Volume XVI, Number 3 Monday, February 23, 2009

From the Desk of R. Lewis Dark...

THE DARK REPORT

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

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COMMENTARY & OPINION by...

R. Lewis Dark
Founder & Publisher

Are Labs To Be Punished for Vitamin D Testing?

HERE'S AN INTERESTING QUESTION: Are labs to be punished because patients want to know if their Vitamin D levels are sufficient? Consider this: THE DARK REPORT predicted last year that labs might suffer a backlash from payers as a result of increased demand for Vitamin D testing.

In a briefing titled: "Vitamin D Test Volumes Double in Past Year," published on July 28, 2008, we said, "Across the nation, labs report a near doubling in the volume of Vitamin D tests they are performing. Will Medicare and private payers recognize that, per evidence-based medicine guidelines, this testing is justified and labs should not be punished for increased utilization?"

Now comes news that **National Government Services** (NGS), one of the nation's largest Medicare contractors, is taking steps to make that prediction become reality by its proposal to stop paying for routine testing for Vitamin D insufficiency. In its proposed local coverage determination (LCD), NGS said it would cover Vitamin D testing only for patients with chronic kidney disease, osteomalacia, hypercalcemia, and rickets. Other testing for Vitamin D would be denied. Is this short-sighted bureaucratic thinking? Or is it part of a shrewd, long-term strategy to reshape utilization of laboratory testing in this country? *(See pages 7-8)*

After all, if Medicare patients must pay out of pocket for Vitamin D testing, then many will forego these tests, putting themselves at risk for long-term chronic conditions. Eventually, Medicare will need to pay to treat patients who have these chronic and costly conditions. For that reason, NGS' proposal to deny coverage for routine Vitamin D sufficiency testing puts Medicare squarely at odds with its stated goal of supporting early detection and preventive medicine. So much for a $40 Vitamin D test once every year or two and its potential to save the healthcare system tens of thousands of dollars per patient in downstream costs.

More importantly for the laboratory industry, this ill-conceived proposal to deny coverage for a test that is relatively non-controversial should be viewed for what it is: less an effort to guide clinicians via appropriately coverage guidelines and more a deliberate step to constrain increases in the cost of care by shifting the burden away from Medicare and onto both patients and the laboratories that provide their physicians with these tests. TDR

Molecular Advances Soon To Reshape Anatomic Path

Predictions that pathology is to become more quantitative because of new technologies

CEO SUMMARY: Early this month, the second annual Molecular Summit assembled molecular first movers and early adopters to discuss their efforts to integrate molecular imaging and molecular diagnostics in patient care. One clear message emerged from two days of presentations and discussion: a host of new technologies is ready for clinical introduction and is likely to rapidly transform both radiology and pathology.

By Robert L. Michel

HEADING TO AN ANATOMIC PATHOLOGY GROUP near you is a flood of molecular technologies that promise to swiftly transform the pathology profession as we know it today.

That was a common view of both speakers and attendees at this year's *Molecular Summit on Integration of In Vivo and In Vitro Diagnostics*, which took place earlier this month in Philadelphia. It is not often that such a broad consensus emerges from an event like this, which adds impact to this development.

The consensus centered around these key points:

• Many molecular technologies in both imaging and *in vitro* diagnostics presented at *Molecular Summit* are almost ready for clinical use and will be introduced on an unexpectedly short timeline.

• Many of these molecular technologies will give pathologists and radiologists remarkably powerful and precise new capabilities in the diagnosis of disease.

• Personalized medicine has arrived in healthcare and new personalized medicine services are being introduced into our healthcare system at a steady pace.

• Diagnostics will increasingly be organized around the use of quantitative data, particularly in anatomic pathology.

• Single-analyte assays will give way to multi-analyte assays. These new tests will often incorporate tens of thousands of analytes and data points for evaluation.

• Multi-modality analysis will become quite common and will utilize molecular imaging, molecular diagnostics, and other types of clinical data for assessment in diagnosis, therapeutic decisions, and monitoring patient progress.

THE DARK REPORT Intelligence Briefings for Laboratory CEOs, COOs, CFOs, and Pathologists are sent 17 times per year by The Dark Group, Inc., 21806 Briarcliff Drive, Spicewood, Texas, 78669, Voice 1.800.560.6363, Fax 512.264.0969. **(ISSN 1097-2919.)**

R. Lewis Dark, Founder & Publisher. Robert L. Michel, Editor.

SUBSCRIPTION TO THE DARK REPORT INTELLIGENCE SERVICE, which includes THE DARK REPORT plus timely briefings and private teleconferences, is $13.10 per week in the US, $13.70 per week in Canada, $14.85 per week elsewhere (billed semi-annually).

Molecular Summit is organized by THE DARK REPORT to bring together first movers and early adopters in pathology and radiology who are developing integrated clinical services. It is unique in the world because it is the only conference which brings together experts in molecular imaging, molecular diagnostics, and health informatics.

Several speakers predicted that the natural evolution of genetic medicine and molecular technologies will encourage the creation of a single diagnostic service, particularly in academic and tertiary care centers. This single diagnostic service will be capable of providing clinicians with an integrated diagnosis. It will also offer clinicians active consultation with the pathologists and radiologists who evaluated the specimens and worked up the patient.

Just such an integrated diagnostic service is under development at the **UCLA Medical Center** in Los Angeles, California. The departments of pathology and radiology are preparing to open an integrated diagnostics center. Jonathan Braun, M.D., Ph.D., Chair, UCLA Department of Pathology and Laboratory Medicine, described the project to the Molecular Summit attendees. Dieter Enzmann, M.D., Chair of the UCLA Department of Radiology, was in attendance and is a collaborator on this integrated diagnostic service.

George Poste Predicts Major Role for Dx

KEYNOTE SPEAKER George Poste, DVM, Ph.D., discussed the likely adoption paths for molecular diagnostics and molecular imaging. He is Chief Scientist and Director at **The Biodesign Institute of Arizona State University**, located in Tempe, Arizona.

Poste is one of the world's foremost experts on biomarkers and was bullish on the role that molecular diagnostics will play in realizing the goals of personalized medicine. He outlined how healthcare will utilize diagnostics as it evolves and discussed the bullet points below:

Central Role of Next-Generation Diagnostic Technologies in Proficient Healthcare Delivery

- Precision diagnosis
- Rational Rx selection
- Reduce errors
- Increasingly standardized clinical practice
- Remote health status monitoring and patient compliance
- Disease predisposition and risk mitigation
- Increased personal responsibility for risk mitigation and wellness
- Integrated care continuum

➤ Patient-Centered Care

Braun described the effort as patient-centric care delivered by an integrated radiology/pathology service model. The two departments will build their first integrated radiology/pathology patient service center in a physician office building in Santa Monica. They expect the promise of an integrated diagnosis within 48 to 72 hours will encourage local physicians to refer patients—thus expanding market share for both the UCLA radiology and pathology departments.

Their goal is to deliver a novel, patient-friendly approach to image-guided biopsy sampling for malignancy work-up. Radiologists will use CAT, MRI, and ultrasound to isolate and sample suspicious lesions. Pathologists will handle processing and diagnosis of the specimen. The pathology report will be combined with the radiology report to provide referring physicians with a comprehensive single-copy report that is accessible via the Internet.

For anatomic pathologists, one unmistakable theme delivered by multiple speakers was that a host of new technologies is about to transform the profession. Speaker Richard C. Friedberg, M.D., Ph.D., Professor and Deputy Chairman Department of Pathology at **Tufts University School of Medicine**, in Springfield, Massachusetts, described how oncology is rapidly adopting a molecular classification of different cancers. He noted that this has already happened in hematologic oncology.

Quantitative Diagnosis

"The trend in diagnostics is clearly towards integration of data," stated Friedberg. "Anatomic pathology and radiology have traditionally been qualitative 'pattern recognition' fields. However, new technologies are providing practitioners in both specialties with the greater precision, accuracy, reliability, and measurability needed to become more quantitative."

Friedberg then noted that clinical pathology has long been a quantitive diagnostic service, stating "clinical pathology regularly gathers information from a number of sources within and without the laboratory and delivers an integrated answer to the physician. In this same manner, anatomic pathology is going to evolve into primarily a quantitive service."

Computer-Aided Diagnosis

It is likely that both computer-aided diagnosis (CAD) and pattern recognition technologies will play an important role in anatomic pathology's transition from a qualitative service to a quantitative service. Several speakers are doing advanced work in these fields and demonstrated these techniques.

Based on his work with prostate and breast cancer, Anant Madabhushi, Ph.D., Assistant Professor, Director, Laboratory for Computational Image & Bioinfomatics (LCIB) at **Rutgers The State University of New Jersey** in Parsippany, showed how multi-modality diagnosis can be achieved using enhanced informatics and computer-aided image diagnosis.

Madabhushi showed ways that CAD can be used to evaluate MRI images. CAD can characterize MRI data using multiple texture features. Unsupervised consensus

David Galas Discusses Systems Biology

INTRODUCING MANY IN THE AUDIENCE to developments in the field of systems biology was David Galas, Ph.D. He is Professor at the **Institute for Systems Biology**, in Seattle, Washington, and Vice President and Chief Scientific Officer of the **Battelle Memorial Institute** in Columbus, Ohio.

Galas described how systems biology is an approach to dealing with the complexity of human biology. He discussed how biological networks capture, transmit, process, and channel information. His team is working to develop multi-analyte diagnostic capabilities using this information, as follows:

Technologies Key to Catalyze Future Personalized Medicine

- High throughput DNA sequencing for individual human genome sequences
- Targeted MRM protein mass spectrometry for discovery and validation of blood protein diagnostic fingerprints
- Microfluidic protein and RNA chips to measure blood organ-specific protein, and RNA fingerprints and to type millions of individuals
- New chemistry and new approaches to protein-capture agents
- Single-cell and single-protein analyses—deciphering the interplay of the digital genome and the environment
- *In vivo* and *in vitro* molecular imaging to detect, assess disease distribution and follow therapy

clustering is also used to classify data. Madabhushi noted that high sensitivity and specificity (>90%) can be achieved on a per-voxel basis.

Next, Madabhushi showed the use of CAD with the histological images. For a prostate cancer case, he demonstrated how the CAD software can isolate regions of interest for the pathologist's examination. CAD will also identify different regions for evaluation to determine the grading scheme of the cancer.

Pattern Recognition

Pattern recognition will be another transformational technology in anatomic pathology. It figures prominently in the work of Badri Roysam, Ph.D., Professor of Electrical Computer & Systems Engineering at **Rensselaer Polytechnic Institute** in New York City.

In radiology, Roysam described the need for more biochemically-specific information at the cellular scale. "This need spurred the development of high throughput gene and protein analysis tools, such as microarrays," noted Roysam. "But these tools miss all spatially-linked information. We want to understand the intact tissue structure, the spatial location of markers, and the spatial relationships among multiple cells and tissue. Only imaging can provide these forms of information."

In histopathology, Roysam described how the field is evolving along these lines:

• "Multi-scale Multiplex Histocytometry", which means: 1) understanding complex tissues on a tissue scale with sub-cellular detail; 2) being able to see all the molecules of interest in their native context; and 3) being able to quantify at multiple scales.

• Optical microscopy will remain an attractive tool for molecular histopathology, with these points: 1) growing role for fluorescent stains alongside chromogenic stains; 2) higher level of multiplexing will allow us to examine many molecules of interest in their context (many more than humanly viewable in brightfield); and 3) high-throughput (arrays) & high-extent (whole-slide) imaging.

• Growing role for automated image scoring and interpretation that produces more quantitative and objective inferences, along with data-based scores that are consistent across [testing] centers.

These highlights from *Molecular Summit 2009* demonstrate why first movers in pathology and radiology are making swift progress toward the ideal of an integrated diagnostic service. At the same time, new technologies are arriving that promise to accelerate this evolution. TDR

Cliff Hoyt Explores Future of Tissue Sections

ANATOMIC PATHOLOGISTS WERE CAREFUL LISTENERS during the presentation of Cliff Hoyt, M.S., Vice President and Chief Technology Officer at **CRI-Inc.** in Woburn, Massachusetts.

Hoyt's company is using technologies in informatics and pattern recognition to develop new capabilities in *in vitro* diagnostics. He predicted that molecular technologies will use tissue in different ways, as noted below:

Watch For these Tissue Section-based Molecular Technologies

- Methods that avoid paraffin embedding
- Methods of fixation that preserve labile proteins (e.g., phospho-proteins)
- Biopsy methods
  – Needle vs resection
  – Cryo-needles
- Circulating tumor-based molecular profiling (blood and urine)
- Imaging mass spectroscopy

Medicare Carrier Proposes No Pay for Vitamin D Test

Proposal restricts coverage for Vitamin D tests to four diseases and no allowance for screening

CEO SUMMARY: Medicare contractor NGS wants to end payment to labs and physicians for routine Vitamin D testing. In a proposed local coverage determination (LCD), the Medicare carrier says it would cover Vitamin D testing only for patients with chronic kidney disease, osteomalacia, hypercalcemia, and rickets. All other testing for Vitamin D would be denied. Endocrinologists responded by labeling the NGS proposal as "flawed and incomplete, a factor that would shortchange current medical practice."

EARLIER THIS MONTH, a Medicare carrier published a proposed plan to deny payment for routine Vitamin D testing. If implemented, this carrier would begin denying claims for routine testing for Vitamin D deficiency as early as June 1, 2009.

The proposal generated an immediate response in opposition from the **American Clinical Laboratory Association** (ACLA), based in Washington, DC. ACLA is concerned that this proposal from one Medicare carrier could spread. "We would like to put a stop to this idea before any other Medicare carriers adopt it," said ACLA President Alan Mertz.

Medicare Contractor

National Government Services (NGS), one of the nation's largest Medicare contractors, proposed the policy. The NGS proposal would effectively end payment to labs and physicians for routine testing for Vitamin D deficiency for Medicare patients. In its proposed local coverage determination (LCD), NGS said it would cover Vitamin D testing only for patients with chronic kidney disease, osteomalacia, hypercalcemia, and rickets. Other testing for Vitamin D would be denied.

The draft LCD, dated February 6, was posted on the NGS Web site and asked for comments through February 21. If accepted as proposed, denials for routine Vitamin D testing would begin on June 1. NGS noted in the draft that LCDs are not necessarily a reflection of the current policies or practices, meaning not all Medicare providers would be affected by the LCD that NGS posted. NGS serves 200,000 providers and suppliers, along with 24.5 million Medicare beneficiaries in 25 states and five U.S. territories.

According to Mertz, ACLA is preparing a response to the proposal. In addition, the **American Association of Clinical Endocrinologists** (AACE) wrote to the Medicare carrier criticizing the proposal as being based on 1980s medical research.

When a Medicare carrier adopts a change in reimbursement policy, other Medicare carriers and private payers typically follow suit. Therefore, any proposal to deny payment for routine testing for Vitamin D deficiency is a concern for all labs and physicians nationwide.

"Measurement of Vitamin D levels is indicated for patients with chronic kidney disease, osteomalacia, hypercalcemia, and rickets," stated the draft LCD published by NCG. "Measurement of Vitamin D levels is not indicated for screening. Measurement of any other Vitamin D metabolites (CPT codes 82307 & 82652) is not indicated, and will be denied. An excess of Vitamin D is unusual, but may lead to hypercalcemia. Vitamin D deficiency may lead to a variety of disorders, the most infamous of which is rickets. Treatment of Vitamin D deficiency is relatively straightforward, negating the need for measuring Vitamin D levels in many cases. Evaluating patients' Vitamin D levels is accomplished by measuring the level of 25-hydroxyvitamin D. Measurement of other metabolites is not medically necessary."

Doubling of Test Volume

Over the past 24 to 36 months, the volume of Vitamin D testing nationally has exploded. *(See TDR, July 28, 2009.)* One reason is that patients and physicians are responding to news reports and published scientific papers about the widespread rate of Vitamin D deficiency, as well as new findings about the role Vitamin D plays in an expanding number of diseases and health conditions.

Evidence is that a substantial portion of the American population does not have adequate levels of Vitamin D. For example, about 30% of those tested at **ARUP Laboratories** in Salt Lake City, Utah, have a Vitamin D deficiency, according to A. Wayne Meikle, M.D., medical director of ARUP's Encocrinology and Automated Endocrinology Laboratory.

John J. Cannell, M.D., a psychiatrist who founded **The Vitamin D Council**, a nonprofit organization in Atascadero, California, said, "This rule change flies in the face of an enormous amount of research, some of it published in the last few months. For example, several weeks ago, the *British Journal of Cancer* reported that in men with prostate cancer, those with highest Vitamin D blood levels, were seven times more likely to survive than were men with the lowest levels."

THE DARK REPORT observes that, should this Medicare contractor successfully implement its proposed policy to deny coverage for routine testing for Vitamin D deficiency, it will likely be copied by other Medicare carriers and private health insurers. As that happens, laboratories will be placed in the position of being the gatekeeper for managing physician utilization of Vitamin D testing. The laboratory profession has been down that road before with other types of testing and it is an unsatisfactory development for labs, physicians, and patients. TDR

Contact Alan Mertz at 202-637-9466 or amertz@clinical-labs.org.

Endocrinologists Act To Stop A Bad Idea

IN ITS LETTER to National Government Services (NGS) on the proposal to deny coverage for routine testing for Vitamin D deficiency, the American Association of Clinical Endocrinologists (AACE) blasted the idea as outdated thinking.

"The measurement of Vitamin D is a very important test which research offers evidence supporting expanded applications and a relationship to many disease states with readily identifiable treatment and improved prognosis," wrote Daniel S. Duick, M.D., President of AACE. "This policy, if it goes through with its list of covered diagnosis codes that is flawed and incomplete, would undeniably short-change current medical practice, and patients who need the test will lose.

"Indeed, it appears that the draft LCD is based upon sound medical practice in the 1980s, not the 21st century," continued Duick. "For all of these reasons, we encourage you to further review and revise the draft LCD, so the list of acceptable medical conditions is complete and includes historically accepted conditions, such as osteoporosis."

10 Years Ago

Ten Years Ago: Quest Diagnostics Agrees to Buy SmithKline Labs

Strategic move in 1999 put Quest at the top of the lab services marketplace in the United States

IT WAS 10 YEARS AGO THIS MONTH when a major event changed the competitive landscape for lab testing services. On February 9, 1999, **Quest Diagnostics Incorporated** signed an agreement to purchase **SmithKline Beecham Clinical Laboratories** (SBCL).

It was the largest laboratory acquisition up to that point. In one masterstroke, Quest Diagnostics would become the largest laboratory company in the world and eliminate one of its two main competitors. At the same time, the deal would shrink the number of billion-dollar lab companies in the United States from three to two. *(See TDR, February 22, 1999.)*

Quest Diagnostics agreed to pay $1.27 billion for SBCL, which had annual revenue of $1.05 billion. In an interesting twist to the transaction, **SmithKline Beecham, Ltd.**, owner of SBCL, agreed to receive $1.025 billion in cash at closing, along with 12.6 million shares in Quest Diagnostics. This stock was worth $245 million and gave Smithkline a 29.5% stake in Quest Diagnostics.

Good Deal For SmithKline

During the next five years, the value of those Quest shares skyrocketed. That added tens of millions of dollars to the value of the Quest stock held by SmithKline. Hindsight has validated both the timing of the sale and the wisdom of SmithKline for taking part of the purchase price in the form of stock in Quest Diagnostics.

Quest Diagnostics' then-CEO, Ken Freeman, had eyed SBCL for several years. On more than one occasion, Freeman had publicly observed that, in any industry dominated by three companies, sooner or later one of the three companies disappeared from the marketplace. In a three-company oligopoly, this had often happened in different industries.

In Freeman's view, Quest Diagnostics could guarantee its survival—and at the same time become the dominant market player—if it actively removed one of its two primary competitors from the marketplace. This motivated Freeman to approach SmithKline Beecham several times in the years prior to the acquisition agreement and offer to purchase SBCL.

Interest In Selling Lab Unit

However, it was not until SmithKline Beecham undertook a major corporate restructuring that there was interest in divesting its laboratory testing division. SBCL was one of several business units it either sold or overhauled during 1999.

Time and subsequent events have confirmed Freeman's strategic vision. The SBCL acquisition gave Quest Diagnostics significant scale and infrastructure in several important metropolitan areas around the United States. It also radically altered the managed care contracting status quo among the three blood brothers and took the lowest-priced competitor out of the contracting arena. TDR

CEO SUMMARY: Although the nation's two largest laboratory companies have achieved a dominant managed care position, opportunities remain for regional labs to do more business with managed care plans. Two experts provide an update of managed care pricing trends for laboratory testing services. For independent labs and hospital lab outreach programs seeking to expand access to managed care patients, they also offer several simple, but effective, simple business strategies.

Managed Care Pricing Trends and New Strategies

Local Labs Have Opportunities To Increase MC Patient Access

DESPITE THE DECLINING ECONOMY, local laboratories and hospital lab outreach programs continue to have opportunities to improve the business they do with managed care plans. That's the opinion of experts actively working with labs and pathology groups on contracting issues with managed care plans.

"Since the start of this decade, many local laboratories have accepted the payer contracting status quo in their communities," observed Michael Snyder, President of **Laboratory Management Services**, in Happauge, New York. "However, things are changing. These same labs will be surprised to learn that health insurers are receptive to adding new laboratories to their networks at this time. With focused effort, it is possible for regional labs to gain access to managed care patients and earn acceptable reimbursement."

Snyder was speaking at THE DARK REPORT'S recent audio conference, titled "Managed Care Lab Contracting: How To Negotiate The Best Pricing And Terms For Your Lab." His co-presenter was attorney Jane Pine Wood of **McDonald Hopkins**, the law firm based in Cleveland, Ohio.

Laboratories are always keenly interested in managed care pricing trends and Snyder had plenty of insights to share with audio conference participants on this important subject. In his view, three factors are shaping managed care prices for lab testing services during 2009.

"The first factor, and it is a primary influence, is that the current trend for pricing was established two years ago," stated Snyder. "Prices were basically set in January 2007, when **UnitedHealth's** exclusive national contract with **Laboratory Corporation of America** became effective. Several experts estimate that the contract between UnitedHealth and LabCorp is priced in the range of a 45% to 50% discount relative to what Medicare pays for lab services. I think that estimate is reasonably close to the real figure.

"However, that is just part of the story," he continued. "Regional labs need to understand that, in this exclusive national contract, I believe there are pricing tiers for certain work. Typically, the high volumes of routine testing are priced at the lowest rates. I believe more generous prices are paid for esoteric and other types of complex testing.

"Local labs often overlook the fact that payers do carve out more complex reference and esoteric tests and reimburse for these at a higher rate than routine testing," continued Snyder. "The point is that independent labs should not be misled by the idea that one price fits all. Armed with this insight, they should prepare to negotiate with payers to obtain favorable pricing for higher value assays.

"The second factor related to pricing is this year's increase to the Medicare Part B laboratory test fee schedule," noted Snyder. "This is good news. Some of the increase is due to embedded fee escalators. That, in itself, is an important opportunity for labs during contract negotiations: Always make sure your lab gets those consumer price increase escalators built into its contract with payers. And don't forget, many contracts with private health insurance plans are keyed to the current Medicare fee schedule. Thus, increases to the Medicare lab fee schedule should be mirrored in your lab's contract pricing with private payers.

"Now to the third factor which shapes managed care pricing for laboratory testing during 2009," noted Snyder. "This third trend is the negative side of current managed care contracting trends, and it is familiar to most lab managers.

➤ Preferred Provider Rates

"The third lab pricing factor may be called the 'preferred provider lowest price' stratagem," said Snyder. "Take the UnitedHealth contract with Labcorp as an example. In some ways, UnitedHealth now uses its pricing formula with LabCorp as a sort of *de facto* lab test fee schedule. Several laboratories across the U.S. have reported that UnitedHealth tells labs 'Here is the pricing we offer you. If your lab wants to be

competitive with LabCorp, then these are the rates your lab must accept.'

"Therefore, while the UnitedHealth contract with LabCorp is not truly exclusive—because UnitedHealth continues to be willing to contract with regional labs—it views the contract and pricing terms it has with LabCorp as its standard contract for laboratory services. In that context, it wants local labs to accept these terms to become a contract provider in its lab testing network.

Lowest Cost Lab Provider

"In the same vein, we see growing numbers of health insurance plans attempting to steer laboratory business to the lowest cost lab provider," he explained. "That also means that many health plans continue to push for price declines even during the contract period. In recent months, we have consistently heard this from laboratories involved in contract negotiations with private payers."

"Finally, my third recommended strategy is to stop fighting over health plan requirements," Snyder continued. "If your lab can exceed the plan's requirements, then it can make the case for better reimbursement. "

Having identified several fundamental trends that are shaping lab testing prices during 2009, Snyder then switched gears. He recommended three interesting strategies that independent laboratories and hospital lab outreach programs can use to alter the managed care contract status quo in their communities.

Three Simple Strategies

"Each is a simple strategy," he stated. "One, serve the underserved. Two, increase your lab's competitive reach by joining networks of labs. Three, stop fighting payers over their lab requirements. Instead, meet their requirements, thus allowing your lab to have contracts with these health plans.

"It is a fact that national health insurers don't automatically get full and desired network coverage in every community where they have beneficiaries, even though they have a national agreement with one or both of the two blood brothers," stated Snyder. "Local laboratories need to recognize that considerable numbers of patients are often underserved in their region and leverage that knowledge to their benefit.

"For example, I am frequently asked by health plans to help them find labs to join their network in specific communities," he continued. "This is particularly true in gaining coverage for lab work that originates in nursing homes, behavioral health settings and from home health services. These payers ask me to find laboratories in the under-served regions that can provide the needed types of lab testing services.

"This is an important point," stated Snyder. "Even the large national health plans have an ongoing need for local labs to fill in access and coverage gaps that exist because the large national lab companies are unwilling or unable to adequately fill them.

Adding Regional Labs

"This dynamic is clearly visible at UnitedHealth," added Snyder. "Even now, UnitedHealth is recruiting and adding regional laboratories to its provider network. This creates a significant opportunity for any local lab willing to contract with UnitedHealth.

"The same thing is unfolding at **Aetna**," he stated. "Although Aetna has an exclusive national contract with **Quest Diagnostics Incorporated** as its preferred laboratory, like UnitedHealth, Aetna is making significant use of regional laboratory providers to fill gaps in its network.

Healthcare Lawyer Outlines Managed Care Trends Affecting Anatomic Pathology Labs

IN HER REMARKS DURING THE DARK REPORT'S managed care audio conference, attorney Jane Pine Wood of McDonald Hopkins outlined pricing and contracting trends that affect anatomic pathology (AP) groups.

"One trend that I see is different pricing for hospital-based pathology services versus non-hospitable outreach services," Wood explained. "For those payers which make the distinction between these two lines of business, pricing for the hospital work may be 130% or 150% or higher than Medicare. Yet the same work performed by the same anatomical pathology provider in the outreach non-hospital setting may be paid at only 70% to 80% of Medicare.

"This new pricing situation is a direct consequence of pricing by the large national laboratories," she said. "National labs have signed contracts for AP services at these lower rates. Thus, the lower AP rates become part of their contractual agreement with the payers—and these contracts often include a requirement that the payers not pay other laboratories more for the same services.

"The economic effect of this trend on AP groups is compounded by the fact that many anatomic pathology laboratories have a difficult time gaining provider status," she stated. "The exclusive contracts between the two national lab companies and payers shut out local and regional AP groups. Accordingly, when an AP group can get into a payer's network, it finds that reimbursement for its most important anatomic pathology services can be at 70% or 80% of Medicare fees. That makes it financially problematic for these pathology groups.

"When your AP lab or practice finds itself in this situation, my advice is to look for an opportunity to have a frank discussion about the benefits your practice or laboratory brings to the community," suggested Wood. "Emphasize the responsiveness and the quality of service that your practice delivers, particularly for AP services that the major lab company is not likely to do, such as frozen section work. Some payers will agree to raise compensation in return for these types of AP services.

"Between the trends of lower AP pricing for outreach services and excluding local pathology groups from provider panels, the more disturbing trend is the inability of local and regional AP labs to be part of payer networks," observed Wood. "A growing number of my anatomic pathology clients are finding themselves excluded from payer plans.

Excluding Local AP Labs

"Both of the two national laboratories are actively negotiating contracts which make them the exclusive provider of anatomic pathology services," she added. "When a local AP practice or lab finds itself facing this situation, it's important to remember that there are ways to contract with these payers, despite the fact that an exclusive contract may exist.

"Payers almost always have ways to accommodate individual situations," Wood explained. "First, determine what AP services the payer is contracting for on an exclusive basis. Typically, it's for non-hospital outreach work in anatomical pathology, and not the hospital-based AP work. If so, then your AP practice or lab can determine where there are gaps in the contracted lab's service offerings. This advice is similar to Michael Snyder's strategy of 'serving the underserved.'

"In many of these exclusive contracts, I often find that the national lab—with its exclusive AP contract—may not have the capabilities to do certain services," she said. "For example, frozen sections require the on-site presence of a pathologist, which, in many communities, the national laboratories are not able to provide. So, your pathology practice or lab may be able to use that angle as leverage to get into a full contract for anatomic pathology services. In situations where the payer is unwilling to contract with your lab for every AP service, you may succeed in carving out specific services, such as frozen sections or some molecular esoteric testing."

"This is equally true at other payers, including **Cigna**, **Humana**, and **Wellpoint**," said Snyder. "Not only do each of these national health insurers use both LabCorp and Quest Diagnostics, but these health insurers also maintain contracts with the numerous regional labs needed to maintain proper lab coverage for all their beneficiaries.

"As to pricing, lab directors with regional contracts in these situations tell me that pricing is surprisingly reasonable," he commented. "With the exception of UnitedHealth, these lab directors indicate that the national insurers tend to pay in the range of 60% to 65% of the Medicare Part B lab test fee schedule.

Seeing Value in Networks

"My second managed care contracting strategy for labs is related to the first strategy," explained Snyder. "An independent lab or a hospital lab outreach program should consider joining networks of labs that contract collectively with payers," Snyder added. "Networks increase your lab's competitive access and allow you to expand your service offerings. If your lab wants to gain access to more patients and expand its market share, then networking is an effective option.

"Finally, my third recommended strategy is to stop fighting over health plan requirements," Snyder continued. "If your lab can exceed the plan's requirements, then it can make the case for better reimbursement.

"Any laboratory that resists the payer's requirements is excluded from participation," he stated. "Whereas, by meeting the requirements of health plans, that same laboratory can gain access to patients, become more visible to the health plan, and be positioned to win new business and expand its market share in its service region.

"In my view, fighting over health plan requirements is a strategic misstep," he added. "Some labs refuse to meet a health plan's requirements simply because those requirements can be difficult or costly to meet.

"Labs should set that attitude aside and be ready to have conversations with the different payers in their community," continued Snyder. "It is good business to respond to every invitation to bid on a contract, for example. Your lab may eventually decide not to sign a contact with that payer, but it will at least be in the game and be maintaining its relationships with the payer's staff.

"On the positive side, participating in every invitation to bid on a managed care contract keeps the regional laboratory informed as to the needs of the payer," he noted. "The combination of staying informed as to the payer's needs and having a relationship with key staff members is one way that a local laboratory can position itself to be a solution whenever the payer has needs that can't be met by its existing panel of laboratory providers."

Many of Snyder's views on opportunities for clinical laboratories to expand their managed care contracts have parallels for anatomic pathology laboratories and group practices. In the sidebar on page 13, attorney Jane Pine Wood of McDonald Hopkins offers her insights on current trends in managed care contracting for anatomic pathology services.

Both experts share the opinion that regional laboratories and hospital-based pathology group practices have the potential to expand the number and quality of their managed care contracts. Pathologists and lab administrators should remember the adage that "all healthcare is local." Emphasizing their lab's commitment to the community and its ability to provide a wide menu of lab testing services locally is a powerful argument with payers—who themselves must keep their physicians and beneficiaries happy. TDR

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Need Rigorous Validation For Home Brew Assays

Challenge is for laboratory to verify accuracy, then report results that clinicians easily understand

CEO SUMMARY: National headlines about erroneous Vitamin D results are a reminder to the lab industry of the imprecision and risks associated with home brew testing. According to one laboratory expert, every laboratory-developed test (LDT) must meet two high standards. One, accuracy, reproducibility, and transferability of the test result number. Two, a reference range that is easily-understood by clinicians and consistent with published studies and existing lab test methodologies.

LABORATORY-DEVELOPED TESTS (LDTs), commonly called "home brew" tests, remain a controversial subject across the lab industry. Recent FDA actions and publicity about a major failure at one lab's home brew test program raise the spectre that tighter regulation of LDTs might soon be forthcoming.

Labs regularly create and introduce new home brew tests to clinicians. Thus, both the number of home brew assays and their collective test volume has grown steadily. This is particularly true in recent years because a variety of new technologies created opportunities for labs to develop useful diagnostic assays.

In the case of **Quest Diagnostics Incorporated**, its decision to create a home brew assay using liquid chromatography/tandem mass spectrometry (LC—MS/MS) for use as a high-volume clinical test is probably now the best-known example of a laboratory-developed test. That's because, after it admitted that it had reported erroneous results on tens of thousands of patients over an 18-month period, that became a national news story. *(See TDR, December 22, 2008.)*

To provide laboratory directors and pathologists with insights about the issues associated with home brew assays, THE DARK REPORT contacted James Nichols, Ph.D., who is director of the high complexity laboratory at **Baystate Medical Center** in Springfield, Massachusetts. An expert in lab test errors, Nichols is a frequent speaker on this and other topics at laboratory medicine conferences both in the United States and abroad. He has more than 15 years of experience as the director of a high complexity lab.

Setting Up The Test

"When I hear news about erroneous test results, such as with Quest Diagnostics' internally-developed Vitamin D test, it focuses my attention on how well the test was set up," Nichols commented. "Only Quest knows precisely what happened with its Vitamin D assay. From public comments, it believed it had a good calibrator. It set the assay to that calibrator, then later determined that the calibrator was different than the immunoassay.

"One interesting question is how Quest Diagnostics validated its reference

ranges and determined its reference ranges based on the results of the validation," he added. "Any laboratory-developed test should be validated so that the numbers are interpretable to the physicians. That doesn't always happen because of cost pressures confronting laboratories today.

Validate Reference Ranges

"For any home brew test, the laboratory must succeed in two dimensions," said Nichols. "One, has the test been developed so that it produces a reliable, reproducible result that is clinically useful and transferable? Two, did the laboratory establish and validate reference ranges that can be understood by the physician?"

Nichols participates in several national laboratory committees and work groups. He is actively involved in helping professional bodies establish appropriate policies and guidelines in many areas of laboratory testing and operation, including laboratory-developed tests.

"It seems that laboratories are striving to bring up LDTs quicker than they did in the past and at less cost," Nichols explained. "When labs attempt to keep costs down, they tend to cut corners. That can affect the reliability of the test results for that home brew assay.

Trust In Laboratory Results

"Of course, there are minimum standards that must be met when validating each test and allowing it to be interpretable," continued Nichols. "For most laboratorians, the issues behind validating new tests comes down to trust in the laboratory results. You have to ask yourself, 'If this were my assay how much validation of the assay would I want to do?' As it is, validation is left up to each laboratory.

"Laws in the various states tend to be very general in what a laboratory is required to do when it validates an assay," Nichols noted. "Also, labs use a variety of methods when validating. In the case of Vitamin D assays, that might explain why different laboratories report Vitamin D results using different reference ranges. This creates a problem for physicians if they do not understand how the various numbers reported by different labs relate to their patients.

"An additional complication with home brew testing is that, for a specific assay, there may be several different methodologies to perform that particular test. That is true of Vitamin 25(OH) D," noted Nichols. "There are immunoassays for Vitamin D and each has its own reference range. Next, there are labs using mass spec (a high complexity assay) for home brew Vitamin 25(OH) D testing. The labs using mass spec are calibrating their standards in different ways and that means the reference ranges need to be revalidated in each of those settings.

High-Complexity Tests

"Typically what happens with high-complexity lab tests is that the lab will adopt a reference from the literature," he said. "If scientific or peer literature exists that identifies the target range, then a laboratory can adopt that range because that's what physicians are used to seeing. Is this good or is it bad for a lab to adopt such a published range? In certain situations, there is no clear-cut answer to guide the laboratory.

"Let me explain," he continued. "Typically when our lab sends out a test to a reference lab that we don't know, I ask in-depth questions about how the lab validated the reference range. I want to know if the ranges were pulled out of the literature, particularly when tests for therapeutic drugs are involved.

"The laboratory performing that test may not have assessed data on 100 normal patients who are stable and free of complicating diseases and interferences," explained Nichols. "If the lab doesn't do so, how does it know that it has determined the proper range for that test? At a

minimum, the lab should at least match the theoretical literature references. Ideally the lab should do much more to properly validate the test.

Can Doctor Interpret Results?

"Take Vitamin 25(OH)D as an example. Some labs will calibrate against the immunoassay and some labs will calibrate against the reference standards available from NIST," he said. "Both approaches are right. But, this raises an important question for the laboratory performing the test: Do referring physicians know how to interpret the Vitamin D result reported by my lab? Or, has the laboratory reported results in such a manner that the physician may fail to accurately understand what the results mean and how to proceed in treating the patient? This is an important question to answer when a laboratory validates a reference range, particularly when bringing up a home brew assay developed in house.

"When a laboratory develops a test and it is the only lab performing that test, it must ask itself several hard—and essential—questions," advised Nichols. "How does the lab know the test is accurate? How does the lab know that the number it produces and reports today will be the same number it produces and reports 10 years from now? Against what is the lab standardizing? How does the lab set the bar for this particular test?

"In the case of Vitamin D, these questions become particularly relevant because there are many labs offering Vitamin D tests," stated Nichols. "There are manufactured test kits that have been cleared by the FDA and there are home brew tests. When a lab introduces a Vitamin D home brew test, it must ask itself, 'What are clinicians used to seeing and do the results of my Vitamin D test merge with what physicians expect to see out in the field?'

"When we develop a home brew test here in the lab at the Baystate Medical Center, we operate to stringent standards," he continued. "For example, I would want to make sure I have 100 males and 100 females of different age groups—particularly if age or gender is a factor that affects the test result.

"Of prime importance, I want a large enough group of individuals so that I can actually pinpoint the appropriate range that physicians would expect when interpreting the result," stated Nichols. "In other words, I want to know: Is the result I produce when calibrating my home brew assay a normal result or is it disease?

"When developing the home brew assay, it takes time and money to accomplish this evaluation," he added. "It is not something that a laboratory can do overnight. And it's often difficult to define what is 'normal'. This is particularly true of Vitamin 25(OH) D, where the science is evolving and there is ongoing debate in the clinical community about what levels of Vitamin D are necessary for optimal health."

Share Samples For LDTs

In establishing a laboratory-developed test (LDT), there are other requirements. "If a lab wants to set up and run a test that is already being performed and reported by another laboratory, it must perform proficiency testing or, when proficiency testing is not available, share samples with that other lab to validate its results," Nichols added. "That's part of the **College of American Pathologist** (CAP) standards and part of the CLIA regulations. The purpose of this requirement is, by sharing samples, the laboratory has confidence in the transferability of test results.

"Keep in mind, however, that Vitamin D can be problematic when a lab attempts to find the proper reference range," he said. "If the lab's patients live in Florida and get out in the sun a lot, it may have a different normal population than if the lab collected samples from people in Maine in the middle of winter who don't get exposed to much sunlight.

"Additionally, the lab needs to know if the people it sampled are getting nutritional or vitamin supplementation," said Nichols. "Each of these factors make it challenging for a laboratory to validate its home brew Vitamin D assay. In my experience, this is not an overnight process because it is difficult to establish appropriate ranges for Vitamin D.

"As a general principle, the issue of validation is particularly troublesome with home brew tests," observed Nichols. "News that Quest Diagnostics experienced an 18-month period of producing erroneous Vitamin D results from its home brew assay raises valid concerns about how laboratories are validating their home brew tests.

"Obviously CLIA sets the minimum guidelines about what needs to be validated before a laboratory begins to report results produced by a home brew test," stated Nichols. "For a high-complexity test, CLIA sets much more stringent standards than for moderate-complexity tests. In particularly, CLIA mandates a much higher minimum set of standards that a lab must meet when establishing reference range interferences and analytical and potentially clinical sensitivities.

Validating The Assay

"At Baystate Medical Center, when our lab refers esoteric testing to other laboratories, we typically ask questions to make sure the lab has gone through the typical validations that are necessary to meet those standards," he commented. "When a lab adds a new home brew test, it is not simply a research test with which it is tinkering. It will be used by clinicians. Thus, only if a laboratory properly validates its new home brew test will it have confidence that its test is ready for prime time."

Nichols sees the expanding range of technologies that can be used to develop home brew assays as complicating efforts to standardize and regulate laboratory-developed tests. "There is such a wide variety in the types of tests and the types of rigor applied to validating test results that there may be no way to close the gap with more stringent regulations," he observed.

"If regulation cannot solve the problem, it means that laboratory directors become the front line in meeting the challenge so that their lab produces results that are reliable, reproducible and transferable, as well as similar to the results reported by other labs," recommended Nichols.

Issues With Vitamin D Test

"It has always been the role of the laboratorian to teach physicians in their hospital and in their community about the differences in testing and to explain why, when a lab test number has been reported, it can't be assumed that the clinician can treat to that number. Laboratorians help physicians understand how to use that test result in conjunction with a clinical picture of that patient. In other words, no test result should be used in isolation. And, as noted earlier, Vitamin D is particularly difficult and it's a high profile type of test.

"When an error in lab testing occurs, it is always easier in hindsight to criticize what that lab has done," he said. "The important lesson from recent events comes down to this: The laboratory profession already has regulations, meaning the CLIA standards, which set a minimum level for what needs to be validated. But clearly, when a laboratory meets those standards, there is still the potential for error."

Many Pitfalls With LDTs

As Nichols points out, there are many pitfalls associated with laboratory-developed tests. Furthermore, the complexity of new diagnostic technologies is likely to further challenge the effectiveness of existing regulations, requirements, and guidelines that a laboratory must follow when developing and introducing a home brew assay. TDR

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INTELLIGENCE

LATE & LATENT

Items too late to print, too early to report

Here's an interesting development on the road to genetic medicine. In England last month, the press heralded the birth of what it has dubbed the "cancer-free" baby. It turns out the parents had the embryo screened for the BRCA-1 gene before implantation—and this was the first example known in Great Britain of an infant screened as an embryo for a gene that was linked to a probability of disease, as opposed to a certainty of disease. The news triggered a debate about the ethics of genetic testing.

MORE ON: Genetics

In Great Britain's health system, the **Human Fertilisation and Embryology Authority** sets the parameters for genetic testing. Since 1990, it has approved testing for more than 60 conditions. During 2008, the Authority approved testing for the BRCA-1 gene. According to a news report on **CNN**, embryo screening for BRCA-1 has been conducted in the United States for several years already. At the **Genesis Genetics Institute** in Detroit, Michigan, Medical Director, Mark Hughes, M.D., reported that he conducts about two tests per month for either BRCA-1 or BRCA-2.

FLU ANTIBODIES PROMISE UNIVERSAL PROTECTION

The journal *Nature Structural & Molecular Biology* yesterday published a story about the how researchers have engineered antibodies that can protect against many strains of influenza, including the 1918 Spanish flu and the H5N1 Bird flu. Researchers from **Harvard Medical School**, the **Centers for Disease Control and Prevention**, and the **Burnham Institute for Medical Research** indicate that these engineered antibodies can be injected after infection and provide protection. These researchers noted, however, that it may take another five years before an effective, safe flu vaccine can be developed. Human trials are not likely to start for another two years.

ADD TO: Antibodies

For pathologists and lab managers, the creation of engineered antibodies that are effective against many strains of influenza demonstrates how new genetic and molecular knowledge is unlocking solutions to many different diseases. In fact, vaccines are a hot technology right now. Many companies are actively developing new vaccines and conducting pre-market clinical trials to validate the safety and effectiveness of their vaccines.

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That's all the insider intelligence for this report. Look for the next briefing on Monday, March 16, 2009.

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