

From the Desk of R. Lewis Dark...

THE **RED** DARK REPORT

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

R. Lewis Dark:

When the Laboratory Marketplace Speaks.....	Page 1
Labs Moving to Internet For Results Reporting.....	Page 2
New Products for Lab Test Results Reporting via Web.....	Page 5
Web-based Lab Test Ordering Is a "Tough Nut to Crack".....	Page 10
Nurse Shortage Parallels Shortage of Med Techs.....	Page 14
<i>Lab Briefs:</i> DIANON Systems, IMPATH, Specialty Labs, Dynacare, Quest, LabCorp.....	Page 16
Intelligence: Late-Breaking Lab News.....	Page 18

Commentary & Opinion by...

R. Lewis Dark

Founder & Publisher



When the Laboratory Marketplace Speaks

IT WAS JUST 15 MONTHS AGO WHEN THE DARK REPORT made this bold prediction: “By December 31, 2001, every physicians’ office in the United States which generates a high volume of laboratory testing will be using a Web-based system for ordering lab tests, receiving results, and accessing a patient’s complete lab test history.”

When this prediction was issued in the November 1, 1999 issue, there was a surprising amount of agreement among informatics vendors and lab administrators. The lab industry recognized that e-health technology was moving rapidly into the clinical marketplace. A sizable cadre of laboratories began active discussions with vendors to acquire and implement systems to enable Web-accessed lab test ordering and results reporting for their physicians’ office clients. They were inspired by—or fearful because—some of the nation’s largest laboratories had announced contracts to implement this service.

With all this interest, the surprising development in 2000 was that Web-accessed lab test ordering took a back seat to Web-accessed test results reporting. To tell this story, we’ve prepared a detailed intelligence briefing. As you will read in the following pages, the economics behind replacing teleprinters and dedicated phone lines in docs’ offices with a Web browser remain compelling. But the business strategies to accomplish this task have shifted in favor of beginning with lab test results reporting.

Meanwhile, other players in the healthcare world have been busy connecting hospitals, laboratories, physicians, and payers with Internet-enabled systems that communicate clinical information, including lab test orders and results. At this year’s *Executive War College* in May, there will be presentations on the **Winona Project** in Minnesota and **Health Bridge** in Cincinnati. These are community-wide programs that interpose a third party between the laboratory and its referring physician. This development is both a threat and opportunity for labs. It is also undeniable evidence that physicians are going to be wired into the Internet sooner rather than later.

Meanwhile, lab test results ordering/reporting via the Internet is in the first stages of exponential expansion. The limited number of labs currently offering either Web-accessed lab test ordering or results reporting will grow rapidly with each passing month. The clinical benefits and economic advantages of Internet-based lab information services makes this inevitable.

Labs Moving to Internet For Results Reporting

Implementation issues are much simpler with Web-accessed lab test results reporting

CEO SUMMARY: *When faced with the choice of implementing Web-accessed lab test ordering or Web-accessed results reporting, most early adopter laboratories started with results reporting. It requires much less money and effort to accomplish. Vendors recognized this fact and are introducing a variety of products that enable labs to give their physician clients Web access to lab test results.*

IT SEEMS THE MARKETPLACE HAS spoken. During the year 2000, most early adopter laboratories decided to implement Web-accessed laboratory results reporting, leaving Web-accessed lab test ordering as a project for the future.

This is certainly not what was predicted by most experts, including THE DARK REPORT. During the fall of 1999, several credible vendors were actively signing contracts with some of the nation's most influential laboratories to implement Web-accessed lab test ordering and results reporting.

It's significant that the first generation of labs to embrace Web-accessed information services decided to begin with test results reporting. Assuming this trend continues, it is strong evi-

dence that use of the Web for lab test ordering will lag behind test results reporting. In the following story on pages 10-13, THE DARK REPORT analyzes the market forces behind this unexpected outcome.

Cost, relative simplicity, and working software solutions are the three primary reasons why laboratories selected test results reporting as the first Web-based service to offer referring physicians. Both labs and vendors tell THE DARK REPORT that it is a reasonably simple task to sit a software package on top of the existing laboratory data repository.

This software package then delivers lab test results via the Internet and accepts queries from physicians who use a Web browser to access their

THIS PRIVATE PUBLICATION contains restricted and confidential information subject to the TERMS OF USAGE on envelope seal, breakage of which signifies the reader's acceptance thereof.

THE DARK REPORT Intelligence Briefings for Laboratory CEOs, COOs, CFOs, and Pathologists are sent 17 times per year by The Dark Group, Inc., 1731 Woodland Terrace Center, Lake Oswego, Oregon 97034, Voice 1.800.560.6363, Fax 503.699.0969. (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 \$10.80 per week in the US, \$11.40 per week in Canada, \$12.45 per week elsewhere (billed semi-annually).

NO PART of this Intelligence Document may be printed without written permission. Intelligence and information contained in this Report are carefully gathered from sources we believe to be reliable, but we cannot guarantee the accuracy of all information.

© The Dark Group, Inc. 2001.

All Rights Reserved.

patients' lab test data. Issues of security, privacy, and access can be handled by existing technology solutions.

Some early adopter labs recognized that Web-accessed lab services could provide competitive advantage at low cost. **Clinical Laboratories, Inc. (CLI)** of Throop, Pennsylvania created its own software solution for Web-accessed test results reporting. By its own estimate, CLI took only \$70,000 and about 12 months to convert off-the-shelf software into a robust system for reporting lab test results via the Internet. (*See TDR, July 10, 2000.*)

Cost-Effective To Implement

It was a similar experience at **UMASS Health System Laboratory, Inc.** in Worcester, Massachusetts and **Centrex Clinical Laboratories, Inc.** of New Hartford New York (using products from **Metricom, Inc.** and **iMcKesson.com**, respectively). Both labs found it cost-effective to implement Web-accessed tests results reporting. Implementation was straightforward and free of the complications usually associated with major LIS conversions.

From the experience of these and other labs actively offering Web-accessed tests results reporting to physicians, three basic success secrets can be identified.

SUCCESS SECRET ONE: Introduce this new service as an addition to the existing reporting arrangement in a particular physicians' office. "We leave the PC or teleprinter right where it is," said Richard Faherty, Chief Technology Officer at **Bio-Reference Laboratories, Inc.** in Elmwood Park, New Jersey. "After all, the doctor is concerned that anything new and unfamiliar might interrupt his office's current work routine.

"When we demonstrate how the physician, and his authorized staff

members, can use a Web browser to get lab test reports in real time, at any time, and query for past results, we also emphasize that this is extra, it costs him nothing, and everything else continues 'as is,'" explained Faherty.

Some early adopter labs recognized that Web-accessed lab services could provide competitive advantage at low cost.

"When introduced this way, there is generally a high acceptance rate by physicians," he added. "We then let the physician and his office staff grow accustomed to using the Web browser to get lab test reports. Once this has become routine, they generally ask us to remove the PC or teleprinter because it is taking up valuable space in the office."

SUCCESS SECRET TWO: Pick physicians who are already Internet-savvy as the first to get this new Web service. These physicians are "centers of influence" in use of the Internet to aid their medical practice. Their enthusiasm about Web-accessed results reporting helps to convert their colleagues.

"This was a no-brainer for us," said Kuo Cheng, Chief Operating Officer of CLI. "When the time came to introduce this to our physician-clients, we went directly to the doctors who were already Internet-savvy.

"They needed little convincing to accept this service," recalled Cheng. "Moreover, they quickly learned that they didn't have to carry reams of paper home at night and could access their patient's test results from any computer that had Internet access.

"The pay-off for us was that these physicians were a walking testimonial for the benefits of using the Web for

accessing lab test results,” he noted. “Before long, their colleagues were calling the lab to ask when we could come and set them up for this same feature!”

SUCCESS SECRET THREE: Go beyond simple reporting of lab test results. Offer enhanced features for cumulative reporting, utilization, and the like. Most physicians are quick to recognize the benefits of doing a speedy log-on to look at their patients’ cumulative test data in ways not available before the Web.

“For those of us who believe in the power of lab test data to positively influence healthcare outcomes, this is a double-benefit,” stated Faherty. “Doctors love the added value of this feature. They also become more loyal to the laboratory which provides them with this added value.”

These three laboratories have learned that there is a segment of the physician community which is not only ready for lab services delivered over the Web, but eager to embrace it. This is particularly true in cities where Internet access is available and a higher portion of the population is regularly using the Internet.

Web-Enabled Systems

Web-enabled systems for reporting test results between laboratory and physicians’ office have only been available for a short time. At the close of 2000, a limited number of independent labs and hospital labs provided such services to their physician-clients.

However, this situation is changing rapidly, for an interesting reason. Growing numbers of integrated health systems (IHN) are beginning to introduce Web-based clinical reporting systems across their enterprise. Clinical laboratory data plays an essential role in these arrangements. IHNs are thus leading their labs in this direction.

As IHNs incorporate such capabilities into their enterprise-wide intranets and the Internet, it means laboratories affiliated with the IHN gain the capability of reporting lab test results via intranet/Internet. Because these projects are initiated by the IHN’s senior administration, it eliminates most of the organization politics which often delay capital requests proposed by lab administrators.

Commercial Lab Segment

In the commercial laboratory segment, the two blood brothers are working to implement Web-accessed lab test reporting capabilities. **Quest Diagnostics Incorporated** has business relationships with **Caresoft, Inc.** and **MedPlus, Inc.** which are pointed toward making lab test data available to physicians using Internet access. **Laboratory Corporation of America** is working on similar initiatives, but has made few public comments on the details.

Within the hospital lab segment, there are a number of lab organizations which, with the blessing of their parent hospital, have initiated programs to acquire and implement systems to enable test results reporting between their labs and their physician-clients.

Taken collectively, there is considerable activity now taking place in IHNs and laboratories around the country. Web-accessed lab test results reporting between lab and physicians’ office will be more widespread by year’s end.

Survey of Vendors

On the pages which follow, THE DARK REPORT provides a survey of the current crop of leaders among companies offering information solutions to labs involving Web-accessed lab test ordering and results reporting.

TDR

Contact Kuo Cheng at 570-340-0248 and Richard Faherty at 201-791-2600.

THE DARK REPORT's National Survey...

New Products for Lab Test

Editor's Introduction: Although the movement to shift lab test results reporting to the Web is still in its earliest stages, a growing number of laboratories are actively preparing to offer this service to their physician-clients.

In response to the demand for solutions to permit lab test results reporting via the Internet, new vendors have joined the existing group of LIS companies. To help sort vaporware from reality, THE DARK REPORT called laboratories around the country and developed the following vendor/lab client status list.

Companies included on the list, to the best of our knowledge, have a product ready to sell and install which supports Web-accessed test results reporting between the laboratory and the physicians' office.

Further, these companies have at least one clinical laboratory which is actively using the product. It is important to distinguish whether a laboratory using a specific company's product was a development site or a paying customer. A laboratory which paid to acquire and implement the service makes a much better reference than one which acted as a development site.

It should also be noted that this list reveals how few laboratories have actually implemented a solution that allows physicians' offices to use the Web to access laboratory test results. The list is by no means complete, but it is representative of the major lab users for each company's products.

Acquiring this information was a time-consuming chore. Many vendors, particularly the large, traditional HIS/LIS companies, do not respond rapidly (nor with honest, accurate information) to inquiries about the actual status of these products and which labs are paying customers with live installations. As THE DARK REPORT gets additional (and accurate) information from such companies, it will update this list.

The difficulty of getting objective and accurate information is a major reason why this year's *Executive War College* will again offer a special one-day program on May 10, 2001 devoted exclusively to "Web-based Lab Test Ordering and Results Reporting Information Solutions." (See details on back cover.) Nine leading companies will share the podium and a vendors' fair will provide attendees with access to additional companies offering these products.

ATLAS DEVELOPMENT CORPORATION

Woodland Hills, CA
www.atlasdev.com

Atlas Development Corporation has a product called "LabWorks" to support lab test ordering and results reporting. LabWorks is "configurable to handle any combination of workstations running local databases or operating as

thin clients, with Windows or browser-based user interfaces."

Currently two large companies use LabWorks. One is **Dynacare, Inc.** The other is a national healthcare corporation which has yet to issue a public announcement about its contract relationship with Atlas Development Corporation.

Dynacare's labs in Seattle and Mississippi are the first installations of





Results Reporting via Web

WebLabWorks, which uses a browser. Mississippi went live with Web-accessed lab test results reporting in November 2000. Web-accessed lab test ordering will be implemented by second quarter 2001.

CAREEVOLVE.COM

Elmwood Park, NJ
www.careevolve.com

Unlike other vendors listed here, Careevolve.com has a product for lab test results reporting which generates income for its laboratory customers. Careevolve.com is a division of **Bio-Reference Laboratories, Inc.**, also located in Elmwood Park, New Jersey.



In simplest terms, Careevolve.com is a physician's Web portal. The physician pays a monthly fee to access this portal, which provides a variety of services useful and relevant to physicians. Among the services is Web-accessed lab test results reporting, now operational, and lab test ordering, expected to be operational in mid-2001.

Careevolve.com has been operational since August 2000 and approximately 500 physicians in the New York metropolitan area subscribe to this service. Bio-Reference Laboratories is marketing Careevolve to both independent labs and hospital labs that want to link to their physician clients using the Web. It believes its revenue sharing model—which generates monthly income to the participating labs—sets it apart from other Web-accessed test ordering and results reporting products.

CERNER CORPORATION

Kansas City, MO
www.cerner.com

At **Cerner Corporation**, “ePathLink” is the system for Web-accessed laboratory test ordering and results reporting between the laboratory and physicians’ office. It’s compatible with Cerner’s existing LIS products. ePathLink provides “order entry and results inquiry with secured, anytime, any-place access to the LIS. It also includes medical necessity checking.”



ePathLink has been converted at **Continuum Health Partners**, New York, New York (an integrated health system which includes **Beth Israel Hospital**). It is also used for Web-accessed lab test results reporting at **North Shore Health System Laboratories** in Lake Success, New York.

DYNAMIC HEALTHCARE TECHNOLOGIES, INC.

Lake Mary, FL
www.dht.com



Pathology results reporting can be accomplished through the Internet by using the “CoMed for Results” system of

Dynamic Healthcare Technologies (DHT). Dynamic offers products in several clinical areas, including the “RadPlus” system for radiology, “ePremier” system for clinical labora-

tory and the “CoPathPlus” system for anatomic pathology.

Several pathology groups are using the “CoMed for Results” system for Web-accessed pathology results reporting. **Knoxville Pathology Group** in Knoxville, Tennessee maintains its own host for this ASP product. **ProPath Laboratories** in Dallas, Texas uses Dynamic’s Florida center to host its results.

iMcKESSON.COM

San Francisco, CA
www.imckesson.com

iMcKesson’s laboratory product is called “PracticePointLab.” It was developed by **Abaton.com** before **McKesson/HBOC** purchased the company in the fall of 1999.

“PracticePointLab” is a browser-based laboratory order entry and

automated results management system. It lets physicians electronically order tests, track those tests, and receive test results. The system also has embedded display capabilities that allow cumulative reporting and charting of test results.

For several years, **Allina Health System** in Minneapolis has used “PracticePointLab.” **Centrex Clinical Laboratories** of New Hartford, New York uses “PracticePointLab” to link its hospital labs with the core lab. Centrex also uses it in its outreach sales program, installing the system in the offices of physician-clients so they can use a Web browser to order lab tests and access the results. In recent months, the laboratory at **Weill Cornell Medical Center of New York Presbyterian Hospital** began installing the iMcKesson product in physicians’ offices to allow Web-accessed lab test ordering and results reporting.

ISYS/BIOVATION, INC.

Orlando, FL
www.isysbiouv.com

Isys/Biovation, Inc. designed its “Messenger” product as a comprehensive open laboratory information system. Built upon the newest information technology, it’s a thin client, ASP system that’s adaptable to most clinical laboratory environments.

“Messenger” is capable of linking labs with physicians through LANs, intranets, and the Internet. In recent months, several laboratory clients of “Messenger,” using it within their health system’s LAN, have begun to add physicians’ office users outside the LAN who access test results over the Internet using the system’s browser.



LABDAT.COM

Burbank, CA
www.labdat.com

Another California-based entrant in lab test ordering and results reporting is LabDat.com. It includes a feature which allows HIPAA-compliant reporting to patients and has a set-up wizard that allows each physicians’ office to customize the way it uses LabDat.com. The patient-reporting functions are designed to save physician time when interacting with the patient.

The development site for LabDat.com is **Healthline Clinical Laboratories, Inc.**, also in Burbank. The system has also been deployed at **Millennium Clinical Laboratories** in Los Angeles, California.



LABPORTAL.COM

Chantilly, VA

www.labportal.com

Another new player in the lab informatics space is LabPortal.com, based in Chantilly, Virginia. The company describes its system as “a private and secure ‘web wrapper’ to the lab’s existing laboratory information system (LIS), linking laboratories with their physician and other clinical clients via the Internet—giving them online access to test ordering, reporting, and medical necessity screening. It includes customized



features to help the lab better its customer service and improve revenues.”

LabPortal.com was funded by **Golder, Thoma, Cressy, and Rauner**, the private equity firm which also provided capital to Dynacare, **American Medical Laboratories**, and **Park City Solutions** (which purchased **Chi Laboratory Systems, Inc.** in late 1999).

LabPortal.com is close to finishing its alpha and beta site development work (done at American Medical Laboratories in Chantilly, Virginia and **Geisinger Health System Laboratories** in Danville, Pennsylvania). It expects its first true laboratory customers to be up and running in March 2000.

LABTEST.COM

Midland Park, NJ

www.labtest.com

With headquarters in Midland Park, New Jersey, **Lab-test.com** offers a product “that allows labs to deliver test results



in real-time via the World Wide Web.” The Labtest.com system is up and operating at several laboratory companies.

In January 2000, **Diagnostic Laboratory Services, Inc. (DLS)** of Honolulu, Hawaii began using Labtest.com’s system for Web-accessed results reporting. DLS maintains the remote host within its central laboratory. The Labtest.com system is also in use at **PathLabs, Inc.** in Portsmouth, New Hampshire. It became operational late in 2000.

METRICOM, INC.

Weymouth, MA

www.metri.com

For laboratories and hospitals with internal technical staff, **Metricom, Inc.** offers to license the source code for its “LRSweb” system and will help the lab or hospital customize and interface this code with its existing HIS and LIS installations.

The LRSweb system implements a complete ordering, result reporting, scheduling, and medical policy checking solution and uses secure connections over the Internet. The secure Internet capabilities of LRSweb are also suitable for bidirectional CPU-to-CPU links, as well as supporting links with specialty testing sites.



The LRSweb system has been in operation at the **UMass Health System Laboratory**, in Worcester, Massachusetts for more than three years. It uses the Web to process nearly 10,000 requisitions per month from affiliated hospitals, referring laboratories, and medical practices.

PROXYMED, INC.

Fort Lauderdale, FL

www.proxymed.com

ProxyMed, Inc. has developed a comprehensive system for clinical reporting. To strengthen its presence in the lab marketplace, in 1998 it acquired **Key Communications Service, Inc.** (with an existing base of customers using Key's teleprinters for lab results reporting).

ProxyMed wants to link laboratories, hospitals, clinics, physicians, pharmacies, and other healthcare providers for all aspects of clinical ordering and reporting through an Internet network maintained by ProxyMed.

Its solution for laboratory test results reporting can be operated as a stand-alone system, as can its specialized system for pharmacy ordering and results. According to ProxyMed, **Wuesthoff Reference Laboratories** in Florida and **Boston BioMedica** are using its system for lab test results reporting with physician clients.

SOFT COMPUTER CONSULTING

Palm Harbor, FL

www.softcomputer.com

Soft Computer Consulting, Inc. (SCC) is updating the capabilities of its "SoftLab II" system. This product has been capable of Web-accessed test ordering and results reporting, but the new version will incorporate the most recent software technology designed to use the Internet to maximum advantage.

Unity Health System and its **ACM Laboratory** division in Rochester, New York currently use SoftLab II to allow its physicians' office clients access to lab

test results via the Web. Unity will move to the enhanced, thin-client version when it becomes available in early spring. **Mt. Clemens Hospital** in Mt. Clemens, Michigan is also expected to implement SCC's SoftLab II system this spring.

SUNQUEST INFORMATION SYSTEMS

Tucson, AZ

www.sunquest.com

Sunquest Information Systems has built its "FlexiLab" LIS product suite around functional software modules. This modular approach gives it the flexibility to add other functions to the basic LIS package.

For users on an intranet, FlexiLab has a module called "Remote Web Access." This allows a viewer to access lab test results using a browser and PC connected to a corporate intranet.

Comments:

*Two companies were not included in this list, but are active in the laboratory marketplace. **MedPlus, Inc.** and **Axolotl, Inc.** have systems designed to accommodate the entire spectrum of clinical data. Their products are in operation at several locations and are transmitting laboratory test results to physicians.*

*For reasons explained elsewhere in this issue, **WebMD, Inc.** and **Advanced Health Technologies, Inc.** (Dr. Chart), were not mentioned. During 2000, laboratories had unfavorable comments about certain aspects of their business relationships with both companies.*

*One pioneering company in Web-accessed lab test results reporting is **Integrated Informatics, Inc.** of Atlanta, Georgia. It has several installations operating in the field, and specifically requested that it no description of its products be included in this vendor list. **TDR***



Web-based Test Ordering Is A “Tough Nut To Crack”

Using the Web for lab test ordering proves to be difficult and complex

CEO SUMMARY: *Shifting office-based physicians to Web-accessed lab test ordering proved to be a daunting task for WebMD and its early competitors. Probably the most significant discovery is that modest capabilities of existing software technology and the lack of Internet broadband connections into doctors’ offices combined to make this proposition a tough sell during the past 18 months.*

WHEN IT COMES TO THE TOPIC of Web-accessed laboratory test ordering, events have unfolded slowly in the marketplace for clinical laboratory services.

That’s certainly not what most experts, including THE DARK REPORT, expected and predicted. During 2000, many contracts to implement Web-accessed lab test ordering announced during the last half of 1999 failed to become reality.

For instance, at the end of 1999, it was universally recognized that **WebMD, Inc.** (then called **Healtheon/WebMD, Inc.**), had the financial clout and market influence to become a major player in the American health-care system.

Big Lab Contracts

In the clinical laboratory segment, WebMD had publicly announced contracts involving its “Dx” product for Web-accessed lab test ordering and results reporting with **Laboratory Corporation of America**, **DIANON Systems, Inc.**, and **UroCor, Inc.**

WebMD was also managing the communications network for **Smith-Kline Beecham Clinical Laboratories**, which had been acquired just months before by **Quest Diagnostics Incorporated**. Combined, these contracts gave WebMD access to more than half of all the commercial lab testing business that existed in the United States!

How quickly the high and mighty fall. Just 14 months later, WebMD is struggling to maintain financial solvency. Where WebMD seemed once poised to capture a huge share of the business of transacting orders between physicians’ offices and laboratories, it now has a shattered reputation among many clinical laboratories.

In fact, on January 31, 2001, WebMD laid off the last sales and marketing person responsible for Dx. WebMD has effectively sidetracked Dx to concentrate on integrating its acquisitions of **Medical Manager**, **Care-Incyte**, **Envoy**, and other healthcare companies.

Lab Industry's Innovators Slowed by Vendor Problems

FINANCIAL TURMOIL at both WebMD, Inc. and Advanced Health Technologies, Inc. directly caused a delay in the introduction of Web-accessed lab test ordering and results reporting for at least one unrecognized reason. In late 1999 and into early 2000, many of the nation's most progressive lab managers began meeting with the sales staffs from these two companies. These labs were motivated to introduce lab test ordering via the Internet and were ready to implement a product which met their needs.

However, neither WebMD nor AHT were ready to deliver product, but the sales staffs of these companies were reluctant to be candid with prospective buyers about actual implementation dates. Call it the "vaporware factor."

For that reason, many labs motivated and ready to move forward with Web-accessed lab test ordering ended up wasting a year in fruitless sales negotiations. From one perspective, many of the laboratory industry's early adopters were "sandbagged" by a couple of once-credible vendors.

It turned out to be a similar story at **Advanced Health Technologies, Inc.** (AHT), owner of the Dr. Chart product used by many laboratories. In the fall of 1999, AHT had both credibility and contracts with a surprising number of America's most respected integrated health systems (IHN). Yet, like WebMD, financial problems prevented AHT from capitalizing on its early lead. The company entered bankruptcy in the fall of 2000 and has yet to completely resolve its financial problems.

But the slower pace of introduction can not be attributed solely to problems at WebMD, AHT, and other vendors.

After all, Web-accessed lab test ordering offers compelling economics to clinical labs. This approach to linking physicians' offices and labs has the potential to reduce existing information system costs by as much as 90%!

Several Key Reasons

There are four key reasons why Web-accessed lab test ordering has lagged behind expectations. They have to do with: 1) the business priorities of the larger commercial labs; 2) the actual performance of the current generation of lab test ordering software; 3) the existing capabilities of most physicians' offices to use Internet-based services; and 4) the willingness of physicians to accept the concept of ordering lab tests via the Internet. Here are details on each:

1

Business priorities of commercial labs:

In general, the most aggressive changes which occur to the lab industry are driven by the nation's largest commercial lab companies. For instance, commercial labs instigated widespread lab consolidation (by acquisition), accepted capitated managed care contracts, and initiated "marginal cost" pricing to gain sole source HMO contracts. In each case, regional labs and hospital labs had to respond to maintain their competitive position in local markets.

As of the second half of 1999, two of the three biggest commercial lab companies were affiliated in some way with WebMD. Yet, for some interesting reasons, none of the lab industry's billion-dollar behemoths ended up rushing to introduce Web-accessed lab test ordering and results reporting.

Had either of the two remaining national labs made it a priority implement lab test ordering via the Web on a wide scale in 2000, it's logical to con-

clude that competing labs would have responded with their own test ordering/results reporting solutions. This would have been a defensive move to preserve their share of the physicians' office marketplace.

Why did Quest Diagnostics and LabCorp choose not to push forward rapidly in 2000 with a national roll-out of Web-accessed lab test ordering? The answers lie in the three reasons explained below.

2 Disappointing performance of the first generation of Web-accessed lab test ordering software:

Frankly said, the lab ordering systems which came closest to meeting the needs and expectations of the laboratories proved to be deficient in meeting the needs and expectations of the physicians' office users.

This software code had to properly address medical compliance guidelines, lab test catalogs, and laboratory ordering rules. In order to reach into the physician's practice management software to pull out patient demographic and billing data, it needed to interface with the multitude of different vendors' products found in doctors' offices.

At WebMD and several other companies, the resulting software product proved to be great at gathering everything the lab needed to properly run the test and generate a clean bill. But these first-generation systems were complicated and intrusive to the doctors' staff who had to actually use the software to generate a test requisition.

It didn't take long for vendors and the participating lab to learn that these systems were not "user-friendly." Feedback from physicians' offices where Web-accessed lab test ordering was undergoing trial evaluation was immediate and unequivocal.

In terms of functionality and ease of use, these first-generation systems

failed to measure up. But there were other problems, equally challenging to the concept of Web-accessed lab test ordering from the physician's office.

3 Inadequate broadband access and Internet expertise in most physicians' offices:

Efforts to establish Web-accessed lab test ordering in physicians' offices ran into a major obstacle. The required software was complex. To work effectively, it needed a broadband Internet connection between physicians' office and the ISP (Internet service provider).

Yet few doctor's offices were equipped with T-1 lines, cable modem access, ISDN, or DSL. In fact, many offices were still using practice management computer systems operating on a PC-486 chip with a 14.4KB or 28.8KB dial-up modem!

Moreover, few doctors' offices had an individual who was Internet-savvy and willing to tackle the job of learning this rather complicated system so they could teach other staff members how to use it.

For both system vendors and their laboratory customers, this was an insurmountable problem. The systems' end user—the physicians' office—lacked both the required communications infrastructure and the knowledge base to make a successful go of lab test ordering via the Internet.

4 Willingness of physicians to accept the concept of ordering lab tests via the Internet:

This factor deals with motivation. Doctors asked the lab "what's in it for me?" The answer they got was "not much!"

After all, the software system used to order lab tests over the Internet was complex, frustrating to use, and unacceptably slow. Moreover, the doctor was going to have to spend money to

Blood Brothers Pursue "Do it Yourself" Strategy to Shave Costs and Incorporate EMR Capabilities

IT'S ALL ABOUT COST AND CONTROL. When the two Blood Brothers decided to bypass vendors like WebMD and pursue Web-accessed lab test ordering on their own, it was a calculated strategy designed to capture most of the cost savings from shifting to a thin client, ASP solution.

If a commercial lab can eliminate the PCs, teleprinters, and dedicated phone lines they keep in physician's offices, the savings are potentially immense. Depending on the size of the laboratory and its transaction volume, each patient encounter (test requisition received and lab test result reported) costs between \$2.00 and \$3.00.

WebMD offered to handle these transactions for a clinical lab at a price of 65¢ to 75¢ per patient (test requisition and report of results). Currently, vendors are offering prices as low as 25¢ to 40¢ per patient.

It should be no surprise, then, that the national labs, after studying the technology which supports the thin client, ASP service model embraced by WebMD, decided they could engineer their own solution for test ordering for a lot less money.

acquire broadband access. His staff would be distracted by the needed training. These disadvantages were offset by few advantages. That is why only a limited number of physicians were eager to embrace this new method for ordering lab tests.

Strong Revenue Growth

These four basic reasons played a major role in slowing the introduction of Web-accessed lab test ordering into physicians' offices. The benefits to a laboratory are obvious, immediate and substantial. Unfortunately, this has not been the case for physicians and their staffs.

The electronic medical record (EMR) also played a role in delaying implementation of Web-accessed lab test ordering. Business strategists at the nation's larger laboratories recognized that all segments of the healthcare marketplace were evolving toward a universal EMR.

This includes hospitals and integrated health networks (IHN), physicians, payers, and patients. Since the majority of a permanent medical record is laboratory test data, it didn't take long for the national labs to recognize the obvious opportunity: their customers wanted better access to lab test results. They didn't necessarily want to order lab tests over the Internet.

The shift to emphasize enhanced services over test ordering was driven by customer expectations. It explains why Quest Diagnostics began devoting significant resources to its business relationship with **Caresoft, Inc.** (with the *mydailyapple.com* Web site that allows patients to access their personal lab test results) and **MedPlus, Inc.** (which is offering systems for moving clinical information and managing an EMR for individual patients).

After reviewing the experience of the first-generation vendors to offer Web-accessed lab test ordering, industry insiders tell THE DARK REPORT that two things must happen to accelerate physician acceptance of this feature.

One, the software systems which support lab test ordering must become simpler, faster, and exceptionally easy for users to operate. Second, the more physicians' offices with broadband Internet connections, the easier it will be for them to accept and use Web-accessed lab test ordering. **TDR**

Contact Robert Michel at 503-699-0616.

Nurse Shortage Parallels That of Fewer Med Techs

Growing numbers of American hospitals are willing to recruit nurses in foreign countries

CEO SUMMARY: *It's a story that will soon become a national headline. Even as laboratories struggle to find enough med techs to fill open positions, hospitals are facing an even bigger problem in getting enough nurses to keep units staffed and open. Recruiting nurses overseas is one solution—but will the American lab industry try the same strategy?*

IMAGINE A STATE WHERE HALF the laboratories must close sections of the lab or scale back testing services because there aren't enough medical technologists to do the work.

This hasn't hit the clinical lab industry yet, but it's already happening to hospitals in the United States. Maryland is a good example. Catherine Crowley, who handles nursing matters for the **Maryland Hospital Association**, recently declared that more than half of Maryland hospitals had closed units or scaled back services because there were not enough nurses to fill required positions!

Problem Will Get Worse

It's now common knowledge among the laboratory community that there are not enough medical technologists to properly staff the nation's laboratories. There is also recognition that the problem will get worse before it gets better.

That is why the shortage of nurses is an important trend for lab administrators to watch. Whatever methods are

used to solve the nursing shortage can also be used to help address the med tech shortage.

More specifically, as pressure from the healthcare system builds for schools and universities to train more nurses, it will provide the lab industry with an opportunity to insist that funds and resources also be directed toward training more med techs.

One fact brings the nursing problem into sharp focus: since 1992, the number of nurses working in the United States has stayed almost constant. Yet during this same period, hospital admissions increased by 4.5% and outpatient volume grew by 20%. The aging baby boomers are expected to fuel a demand for health services so great that, by 2020, the nation may have 20% fewer nurses than it needs. These numbers are from the **American Nursing Association**.

In the short term, American hospitals are coping by hiring contract nurses. However, this raises labor costs. HCA reported that it spent \$20 million

more for nursing in third quarter 2000 than the same period in 1999.

The second strategy hospitals are using to attack the nursing shortage is to recruit nurses from overseas countries. This is something that clinical labs have yet to do. In October, Congress passed a bill lifted a ceiling on visas so an additional 60,000 registered nurses can enter the country.

The Wall Street Journal recently reported that **O'Grady-Peyton International**, based in Savannah, Georgia, had been recruiting for nurses in South Africa. Over 100 nurses attended meetings in six cities and as many as 20 were expected to be offered jobs and green cards in the United States.

One fascinating consequence of the global nursing shortage is that demand from developed countries pulls nurses from third world countries. Holland recruits in South Africa (because of language similarities). South Africa then recruits nurses from Ghana.

Hiring Moratorium

Of course, Canadian nurses come south to the United States. Then Canada recruits in Britain, which recruits from its former colonies. So many nurses left Jamaica that the country forced Britain to put a moratorium on hiring in Jamaica.

THE DARK REPORT observes that the nursing shortage will have a direct impact on clinical laboratories, if not immediately, definitely within the next several years. Predictions are that point-of-care and near-patient testing will continue to grow. Without adequate staffs of nurses, this testing will have to be done by other trained healthcare workers.

Regardless of whether POCT testing is done in the hospital, physicians' office, or home care setting, there will probably not be enough nurses (and enough med techs) to do this testing.

For that reason, it is reasonable to expect that automation and miniaturization of lab testing equipment will be one way to cope with this dilemma. However, it also means that laboratories should revise their business plan to include strategies that accommodate this situation. Another solution may be to go overseas and recruit med techs.

Another Looming Crisis

Recognizing the the shortage of nurses will eventually affect the way clinical laboratories deliver lab test services, there is another another labor crisis looming on the lab industry horizon. This crisis involves phlebotomy.

In an upcoming issue of THE DARK REPORT, we will provide startling business intelligence about how the health-care system is about to become increasingly dependent on laboratories to handle phlebotomy.

The point of this intelligence briefing is to alert lab administrators and pathologists that the med tech shortage will *not* be an isolated phenomenon. Labs will also have to develop effective management strategies to simultaneously cope with the impact of too few nurses and an altered role for laboratory-provided phlebotomy.

The market trends leading to this situation are already in motion. During the next 18 to 24 months, more signs will become visible. THE DARK REPORT would like to hear from any hospital laboratory which is already changing its operational arrangements in order to respond to the shortage of nurses in that hospital.

In summary, the nursing shortage has implications beyond the parallels to the med tech shortage. As nursing labor becomes a more valuable commodity, the laboratory will be required to take on new responsibilities as a way of coping with this situation.

TDR

Contact Robert Michel at 503-699-0616.

Lab Industry Briefs

DIANON & IMPATH REPORT 2000 EARNINGS

TWO OF THE NATIONAL anatomic pathology companies reported fourth quarter earnings. Both **DIANON Systems, Inc.** and **IMPATH, Inc.** posted big gains in revenues and operating profits for 2000.

At DIANON Systems, revenues reached \$95.7 million, a gain of 26% over 1999 revenues of \$76.1 million. Operating income in 2000 climbed by 58%, from \$6.8 million to \$10. million.

It was even more spectacular at IMPATH. Revenues for 2000 were \$138.2 million. This was 62% greater than 1999 revenues of \$85.4 million. Net income climbed 57%, totalling \$12.9 million in 2000. IMPATH's net income was \$8.2 million in 1999.

The strong financial growth at both companies is further confirmation to the anatomic pathology profession that sales and marketing is a good investment for those pathology groups seeking to improve revenue and partner compensation.

DYNACARE, SPECIALTY, AND QUEST ANNOUNCE LAB ACQUISITIONS

THINGS HAVE BEEN HOPPING since the new year. Three laboratory acquisitions were announced.

Dynacare, Inc. tendered an offer to acquire the laboratory operations and assets of **Medical Arts Laboratory, Inc.**, located in Oklahoma City, Oklahoma. Medical Arts filed for Chapter 11 bankruptcy in November 2000. (*See TDR, November 13, 2000.*)

Several potential buyers "kicked the tires," but Dynacare had the strongest interest. The Oklahoma City location

nicely complements the laboratory testing organization that Dynacare has been assembling in east Texas, Arkansas, Louisiana, Mississippi and Alabama. Oklahoma is a contiguous market to Texas and Arkansas. The purchase agreement is pending approval by the bankruptcy court.

Next in the acquisition queue was **Quest Diagnostics Incorporated.** On February 1, it announced that it would purchase the assets of **Clinical Laboratories of Colorado, LLC (CLC)**, based in Denver. Related to this transaction, Quest Diagnostics picked up a contract to manage laboratories at five hospitals owned by **Centura Health.**

CLC was a lab oft-mentioned as an acquisition candidate. One of its primary owners is Moon S. Park, M.D., who is also an owner of **Clinical Laboratories of Hawaii**, based in Honolulu.

Quest Diagnostics considered CLC to be a good strategic acquisition. The regional laboratory it operates in Denver is one of the company's largest and it expects worthwhile synergies from integrating the two operations. Less is known about the laboratory management contract with Centura Health, since terms of this agreement were not disclosed.

Finally, last week **Specialty Laboratories, Inc.** announced a lab acquisition. It will pay \$9.5 million to purchase certain assets of **BBI Clinical Laboratories, Inc.**, (BBICL) a wholly-owned subsidiary of **Boston BioMedica, Inc.**

Specialty was interested in BBICL's esoteric testing expertise in the areas of tick-borne pathogens, particularly Lyme Disease, and the immunological and molecular analysis

of HIV and viral hepatitis. BBICL also serves many of the same clients as Specialty, which should contribute to an easier integration of the two labs.

All three acquisitions share a common theme. Each of the acquiring companies is purchasing a laboratory which complements its existing business. For the last several years, the majority of buyers for independent laboratories have been other lab companies. Probably the last "outsider" to enter the lab space was **Golder, Thoma, Cressey & Rauner, Inc.** (GTCR), which participated in the purchase of **American Medical Laboratories, Inc.** by Timothy Brodник, Jack Bergstrom, and Jerry Glick. (*See TDR, May 12, 1997.*)

ENROLLMENT DECLINES MAY BE MARKING END OF HMO'S HEYDAY

IT'S ALREADY been noted in THE DARK REPORT that 1999 was the first time in 30 years that HMO enrollment declined. Now additional statistics have been published which show a profound shift in national managed care trends.

During 1999, HMOs lost 430,000 members. In 1999, the year ended with 80.9 million Americans enrolled in an HMO, compared to 81.3 million in 1998. Where are these people going?

It seems the shift is to PPOs. Enrollment in PPOs exceeded that of HMOs in 1998 and totaled 98 million in 1999. As THE DARK REPORT predicted during 1997 and 1998, Americans have rejected the closed-panel HMO model, where a gate-keeper effectively restricted their access to healthcare. Consumers are selecting programs which allow them increased choice and control over their personal healthcare.

These trends are reinforced by news that the number of HMOs is shrinking. In 1998, there were 643 HMOs in the United States. That number declined by 12%, to 568 in 1999. Approximately 29

of these HMOs closed due to ongoing financial problems or bankruptcy.

For the clinical laboratory industry, these trends are favorable. It means fewer capitated contracts for lab services. However, the financial squeeze which continues to trouble many health insurance plans is a sign that lab reimbursement may not increase by much.

PRESS RELEASE PUFFERY PROVIDES A CHUCKLE FOR THOSE "IN THE KNOW"

In closing this edition of "Lab Briefs," its time to interject some humor. Most lab executives and pathologists know that much of what appears in a company's press release is carefully written to convey only the best side of the issue.

Think of this phenomenon as similar to the spinmeisters of the Clinton White House. Seldom was any event to be interpreted exactly as it appeared. To the contrary, time and time again the White House spinmeisters seemed to successfully weave the Emperor's new clothes from their version of the facts.

Thus, in the public relations wars, perception must really count! What triggered these musings was a line in the fourth quarter earnings announcement by **Laboratory Corporation of America.**

In its February 14 press release, it described itself in new terms. Labcorp says it is "the first clinical laboratory to fully embrace genomic testing." Given the existing test mix ratio of routine testing to esoteric testing at LabCorp, that is certainly a worthy goal. As well, there are probably more than a few laboratorians with the credentials to challenge LabCorp's statement. However, for the investment community, that description must have the right "ring."

By the way, in earlier press releases, LabCorp offered the more traditional description; to wit: "a national clinical lab with annual revenues of \$1.7 billion in 1999." (Issued on January 26.) **TDR**

INTELLIGENCE

LATE & LATENT
Items too late to print,
too early to report



Multiplex testing on a single specimen is getting ever closer to the clinical marketplace. On February 19, **LINCO Research, Inc.** and **Luminex Corporation** announced an agreement that calls for LINCO to develop, manufacture, and market multianalyte immunoassay kits using Luminex's LabMap™ technology. LINCO says it has immediate availability for an "8-plex" kit that can simultaneously measure eight human cytokines in serum or tissue culture media. Luminex has agreements with **BioRad** and **Abbott Laboratories** that call for development of multiplexed diagnostic assays.

DYNACARE FALLS FROM INVESTOR FAVOR

For reasons yet unknown, some Wall Street investors lost their interest in **Dynacare**. On January 1, Dynacare's share price was \$10, equal to its initial public offering (IPO) in November. However, its share price fell steadily, hitting a low of \$5.56 per share on February 22.

EEOC SUES TO STOP DNA BLOOD TESTING OF EMPLOYEES

It's been all debate until now. Controversy about genetic testing of employees by employers has now become a real-world court case. The **Equal Employment Opportunity Commission (EEOC)** filed suit against **Burlington Northern Santa Fe Corp.** in federal court in Sioux City, Iowa on February 12, 2001. Burlington Northern had tested 20 of about 125 employees who filed claims for carpal-tunnel syndrome injuries to "determine whether there was any evidence that the claimed carpal-tunnel injury may have been the result of a genetic predisposition as opposed to a job-related injury."

MORE ON: EMPLOYEE GENETIC TESTING

The day following the EEOC lawsuit, Burlington Northern said it would cease DNA blood testing of its employees. The EEOC said it would continue to pursue its investigation of these issues. There is growing

concern that employers will increasingly use genetic testing as a way to eliminate employees who are predisposed to certain health conditions. The legal issues may eventually expand to affect labs which do such genetic testing. It is not known which clinical laboratory was doing the genetic testing for Burlington Northern.

NICHOLS EXECS JOIN GREAT SMOKIES LAB

A team of executives formerly with **Quest Diagnostics** and **Nichols Institute** has migrated from hip Orange County, California to the "backwoods" forests of the Smoky Mountains to join **Great Smokies Diagnostic Laboratory**, located in Asheville, North Carolina. Frank Taylor, Ted Hull, and John Phillips left a multi-billion dollar lab to cross the continent and join an entrepreneurial lab now breaking new ground in diagnostic testing designed to support "functional medicine."

*That's all the insider intelligence for this report.
Look for the next briefing on Monday March 19, 2001.*

SEE! LEARN! COMPARE!

Everything You Need to Know About Web-based Informatics

Facilitated by LIS Guru Bruce Friedman, M.D., learn from nine of the leading players in Web-accessed lab test results reporting between docs offices and labs. Atlas Development ¥ Careevolve.com ¥ Cerner ¥ Dynamic Healthcare Technologies ¥ iMcKesson ¥ LabPortal.com ¥ LabTest.com ¥ Proxymed ¥ Sunquest ¥ Plus more companies at our special Vendor s Fair!

THURSDAY, MAY 10, 2001

Following the Executive War College—May 8-9

Hyatt Regency Hotel, Cincinnati, Ohio

For information or to register—Call 800-560-6363 or darkreport.com

UPCOMING...

- ***Coming National Crisis in Lab-Provided Phlebotomy Services.***
- ***Pre-Analytical Automation Hits Its Stride: Lessons From Pioneering Lab Users.***
- ***Pathology Marketplace Quietly Evolving Toward New Clinical and Business Models.***
- ***Cracking the Managed Care Conundrum: Secrets of Earning Higher Reimbursement for Lab Testing Services.***