startling finding is our lead story in this issue.

A research team of five pathologists in the United States and Canada determined that the number of active pathologists in the U.S. fell from 15,568 in 2007 to 12,839 in 2017. During that same time, the number of active pathologists in Canada increased by 20.45%, from 1,467 to 1,767.

Another finding of interest is that, even as the number of active pathologists in the U.S. declined, the number of cancer cases increased by 16.88% (from 1,444,920 cases in 2007 to 1,688,780 cases in 2017). The researchers wrote that the number of new cancer cases per U.S. pathologist went from 92.81 in 2007 to 131.54 in 2017. The researchers pointed out that the fewer U.S. pathologists in the U.S. must now handle more cancer cases per pathologist per year.

To help our clients and regular readers understand the significance of these findings, on pages 6-8, we provide useful business intelligence from Rick Cornell of **Santé Consulting**. He is nationally-recognized in the pathology profession for his experience in recruiting and placing pathologists over the past 25 years. Indeed, Cornell offers evidence that the job market for pathologists is tightening, as evinced by the higher salaries and benefits being offered by pathology labs with job openings, as well as the shorter time it currently takes young pathologists coming out of residency and fellowship programs to find a good position.

Classic economics says that, if the supply is tight and demand is strong, prices will rise to bring supply and demand into alignment. Cornell's observations about the robust job market for pathology positions would confirm that this economic principle is in play within the pathology profession. With fewer pathologists in active practice, pathology labs are raising salaries to attract the best candidates for their open positions.

THE DARK REPORT is first in the lab industry to analyze the conclusions in the *JAMA* study about the significant decline in the number of active pathologists in the U.S. during the 2007-2017 period. We will bring you a more detailed assessment about this surprising trend in future weeks. **TDR**

JAMA Study: 17% Fewer Pathologists Since 2007

Researchers expect a deficit in the workforce supply of pathologists for as long as two decades

>> CEO SUMMARY: The number of pathologists working in the United States declined by 17.53% from 2007 to 2017, according to recent research published in the Journal of the American Medical Association. When adjusted for the U.S. population, the researchers said the workforce of pathologists is smaller than that of other countries and those other countries have experienced significant adverse events in clinical lab quality, along with delays in diagnosis, particularly for cancer patients.

EWER PATHOLOGISTS ARE WORKING IN THE UNITED STATES TODAY compared with the number in practice in 2007, according to research published online on May 31 in the *Journal of the American Medical Association (JAMA)*.

"Between 2007 and 2017, the number of active pathologists in the United States decreased from 15,568 to 12,839," wrote the study's authors. That's a decrease of 17.53%. "In contrast, Canadian data showed an increase from 1,467 to 1,767 pathologists during the same period," they said. That's an increase of 20.45%.

In addition to analyzing the number of pathologists working in the two countries, the researchers also reported on the number of cancer cases per year as a way to assess pathologists' workload and the effect an over-stretched workforce could have on patient care. When the researchers adjusted for new cancer cases per year, the diagnostic workload per U.S. pathologist rose by 41.73%. Over the same period, the Canadian diagnostic workload increased by 7.06%, the research showed.

Also, after the researchers compared the number of pathologists in United States against the U.S. population, they concluded that the U.S. pathologist workforce is smaller compared than that of other countries that have experienced major adverse events in clinical lab quality and delays in diagnosis.

In other words, patient care is in jeopardy because specimen volume has risen by more than 40% while the number of pathologists has failed to keep pace and has actually declined by almost 18%. The increased workload and the decline in the number of pathologists raises concerns

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about delayed diagnoses and an increased possibility of diagnostic errors.

"Pathologist shortages in the Canadian and UK health systems have resulted in suboptimal patient care, including delayed cancer diagnoses and diagnostic errors," the researchers wrote. "A 2017 survey conducted by the **UK Royal College of Pathologists** found adequate staffing in only 3% of National Health Service histopathology departments.

"This inadequate staffing has resulted not only in diagnostic delays but also in increased costs due to the need to hire temporary workers or outsource services," they said. "Because of the potential consequences of a pathologist shortage, a comprehensive understanding of the current and future pathologist workforce is imperative.

"When adjusted for each country's population, the number of pathologists per 100,000 population showed a decline from 5.16 to 3.94 in the United States and an increase from 4.46 to 4.81 in Canada," the authors added. "As a percentage of total U.S. physicians, pathologists have decreased from 2.03% in 2007 to 1.43% in 2017."

Demographic Shifts

For Rich Cornell, President and Founder of **Santé Consulting**, a recruitment firm specializing in laboratory medicine with a core concentration in pathology, a shrinking workforce is visible throughout the profession. In his work as a recruiter for AP and CP positions, Cornell has seen shortages among pathology groups nationwide.

"As members of the baby boom generation retire, the number of pathologists is declining, and those same boomers, as patients, need more anatomic and clinical pathology testing," he said.

Also, while medical schools have increased enrollment, the number of those choosing pathology is not growing proportionately so that they are not replacing their older counterparts in sufficient numbers, he added. After reviewing the JAMA study, he suggested that researchers should have used data on the number of pathologists from the **American Board of Medical Specialties**. ABMS shows there are 26,321 board-certified pathologists in the United States, including those in all subspecialties, of which approximately 19,000 are boarded in Anatomic and Clinical Pathology. "The data would have been that much more accurate if the researchers had used the ABMS numbers," he commented.

AMA Masterfile Best Source

In an interview with THE DARK REPORT Jason Y. Park, MD, PhD, the lead author of the JAMA study, said the researchers considered the AMA Masterfile to be the best source of data because it's updated regularly. Many years may pass before some organizations that collect data on the pathologist workforce will purge their lists, such as after a retirement or death, he said. Park is an Associate Professor in the Department of Pathology at the University of Texas Southwestern Medical School in Dallas and the Clinical Director of the Advanced Diagnostics Laboratory at the Children's Medical Center in Dallas.

"If you look at the workforce for physicians overall, including for pathologists, the AMA Masterfile is the best even though it's still considered to reflect an overage in the numbers," Park said.

Tighter Job Market

Those concerns aside, Cornell acknowledged that the research coincides with what he has seen in the job market. "Organizations seeking to hire pathologists need help recruiting and hiring specialists in pathology and in all of the subspecialties. Everyone is having a hard time finding good, talented pathologists," he concluded.

-Joseph Burns

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Number of U.S. Pathologists Falls, Even as Number of Canadian Pathologists Increases

BETWEEN 2007 AND 2017, THE CHANGE IN THE NUMBER OF PATHOLOGISTS practicing in the United States and Canada was studied by a research team of seven pathologists from five institutions in the two nations. Figure 1 and Figure 4 below are reproduced from the study published online by the *Journal of the American Medical Association* (JAMA) on May 31. It was titled, "Trends in the US and Canadian Pathologist Workforces From 2007 to 2017." The commentary under each figure is quoted from the JAMA study.

Figure 1. Decline in Numbers of U.S. Pathologists from 2007 to 2017



A) The total number of pathologists in the United States decreased in each year from 2007 to 2017, for an overall decrease of 17.53% (from 15,568 to 12,839). In contrast, numbers of US anesthesiologists and radiologists showed overall growth in the same 10-year period.
B) In Canada, the total number of pathologists grew 20.45% (from 1,467 to 1,767), which was comparable to growth observed in numbers of Canadian anesthesiologists and radiologists. The total number of US physicians increased by 16.61% (from 765,688 to 892,856). The total number of Canadian physicians in this period increased by 30.30% (from 63,819 to 83,159).

Figure 4. Increasing New Cancer Cases per Pathologist, United States vs Canada



The numbers of pathologists in the United States and Canada were adjusted for the new cancer diagnoses of the respective countries from 2007 to 2017. In 2007, there were 92.81 and 109.00 new cancer cases per pathologist in the United States and Canada, respectively. In 2017, there were 131.54 and 116.69 new cancer cases per pathologist in the United States and Canada, respectively.

Source: JAMA Network Open. 2019;2(5):e194337. doi:10.1001/jamanetworkopen.2019.4337

Fewer Pathologists Means Tighter Market for Jobs

Pathologists seeking new positions can expect higher salaries, along with increased workload

>> CEO SUMMARY: Pathologists seeking jobs will find that a more competitive job market is pushing salaries up over \$300,000 per year on average. In addition, most new jobs come with a hiring bonus and funds for relocation of as much as \$12,000 and for continuing medical education of \$3,500. But these higher salaries also come with a requirement for pathologists to handle more cases per year, and fewer pathology jobs come with opportunities to reach partner level.

First in a Series

OR ANATOMIC AND CLINICAL PATHOL-OGISTS, THE JOB MARKET may be as strong as it has ever been. The downside of such a strong market is that it reflects a shortage of pathologists to fill all the open positions, and this shortage may continue for the next two decades.

Research published in the *Journal of the American Medical Association (JAMA)* on May 31 shows that the number of pathologists working in the United States declined by 17.53% from 2007 to 2017. In the same period, the number of pathologists working in Canada rose by 20.45%.

Pathologist Workforce in U.S.

Adjusted for population, the workforce of pathologists in the U.S. is smaller relative to that of other countries that have experienced major adverse events in clinical laboratory quality and delays in diagnosis, the JAMA researchers reported. (See "JAMA Study: 17% Fewer U.S. Pathologists Since 2007," pages 3-5.)

This research and other data show that the job market for pathologists is dynamic, commented Rich Cornell, President and founder of **Santé Consulting**, which specializes in the recruitment for positions in the life sciences with a concentration in laboratory medicine and pathology.

During his presentation at the *Executive War College* in May, Cornell explained that a competitive job market means job-seeking pathologists will find rising starting salaries and hiring bonuses. But hiring groups, hospitals, and health systems also are raising the workload requirements because they need to do so as specimen volume rises. Also, fewer partnership options are available, Cornell said.

Among four organizations that track compensation for pathologists, Cornell reported that the five-year average annual salary ranged from \$271,000 (*from Salary. com*) to \$374,000 (*from the Medical Group Management Association*). The average was \$306,500.

Standard benefits include relocation (an average of \$12,000), a signing bonus of \$5,000; funding for continuing medical education of \$3,500; dental, health, and malpractice insurance coverage; retirement benefits, long and short-term disability, a cell phone, and a car, Cornell reported. According to the American Board of Medical Specialties, there are 26,321 board-certified pathologists in total, including sub-specialties in the United States, of which approximately 19,000 are board certified in Anatomic and Clinical Pathology. Note that the *JAMA* researchers used data from the American Medical Association Masterfile to calculate the number of working pathologists in the United States at 12,839 in 2017. (See pages 3-5.)

>500 Pathology Residents

To give a picture of the job market, Cornell said about 500 pathology residents graduate every year (although almost 600 graduated in 2018). More than 50% of last year's graduates were female. "So that obviously affects a lab's recruiting strategy," he said. "In addition, about half (48.6%) of these newly-graduated residents are international medical graduates (IMGs). IMGs are students who come to study in the United States from other countries.

"The number of IMGs rises every year," he noted. "We also see an increase in the number of osteopathic physicians who choose pathology. In 2018, 599 AP and CP residents graduated, but most of them (507) decided not to take jobs right away. Instead, they pursued fellowship opportunities.

"In this market, the average resident looking for a job often receives three job offers," Cornell explained. "That compares to just three to five years ago, when we saw pathology residents typically get only one or two job offers.

"For the 2018 graduating residents, job offers came from a variety of places," he added. "About 20% of placements went into group practices, and 40% of these new hires stayed in the same state where they trained. Some 3.8% went into academics, 1.6% went into the military, 0.9% went into non-clinical research, and 0.5% left the country. Not one pathologist was unemployed."

By the Numbers: 371 Positions Filled Last Year

N 2018, **Santé Consulting**, a recruiting firm for pathologists, found that of 371 job positions filled, the biggest demand was in cytopathology, general surgical pathology, and hematology, according to Rick Cornell, president of the recruiting firm in St. Louis. Here's the breakdown:

<u>No. of</u> Positions

S

<u>ositions</u>	<u>Subspecialty</u>			
33	Cytopathology			
33	General surgical pathology			
33	Hematopathology			
33	Gastro/liver pathology			
17	Molecular			
15	Chief or directorship			
15	Breast			
14	Genitourinary			
14	Transfusion medicine			
13	Dermatopathology			
12	Neuropathology			
12	Anatomic pathology only			
11	Clinical pathology only			
11	Head and neck			
10	Pulmonary			
6	Renal			
6	Other			
5	Clinical chemistry			
5	Bone and soft tissue			
4	Pediatric pathology			
1	Informatics			
ource: Santé Consulting, St. Louis, 2019				

The starting annual salaries for sub-specialty fellows ranged from \$220,000 for those in academic settings to \$300,000 for pathologists with highly subspecialized training, Cornell reported. By comparison, he said experienced pathologists taking director-level jobs will get a starting salary of \$400,000.

"Most pathologists today (56%) work in office settings, 17% are hospital residents or fellows, 15% are members of a hospital's physician staff, and 12% are in administration or are teaching," he said.

For any organization seeking to hire new pathologists, Cornell commented that not many newly-graduated physicians change jobs in their first 12 months after fellowship. The MGMA reports that only 5% of physicians move from one job to another in their first year, but that 40% of physicians change jobs within five years.

Moves Happen at 3-5 Years

"The data show that, while many newly-graduated physicians do not move initially, between years two to five, they begin seeking other opportunities," Cornell explained. "Poor cultural fit was the number one reason physicians voluntarily resigned from their current positions. The next most common reason was a relocation to be closer to family.

"Physicians looking for new positions also were seeking higher compensation (26%), a better community fit (22%), or a spouse was moving to take a new job (18%) and the pathologist was following the spouse to a new location," he said. "Two other reasons cited were incompatible work schedule (8%) and excessive call requirements (6%)."

These four reasons (community fit, spouse's new job, incompatible schedules, and call requirements) reflect lifestyle concerns. "Today's young pathologists want a work-life balance," he commented. "They want an eight-to-five job in which they can work Monday through Friday, have light call duty, and not work weekends.

Traditional Work Ethic

"When we recruit, we keep these concerns in mind," Cornell said. "Also, we find that many pathology groups have babyboomer physicians on staff. Boomers are older and have a traditional work ethic.

"But younger pathologists coming into the workplace don't have that same approach to their work. They want a different work situation compared to the interests of older, more mature physicians. For younger pathologists, work-life balance is important."

Any review of the job market involves analyzing who's hiring. "We're seeing a demand for the largest subspecialty within pathology, which is cytopathology, and in the second largest, which is hematopathology," Cornell said. "We're also seeing an increasing demand for pathologists to work in women's health, meaning gynecology."

Recently, Santé Consulting reviewed data on 196 job openings for pathologists in one year and found that 32% of those positions were for hospital-employed physicians, 34% were in academic settings, 17% were in single-specialty groups, and 17% were in commercial settings.

"Academic institutions are currently having a huge attrition rate due to retirements now, and so they're actively recruiting," Cornell commented. "That means they're being more aggressive by offering better compensation arrangements.

"Most of the job openings we've seen were in the South (34.2%), followed by the Northeast (29.6%), the Midwest (17.9%), and the West (11.2%)," he said.

Subspecialty Demand

Taking a deeper look at the numbers, Cornell explained that out of 371 job openings in 2018 that Santé Consulting reviewed, 33 jobs went to those specializing in cytopathology, 33 went to hematopathology specialists, and 33 went to those specializing in general surgical pathology.

Gynecology was the next largest group, accounting for 25 jobs. (See sidebar, "By the Numbers: 371 Positions Filled Last Year" on page 7.)

—Joseph Burns

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Editor's note: This article is the first of a twopart series on the job market for anatomic and clinical pathologists. Part two will focus on what millennials in pathology want when seeking new jobs.

Market Update

BRLI, LabCorp, Quest Disclose Data Breaches of 20M Patients

In all cases, the same payment services contractor was hacked for protected patient information

ARLIER THIS MONTH, **BioReference** Laboratories, Laboratory Corp. of America, and Quest Diagnostics each reported data breaches. The breaches originated with the American Medical Collection Agency (AMCA), which provides payment services to the three lab companies, according to published reports. The number of patients affected from the three incidents is at least 20 million and the breaches occurred over the same time period, August 2018 through March 2019.

On June 3, Quest said 11.9 million customers may have had their protected health information (PHI) compromised from a data breach that Wendy Bost, a spokeswoman for Quest, said originated with the AMCA, Quest's billing collection service.

▶7.7 Million Patients

The next day, LabCorp said personal data for about 7.7 million of patients whose information was held at the AMCA were exposed. LabCorp said the AMCA disclosed that it found unauthorized activity on its web-payment page between August 2018 and March 2019.

On June 6, *Health IT Security* reported that the AMCA had notified BioReference Laboratories (BRLI) of a data breach involving 422,000 BRLI patients.

The AMCA said that the breach compromised data such as patient demographic data, provider names, balance information, credit cards, e-mail addresses, and bank account information. All three lab companies said they have stopped sending new collection requests to the AMCA.

The news of these large breaches of protected health information has suddenly raised the media profile of the AMCA, a company founded in 1977 which is based in Elmsford, N.Y. It provides collection services to clinical labs, hospitals, physicians, and other providers.

Michigan Attorney General

In fact, the Attorney General of Michigan, Dana Nessel, announced that her office would investigate the AMCA. *Health IT Security* reported that Nessel "said she'll be sending a letter to [the] AMCA, Quest, and **Optum360** (a Quest Diagnostics partner) to gain more insight into the event, although the total number of victims is not yet known."

The news outlet also wrote that "Nessel is particularly troubled by the length of time the hack was able to continue without being detected by [the] AMCA. For Quest, the exposed data included highly sensitive information like Social Security numbers, and some health information."

Nessel told *Health IT Security* that "Quest is only one of [the] AMCA's medical clients, so it is possible that patient information from other healthcare providers may have also been breached. "We have no idea how far and wide this breach has gone," she said.

-Joseph Burns

>>> CEO SUMMARY: Today, insurers get risk-adjusted payments for treating patients who have high-cost health conditions and they make risk-adjusted payments to physicians, hospitals, and other providers. At Northwell Health, the clinical lab saw the opportunity to leverage lab test data with other clinical and demographic data to identify patients who were undiagnosed or whose conditions were undocumented under the hierarchical cost category (HCC) system. Using data in this way allowed the lab's parent healthcare system to qualify for additional riskadjusted payments associated with these patients.

"Under shared- and full-risk arrangements, increased payments can flow from CMS to health systems and providers," explained Liya Lomsadze, the Project Manager in Pathology Informatics for Northwell Health, in New Hyde Park, N.Y.

"This is a positive development for clinical laboratories, because payers, providers, and patients can benefit when risk adjustment works as intended to improve patient outcomes and reduce healthcare costs," Lomsadze added. "Labs are positioned to benefit because they are often first to know when a patient has a costly disease or health condition."

In the past, insurers paid clinical labs based on the volume of tests they ran, a practice that sustained clinical laboratories for years. But today, labs seeking to At THE DARK REPORT'S *Executive War College* in May, Lomsadze gave a presentation on risk scores and risk adjustment, explaining that insurers use risk scores to identify the relative illness burden for each patient or for a group of patients. Her presentation was titled, "Why Risk Adjustment Is Every Lab's Surefire Way to Add Value: What It Is, How It Works, and Where Savings Are Found."

She explained the issue in two parts. In the first part, she outlined the basics of risk adjustment and how insurers and providers are paid for managing the financial risk of delivering care to patients.

In this part, she outlined how a clinical laboratory can support health insurers, health networks, physicians, and other providers who are delivering care in value-based payment systems in which

Helps parent organization by finding patients eligible for risk-adjusted payments

Northwell Health Lab Team Leverages Data to Add Value

A CLINICAL LAB 2.0 CASE STUDY

HILE MORE HEALTH INSURERS PAY FOR VALUE-BASED CARE, clinical laboratories are realizing that the insights derived from lab test data may have more value to insurers than the lab-test results themselves.

Some health insurers are recognizing a fact well-known to clinical pathologists and lab scientists for decades: insights derived from patients' lab-test data have value because a health insurer can use those insights to manage the health of each of its members more effectively and more efficiently than it may have done so previously. One factor behind health insurers' interest in value-based care is the increased payment that health plans participating in the Medicare Advantage (MA) program get from the federal **Centers for Medicare and Medicaid Services**. Those payments are based on the risk scores that CMS assigns to Medicare Advantage plan members. As risk scores rise, CMS adjusts the payments it makes to health insurers.

As a result, increased risk scores translate into increased payments for MA plans and for the physicians and other providers serving those patients under shared-risk arrangements between payer and providers. improve care delivery under the clinical lab 2.0 service model understand that health insurers using shared-risk arrangements will pay more to providers who care for patients who have more costly health conditions.

> New Lab Revenue Streams

These labs also understand that they can develop new revenue streams when they develop insights from the lab-test data they've collected on patients over many years, and then deliver those insights to physicians and other providers who care for high-risk and high-cost patients.

all the payers and providers are sharing the financial risk of caring for a panel of patients in a risk-adjusted environment.

In the second part, she provided a case study on how Northwell Health's clinical laboratory volunteered its capabilities to help the health network's administration identify patients with increased health risk. Lomsadze explained how the lab used its database of lab-test results to identify patients whose conditions were either undiagnosed or whose conditions were undocumented. Doing so allowed Northwell Health to qualify these patients for increased payments associated with the increased costs.

>PART ONE Understanding Risk Adjustment

"The risk adjustment concept is based on the recognition that patients with more costly and chronic conditions require more intensive care than patients who are relatively healthy," said Lomsadze. "Thus, in a risk-adjustment arrangement, CMS pays health insurers more for sicker patients than they pay for patients who are healthy. Increased payments are based on the risk scores of the insurers' members.

"Health insurers assign each patient a risk score based on the patient's level of illness," she continued. "Members who have the highest risk scores have the most-costly conditions, and patients with the lowest scores are relatively healthy.

"Risk scores can also be used throughout the health system in value-based contracting so that payers can reward physicians, hospitals, and other providers in an equitable way," she said. "Thus, if my hospital happens to care for sicker people than your hospital does and we have a higher readmission rate, we can adjust for that so that every hospital gets judged fairly."

Evaluating Risk and Reward

"Each patient's risk score is determined based on the predicted cost of delivering care for a year. You can put any data you have on your member population into a regression model to predict the cost of care for each member," she added. A regression model is used to analyze the relationship among two or more variables and to compare one variable against others.

"In the early days of risk adjustment, CMS had only basic demographic information on patients," she commented. "But today, more risk adjustment models are incorporating data on medical conditions, the drugs patients take, and what procedures those patients have had."

When assessing patients, payers use CMS' hierarchical condition categories (HCCs), a system designed to estimate future costs. "There are two HCC models that apply to two populations," Lomsadze explained. "One model applies to members of Medicare Advantage plans, and the other applies to members who have individual or small-group coverage under the Affordable Care Act (ACA)."

In her presentation, many of the risk-adjustment examples came from the MA model and others came from Northwell's CareConnect health insurance program, which provided coverage for members covered under the ACA.

More Costly Conditions

"HCC models are useful for predicting the cost of care," she noted. "For example, a relatively common condition, such as hypertension, which many individuals have, is, by itself, not a meaningful indicator of higher cost of care. But other conditions, such as diabetes or end-stage renal disease, are much less common and can be more costly.

"Under Medicare, there are 79 different conditions on the HCC list and as much as 60% of the Medicare population will have one or more of these conditions in the United States," commented Lomsadze. "When people who are under 65 are added, there are about 128 different conditions associated with risk adjustment payments."

Since 2004, Medicare has assigned risk scores to patients with certain conditions. For diabetes in patients under 65, the HCC score is 1.3, which means it costs about \$470 more per month and about \$5,645 more per year to care for a patient with diabetes, she explained.

For a patient with sepsis, the HCC score of 10.7 reflects a higher cost of care of \$3,739 more per month, and \$44,877 more over a year compared with a healthy patient.

"If a health insurance plan thinks it can control the costs of a diabetic population at less than \$5,645 per patient per year, it might want to attract diabetes patients specifically and then control their costs down

Northwell Health Lab's Strategy Designed to Help Its Parent with Risk Adjustment

WHEN DESCRIBING THE STRATEGY taken by the clinical laboratory at Northwell Health in New Hyde Park, N.Y., Liya Lomsadze, the Project Manager in Pathology Informatics, explained how risk adjustment works, using the example of the Medicare Advantage Program. Table A below shows an example of the annual base premium an insurer would be paid, plus the additional premium amounts for the higher risk of selected conditions.

Table A: Risk Adjustments in Medicare Advantage Program

Additional annual payment to insurer for selected conditions

 Diabetes without complications Breast, prostate; other cancers, tumors Diabetes with acute complications Drug/alcohol dependence Major depressive, bipelor, parapoid disorders 	\$1,058 \$1,490 \$3,251 \$3,910 \$4,020	Assume: Male, age 70-74 Base annual rate: \$3,866
Lung and other severe cancers Matastatic cancers	\$9,904	
Source: Center for Public Integrity	φ20,795	

to or under that threshold," Lomsadze explained. "That happened after the ACA was implemented when **Aetna** deliberately sought to attract diabetes patients from the health insurance marketplace.

"Labs can assist health insurers in identifying the most-costly patients by delivering data that allow payers to estimate each member's risk score according to the patient's level of illness," she noted.

▶PART TWO Northwell Case Study

In the second part of her presentation, Lomsadze explained how the clinical laboratory at Northwell Health uses insights from lab test data to identify patients who have undiagnosed conditions or whose conditions are not documented properly in the electronic health record (EHR) system.

"In 2014, Northwell started a health insurance company called **CareConnect** to manage patients under the ACA," she said. "But that plan lost more than \$200 million due to risk adjustment, and, in 2017, a decision was made to close the plan." For Northwell, that result was a significant lesson learned. "Under the Medicare program, the base rate per member per month is a capitated payment set according to the age and gender of each member, and each additional condition that is documented in the patient's record represents additional money from Medicare to the insurer," she said.

"Given all of this, how would a payer prove that its members are as sick as they are?" she asked. "It would need to document all of the different conditions in claims. And there are four requirements that need to be met to document HCCs in claims:

- 1) The qualified provider needs to have a face-to-face encounter with the patient.
- 2) The encounter must be during the measurement period.
- The encounter needs to be documented with an appropriate diagnosis code.
- 4) The payer needs to pay for that encounter.

"Once a payer follows and documents these four steps, it needs to repeat them annually," Lomsadze advised. "Regarding the face-to-face encounter with a provider, let's say a patient only had a medical laboratory test last year but didn't see his or her primary care physician," she said. "That doesn't count. If the patient got only a drug or a radiology test, that doesn't count.

Evaluation and Management

"What's required is an E&M code (for evaluation and management) and it must happen during the measurement period," she added. "For most plans, that means the calendar year, but the plan year can start at other times as well.

"Also, the provider must actually bill the insurer with the appropriate diagnosis code that maps to the HCC," she added. "In return, the payer has to pay the provider for that patient's care.

"Risk adjustment requires the payer to repeat this process every year," she noted. "But not every patient sees their physician every year.

"Consequently, payers and healthcare systems won't get that added risk-adjustment payment for patients who have high-cost HCCs and who do not see their physicians every year," Lomsadze observed. "This problem is just one challenge payers face when seeking to get paid for their patients with high-cost HCCs.

"It's important for labs to recognize that payers rely on claims data," she added. "We all know the problems with claims data, including timeliness issues and data gaps. And there is churn among members, meaning they move from one insurer to another.

Approaches to Risk

"Our lab has noticed that payers take one of two ways to approach risk adjustment," she added. "One is passive, meaning the health system waits for its insured patients to seek the care they need organically. Then, the health system waits for the claims to roll in and maybe at yearend it audits a sample of patient charts to make sure nothing was missed. "The other way is more active in which the payer seeks out those patients who have not seen a physician during the year. In healthcare, being more proactive in this way is a best practice," she recommended.

"With this more active approach, a payer will use all the historical data at its disposal to identify HCCs that may have been dropped," she said. "It may have clinical data to identify its high-risk members, for example. Then, the payer can develop ways to incentivize those patients to get annual health assessments, allowing all of their conditions to be captured every year.

"Once the payer follows these steps, more diligent clinical documentation and greater attention to proper coding can cause the risk scores of a population to go up," she explained.

Lacking Historical Data

"Lacking the historical data it needed to do risk adjustment properly, Northwell's CareConnect health plan became a casualty of sizeable unfavorable risk adjustments against it," she said. "Understanding how to address these challenges became important lessons learned.

"In 2016, Northwell put out a call across the system to improve our ability to do risk adjustment," she said. "At that time, our clinical laboratory told administration it could help address these challenges.

"In September 2016, our lab team reviewed the list of risk-adjustable conditions in the ACA insurance market," she commented. "About half of these conditions can be diagnosed or monitored using a lab test, including hemophilia and end-stage renal disease.

"Next, using this list of lab-identifiable conditions, we made up two separate lists," said Lomsadze. "On one list, we put the health conditions that have the highest risk-adjustment value, and on the other list, we added those conditions that are generally under-documented or under-recognized.

To Identify Patients with HCCs, Northwell Lab Combines Different Data Sets, Uses Algorithm

BELOW IS GRAPHIC B, WHICH LIYA LOMSADZE USED TO SHOW how the Northwell Health lab compares the health insurer's roster of enrolled members to the patient in the laboratory data warehouse. Algorithms are used to identify patients with conditions included in Medicare Advantage's hierarchical cost category (HCC). The lab submits these findings to the insurer.

Graphic B: Northwell Health Laboratory's Steps Used to Identify Patients with Risk



Using the steps above, table c below shows the number of patients and dollar value that the Northwell Health Lab was able to identify as having a condition not in the patient's health record that would increase the risk adjustment payments. Lab's return on investment was 10 to one.

Table C: Lab Impact on CareConnect in 2016 6% of lab leads operationalized with >10:1 ROI

Condition	ldentified via Lab Test Result	# Patients: w/Gap	# Patients: Documented	Mitigation (\$)
Cancers	Cancer antigen $125 \ge 200$; A	P 17	3	\$214,693
Diabetes	$A1C \ge 6.5$	249	30	\$153,509
Transplant	Tacrolimus level	6	2	\$107,345
Sepsis	Positive blood culture	9	1	\$88,870
Chronic hepatitis	Hepatitis B surface antigen	22	2	\$18,704
Rheumatoid arthritis	CCP antibody	17	1	\$12,143
Seizures	Carbamazepine	6	1	\$6,987
Bipolar disorder	Lithium	25	1	\$5,040
Total		351	41	\$607,291

"Using data in our lab database, we used an algorithm to match our patients against the roster of enrolled members from our insurance company," she said. "This patient-matching method allowed us to identify patients whose lab data indicated the presence of certain high-cost conditions. Then, the lab presented this analysis to our health insurer.

"That's when the real work began, because our colleagues at CareConnect had to operationalize these clinically-actionable insights," she added. "For example, they worked to confirm that—for each patient encounter—the diagnosis predicted by lab data was documented on that patient's chart.

Manual Chart Review Needed

"If the HCC was not documented on a claim, it could still be supported by clinical documentation and submitted to CMS," Lomsadze said. "This requires a manual chart review using a retrospective approach. "Our colleagues compared those patients suspected of having high-cost conditions against the claims filed for those patients," she explained. "Potential gaps in documentation can be identified in this step.

"This retrospective approach is time-consuming," she noted. "It requires someone to find the eligible patient encounters, retrieve those patient charts, and then code those charts appropriately using ICD-10 codes. Once CareConnect followed these steps, they could submit these supplemental diagnoses to Medicare.

This Work Is Challenging

"Doing this work is challenging, especially getting the documentation for those patients who received care outside of our health system," she added. "Anyone who has attempted to get patient charts from an organization that's not part of the same health system knows how difficult this step can be.

"As you would expect, there was fallout at every step," commented Lomsadze. "But even with many challenges, we still identified about 600 leads in 2016. From those leads, CareConnect chased down the records to get them coded and submitted properly. We ended up with 41 patients whose diagnoses would not have been found without lab leads.

"While that number was small compared to the plan's total enrollment, it was both interesting and useful," she said. "For example, our lab identified a number of diabetic patients who lacked the proper documentation in their claims. Within that same pool were two patients whose transplants had not been documented in claims during the entire year of those patients' care."

This data-matching exercise allowed the lab to identify specific patients who had sepsis, or who had cancer, and yet CareConnect might not have been paid the full HCC amount for those patients.

"That was a major wakeup call for us, because the proper coding and documen-

tation for those patients helped the lab generate about \$600,000 for the health system," she recalled. (*See Table C in the sidebar on page 15.*)

From the data-matching initiative, Northwell learned that it had documented correctly three patients with a diagnosis of cancer, but failed to capture the diagnosis of 14 other patients who likely had cancer. It had documented 30 patients with diabetes correctly, but missed documenting 219 other diabetic patients.

Retrospective coding for these patients, and those with sepsis, chronic hepatitis, rheumatoid arthritis, seizures, bipolar disorder, and patients who got a transplant, brought in a total of \$607,291 in one year to CareConnect.

"This demonstrated the power of lab data to find gaps in documentation, and to find patients whose claims were incomplete for diagnoses that would qualify for higher risk-adjusted payments," she noted. "Since then, our lab has made regular improvements to our data-matching algorithms."

As she closed her presentation, Lomsadze emphasized the value of lab data, saying insights derived from lab test results collected over many years have more value than other sources of patient data.

Reflecting Provider Intentions

"From clinical laboratory data, our lab team is the first to know what's happening with the patient," commented Lomsadze.

"The laboratory knows where these patients are and how severe their conditions are," she said. "In addition, our data are discrete, granular, and objective compared with other sources of data, such as claims. Our lab team can use clinical lab test data to improve the accuracy of risk-adjustment efforts, and it can help predict the costs for patients with these conditions." TDH —Joseph Burns

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Iowa Nursing Homes Lose Phlebotomy Service Twice

Since April, nursing homes, LTC facilities, and home-bound patients have lost draw services twice

>> CEO SUMMARY: It may be without precedent in the clinical lab industry that a laid-off lab manager launches a nonprofit mobile phlebotomy service in order to continue services to homebound patients, nursing homes, and long-term care facilities. The events in the Quad Cities of Moline, III. and Davenport, Iowa, are also the most recent example of how PAMA cuts to Medicare clinical laboratory test prices have a role in reducing the access of Medicare beneficiaries to local, quality lab testing services.

OMETIMES PATIENTS IN SMALL COM-MUNITIES LOSE ACCESS to quality lab testing services when a long-established independent laboratory closes or is acquired. Since April 1, that scenario has been playing out in the Quad Cities of Moline, Ill., and Davenport, Iowa.

On that date, **Laboratory Corporation** of America (LabCorp) acquired **Metropolitan Medical Laboratory**, a privately-held company that had served the Quad Cities area in Iowa and Illinois since 1914. At the time, a local newspaper reported that some 136 employees could lose their jobs. (*See TDR, Mar. 18, 2019.*) But this story has an interesting twist.

On the day LabCorp closed the MetroLab deal, one of the employees who lost her job there launched a nonprofit organization to replace a long-established mobile phlebotomy service that the lab's new owner was not providing.

The nonprofit **Heart and Hands Home Draw** did home draws and mobile phlebotomy until May 24 when the business, which was running on donations, could no longer survive financially, said Carla Downing, who started the service and contributed her own funds and enough donations to run the operation for almost two months.

As of the end of May, patients at home, in nursing homes, and in longterm care facilities in the Quad Cities no longer have access to mobile phlebotomy, although Downing said she has been in contact with a national lab interested in reopening the service. She declined to name the national lab, saying the talks were only preliminary.

No Mobile Phlebotomy

"Since the mid-1980s, MetroLab operated a mobile blood-drawing service in the community to serve homebound and other patients unable to easily get to a patient service center," Downing said in an interview with THE DARK REPORT. "However, after hearing about the pending sale in January, lab employees learned that LabCorp would not retain this mobile blood-drawing service."

From this department, MetroLab sent certified phlebotomists to nursing homes, long-term care facilities, and to home-bound patients in Illinois and Iowa, explained Downing. The patients were disabled or otherwise had trouble getting to a patient service center or doctor's office. Downing worked for MetroLab for 11 years and was laid off at the end of March.

"As news of the acquisition and the termination of this service became known in the community, physicians and many of these patients were very concerned," stated Downing. "These patients and their physicians began calling MetroLab's Extended Care department asking what would happen after April 1. We didn't have an answer for them. Some would cry over the phone.

▶55 Nursing Homes

Until MetroLab ended its service at the end of March, it had served about 200 to 300 patients each week. "In Iowa, we served about 25 large nursing homes and a few smaller nursing homes," she said. "In Illinois, we probably had 30 or more nursing homes." Phlebotomists would serve these patients and the larger facilities five days a week.

"Our patients would call the lab and ask, 'What are we going to do?" Downing recounted. "I didn't know. But whenever I was in the office, I was the one who got many of those calls.

"Patients would ask, 'Is there any other service like this out there?" she added. "No, unfortunately. MetroLab was the only company drawing blood in patients' homes in these communities."

After working in the mobile-phlebotomy service since 2007, Downing knew many of these patients and their doctors by name, a factor that made it that much harder to deliver the bad news to patients.

"Whenever those patients would call about it, they would worry," Downing commented. "Some would say they would pray about it. That's when I started praying about it myself."

She also explored the possibility of offering the service based on raising funds through donations, and she knew that Medicare paid little for a blood draw and it paid a small fraction of the cost for a phlebotomist to drive each mile to collect blood. Even combining these two fees was insufficient to cover the actual costs.

Any lab that serves nursing homes and long-term care facilities knows these facts well, as do the nation's largest lab companies which do not provide such service because it is not cost-effective.

In attempt to fill this need, Downing organized Heart and Hands Home Draw and accepted donations from MetroLab of office space, blood-drawing supplies, and a computer and fax machine. She used the donated equipment to get the new service operational on April 1.

"Our challenge is that Medicare reimbursement for phlebotomy and travel to a patient fails to cover the cost of this service. That's why we started a nonprofit organization," explained Downing. Local news organizations covered the story about this new service and as of June 1, Downing was still seeking donations on the website she started, at *https:// heartandhandshomedraw.org*.

In the seven weeks or so of its operation, Heart and Hands served 20 to 30 patients per day, and Downing expected to average about 100 to 125 patients per week, depending on the season. More patients find it difficult to get out in the winter, for example.

Getting the donations was an answer to Downing's prayers, she said. Once she told a few patients that the new service was available, she started hearing from physicians who wanted the service for their patients.

In addition, Downing used her own funds to pay the phlebotomists and to cover other costs. Some of those funds came from a retention bonus and payment for earned time that MetroLab owed her, she said.

She retains hope that some organization, perhaps the national lab company, will restart the service.

—Joseph Burns

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Digital pathology is coming in a big way to two regions in two

different nations. In the United Kingdom, it was announced on May 30 that the North Tees and Hartlepool NHS Foundation in the north of England signed a five-year contract with Sectra of Linköping, Sweden. Sectra is to deliver a "regional digital pathology solution" in support of the Northern Cancer Alliance. The alliance is a consortium of 10 separate healthcare trusts in the region. Just a week earlier, Alverno Laboratories of Hammond, Ind., issued a press release about its agreement with Royal Philips of Amsterdam, The Netherlands, to implement Philips' FDA-cleared digital pathology system across Alverno's central laboratory and the 30 hospitals it serves in multiple midwestern states.

MORE ON: Regional Digital Pathology

Different factors are driving the use of digital pathology in these two regions. In the United Kingdom, a shortage of histopathologists has made national headlines because of delays in reporting the results of diagnostic tests for cancer patients. Use of digital pathology is one strategy to shorten existing cancer test turnaround times. In the case of Alverno Laboratories, the clinical and business strategy is to integrate and standardize across all the hospitals and labs served by Alverno. Use of digital pathology is expected to help achieve those strategies across all sites.

TRANSITIONS

• Effective Sept., 2019, Douglas P. Clark, MD, will become the Chief Medical Officer of **Tri-Core Reference Laboratories** of Albuquerque, N.M. Clark is currently Chair of Pathology at the **University of New Mexico School of Medicine** and has served on TriCore's Board of Directors since 2013. He has held positions at **BioMarker Strategies** and Johns Hopkins **School of Medicine**.

• EverlyWell of Austin, Texas, announced that Frank S. Ong, MD, is its new Chief Medical Officer and Scientific Officer. EverlyWell describes itself as a consumer at-home lab testing company. Everly-Well just raised \$50 million in capital. Ong formerly worked at Guardant Health, Roche, Diagnostics, NantHealth, Illumina, and Cedars Sinai Medical Center.

• OncoCyte Corporation, Inc., of Alameda, Calif., hired Kim Dickinson, MD, to be Vice President of Clinical Operations. Prior to this position, Dickinson served at Biocare Medical, Roche Tissue Diagnostics, Laboratory Corporation of America, Esoteric Testing, Quest Diagnostics, Citrus Valley Medical Center, and Pioneer Hospital.



DARK DAILY UPDATE

Have you caught the latest e-briefings from DARK Daily? If so, then you'd know about...

...the report of researchers at the **University of Queensland** disclosing the discovery of a universal biomarker that can identify cancer in various human cells in just 10 minutes with 90% accuracy. The study was published in the journal *Nature Communications*.

You can get the <u>free</u> DARK Daily e-briefings by signing up at www.darkdaily.com.

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