

Diagnostic Testing and Technology Report

Competitive Intelligence & Analysis for an Expanding Global Market

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Established 1979

When Will Pathology Slides Go Digital?

Over the past 10 years, the use of digital imaging systems has been steadily adopted in the field of radiology and now represents a multibillion-dollar business in the United States for manufacturing giants like GE Healthcare, Siemens, and Philips. But while digitizing X-rays, MRIs, and ultrasound for interpretation and archiving on computers has become commonplace, this technology has not yet gained traction in the pathology market. Today, there are only perhaps 100 pathology labs in the United States using digital imaging technology for clinical purposes. Why not more?

The chief reason is simply that digital images of entire pathology slides require a much higher resolution—typically 54,000 pixels per inch (PPI)—than needed for radiology (500 PPI). The submicron resolution needed for pathology requires more computing horsepower and liquid crystal display (LCD) monitors, according to Dirk Soenksen, chief executive of Aperio Technologies (Vista, CA), which makes ScanScope slide scanners and related virtual microscopy software.

But the increasing speed of computer chips, higher throughput systems, and the declining cost of LCD monitors is now making digital imaging a viable option for pathology labs, says Soenksen. "It now takes minutes to digitize an entire slide versus hours a few years ago. . . . We're only a few years away from widespread use," he predicts. For a full update on digital imaging in pathology, see *Inside the Diagnostics Industry*, pp. 3-9.

New Marker For Prostate Cancer Looks Promising

A new blood protein marker called EPCA, or early prostate cancer antigen, may provide a much more effective way of detecting early prostate cancer, according to clinical study results published in the May 15 issue of the journal *Cancer Research*. For the study, researchers at the University of Pittsburgh developed a simple test that would detect EPCA in the blood and then measured the EPCA levels in 46 patients, including those with prostate cancer (12 patients), bladder cancer (6 patients), colon cancer (2 patients), kidney cancer (1 patient), spinal cord injury (7 patients), noncancerous prostate inflammation (2 patients), and 16 healthy individuals. ➔ p. 2

▲ **New Marker For Prostate Cancer**, from page 1

EPCA levels were high in 11 of 12 prostate cancer patients (92%) and low in all of the healthy individuals. EPCA was also found to be highly specific for prostate cancer. Only two bladder cancer patients and none of the other patients had high EPCA levels, suggesting that the EPCA test was correct 94% of the time.

In contrast, only a quarter of patients with elevated PSA—the blood marker now used for prostate cancer screening—actually have cancer.

The study was supported by Tessera Inc. (Seattle, WA), a privately held company that has an exclusive worldwide license agreement for EPCA with the University of Pittsburgh. Tessera says multisite clinical trials will soon be under way to verify EPCA's usefulness for detecting prostate cancer in a larger sample of patients in preparation for an FDA clearance submission.

Earlier this year, Tessera announced the release of its first product, EPCA IHC, in analyte specific reagent (ASR) form for use on tissue samples taken in prostate biopsies, as an aid in detecting cancer in biopsy samples which otherwise appear to be normal. Tessera says Unipath, LLC (Denver, CO), one of the largest pathology groups in the nation, is the first lab to offer the test.

Prostate cancer is the most common type of cancer found in American men. The American Cancer Society estimates that there will be approximately 232,090 new cases of prostate cancer in the United States in 2005, and 30,350 men will die of this disease. 🏠

HemoSense Finally Completes Its IPO

After several price adjustments in its IPO share price, HemoSense (San Jose, CA) made its debut as a publicly traded stock on June 28. The company sold 3.5 million shares at a price of \$5.50 each, raising gross proceeds of \$19.3 million. The IPO was managed by the investment banks Lazard Capital Markets, W.R. Hambrecht, and Roth Capital Markets. The company's stock will trade on the AMEX under the symbol HEM.

HemoSense initially filed in March to go public under the symbol HEMO on the Nasdaq at an expected price range of between \$9 and \$13 per share. But in the following months an apparent lack of investor enthusiasm for the stock caused the company to switch to the AMEX and cut its target IPO price range to \$8 to \$10 per share, then \$7 to \$9, then \$6 to \$8, with the final sale occurring at \$5.50 per share.

HemoSense makes a handheld blood coagulation monitoring system (named INRatio) for the management of patients on the blood-thinning drug warfarin. From its product launch in March 2003 through March 2005, HemoSense has sold over 5,000 meters and one million disposable test strips on a worldwide basis.

In the six months ended March 31, 2005, the company recorded a net loss of \$6 million versus a net loss of \$4.5 million in the same period a year earlier; revenue was \$3.4 million vs. \$1.3 million. Over the past five years, HemoSense has accumulated net losses totaling \$30.6 million.

After the IPO, HemoSense has a total of 9.53 million shares outstanding for a current total market value of \$52 million. 🏠

inside the diagnostics industry

Faster Systems Making Virtual Pathology More Viable

Improved technology behind digital imaging systems and faster computers now make scanning entire pathology slides in as little as a few minutes possible. This compares with the average of more than 10 minutes per slide it took just a few years ago. But although digital pathology, also known as virtual pathology, has overcome its first and biggest hurdle (i.e., speed), there are other obstacles that need to be passed before widespread adoption occurs.

Right now, a handful of small healthcare technology firms are selling their digital imaging systems on a research use only (RUO) basis, and the regulatory path for full FDA clearance for commercial marketing for clinical use has not been established.

Executives from all of the prominent vendors of virtual pathology systems (Aperio Technologies, DMetrix, Trestle Holdings, Bacus Labs) say they are working on clinical trials and making preparations to submit applications to the FDA. The objective is to prove that pathologists' readings from digitized slides can be as accurate as or better than readings from traditional glass slides.

FDA clearance of virtual pathology systems is likely to occur sometime in the next year or two. Approval should give hospitals and pathology groups greater confidence in virtual pathology.

VIRTUAL PATHOLOGY The Next Step in the Evolution of Microscopy?



Pros for Virtual Pathology...

TRADITIONAL MICROSCOPY

- Limited to manual analysis
- Burdensome archival & retrieval
- Remote viewing not possible
- Slides can break or decay

Cons for Virtual Pathology...

- Speed: Seconds per slide
- Costs: \$20,000 to \$25,000
- Space: 2 feet by 2 feet

Source: DTTR



VIRTUAL PATHOLOGY

- Analyze by software algorithm
- Instantly archive & retrieve
- View anywhere, anytime
- Digitized slides last forever

- Minutes per slide
- \$100,000 to \$200,000
- 3 feet by 3 feet

But even after FDA clearance, virtual pathology vendors will still have a lot of work to do to make their systems a desirable option for pathologists. Despite the increased scanning speed, digital imaging systems are still slower than traditional microscopy.

At roughly \$20,000 to \$25,000 for a basic set up (i.e., microscope, camera, computer system), traditional microscopes are a fraction of the \$100,000 to \$200,000 that the average virtual pathology system sells for. Finally, with most labs facing a shortage of space, traditional micro-

scopes have the advantage of taking up a smaller footprint than virtual pathology systems.

But as technology advances, virtual pathology systems will get faster, cheaper, and smaller. The question is not if, but when will digitized slides become the standard in pathology. Below we provide an update on where some of the leading vendors in virtual pathology stand today.

Aperio Technologies is currently selling its ScanScope digital imaging system on a research use only (RUO) basis. Approximately 75 pharmaceutical/biotech companies, medical universities, and pathology labs are currently using the system, including US Labs (now owned by LabCorp), Ohio State James Cancer Center, and the Armed Forces Institute of Pathology (Washington, DC). Soenksen anticipates that Aperio will have about 100 ScanScope systems in place at 70 different labs by year's end.

Among pathology labs, US Labs may be the furthest along in integrating digital pathology into daily clinical use. Under this model, hospital pathologists ship paraffin blocks to US Labs in California, where the blocks are sectioned and stained.

Virtual slides of the glass slides are processed and posted on the Web for immediate viewing by the hospital pathologist. The hospital pathologist is then given the option of reading out the virtual slides from a distance, by telepathology, or having a US Labs pathologist read the case in California.

The virtual slides are stored on a US Labs server but viewed on the referring pathologist's own desktop video monitor. The US Labs service model enables the hospital pathologist to bill for the professional component of the surgical pathology virtual slide read-outs.

US Labs Case Study

- National cancer reference lab
- Multiple ScanScope digital imaging systems running 24/7
- 10,000 slides/month
- Benefits to US Labs
 - Faster turnaround times
 - Reduced transportation costs
 - Remote viewing and analysis
 - evaluate staining quality
 - order new tests
 - apply analysis algorithms
- US Labs purchased by LabCorp for \$155M in February 2005

Source: Aperio

But CEO Dirk Soenksen says widespread use of virtual pathology won't occur until certain regulatory questions are answered. Because digital imaging systems do not provide test results and are only used as a tool to prepare specimens for interpretation by pathologists, Soenksen believes FDA clearance should be straightforward. "We need to show that the quality of a digital image is as good as or better than a microscope," he says. Aperio is planning to submit an application to the FDA in the next one to two years, according to Soenksen.

Soenksen says the basic ScanScope system, including an LCD monitor and software, costs approximately \$70,000. Aperio's higher-end systems, which include more computer memory and robotics to automatically load slides, cost as much as \$200,000. Aperio also sells image analysis software packages at prices that range from a few thousand dollars up to \$50,000, depending on the complexity of the software.

Aperio is a privately held company; DakoCytomation has a minority stake in the company.

DMetrix (Tucson, AZ) was founded by five scientists and pathologists from the University of Arizona in May 2001. The company's DX-40 digital imaging system is currently being used on a RUO basis at two sites: the University of Arizona College of Medicine and University Physicians Hospital (Kino, AZ).

Mike Descour, Ph.D., president of DMetrix, says the DX-40 is distinguished from competing systems by its array microscope, whose imaging engine consists of an ensemble of 80 miniature microscope objectives that can simultaneously scan an entire slide in about one minute. Slide preparation, including loading and unloading, takes another minute; so altogether, the system takes two minutes to digitize a slide for throughput of 30 slides per hour.

Descour says that DMetrix is in the process of making improvements to its software that will decrease slide preparation time by 30 seconds, thereby increasing throughput to 40 slides per hour.

Descour likens digital pathology to a sophisticated paper Xerox machine, except instead of paper, it's microscope slides, and instead of copying a paper image at 300 dots per inch, it's a slide being copied at 54,000 dots per inch.

As for the accuracy of digital imaging, Descour points to a clinical validation study published last year in the journal *Human Pathology*. In the study, the diagnostic accuracy of the DX-40 system was compared to conventional light microscopy. Four senior pathologists at the University of Arizona College of Medicine diagnosed breast surgical pathology cases, using both methods, but on separate occasions.

The pathologists achieved 97% to 100% diagnostic accuracy, using digital slides prepared by the DX-40 system. Three out of four pathologists had more correct answers by digital slides than by conventional light microscopy. And digital slides and light microscopy did not differ significantly with respect to the number or percent of correct decisions rendered, notes Descour.

"Just a few years ago digital imaging wasn't useable because of speed. But we're now not far away from digital becoming the norm. I expect it to follow the same path as radiology," says Descour.



Descour says the base configuration for DX-40 sells at a list price of \$140,000 (with automation, it's \$200,000).

Trestle Holdings (Irvine, CA), founded in 1998, has more than 100 microscopes and approximately 800 viewing stations for telepathology in place in the United States. Most of these sites are also using the Trestle's digital imaging systems as well, according to chief executive Maurizio Vecchione.

Drug companies using Trestle systems for new drug development include

Pfizer, GlaxoSmithKline, Sanofi-Aventis, Merck, Abbott Laboratories, and Boston Scientific. Pathology lab clients include Pathology Partners Inc., Walter Reed Army Medical Center, Newark Beth Israel, University of Michigan, University of Louisville, Columbia Presbyterian University, University of California at San Francisco, and Bostwick Laboratories.

Trestle's telepathology product, MedMicro, is a remote controlled, digital microscope that enables pathologists in dispersed locations to simultaneously review the same tissue sample in real time. MedMicro, which has been cleared by the FDA as a Class I device, is mainly used for reviews and second opinions on pathology cases, says Vecchione.

Vecchione says that Trestle recently completed clinical trials at the University of Pittsburgh Medical Center for its digital imaging system, MedScan. He anticipates that Trestle will submit a Class II application to the FDA within the next few months.

Vecchione says MedScan's automated loading system can prepare and scan an entire slide at a 20 times objective in about two to six minutes, depending on the type of sample. He says MedScan is differentiated from competing systems by its ability to do volume scans that provide three-dimensional pictures of samples with varying thicknesses. Including the automated loader, the MedScan system takes up a three-foot-by-three-foot footprint.

Trestle's combined MedMicro and MedScan systems sell for between \$40,000 and \$120,000, depending on the speed and level of automation desired, according to Vecchione.

Trestle, a publicly traded company, reported a net loss of \$5.1 million in 2004 versus a net loss of \$2.6 million in 2003; revenue increased to \$4.8 million from \$2 million.

Earlier this year, Trestle acquired InterScope Technologies for approximately \$1.2 million in stock and cash. InterScope had been developing a family of database applications designed to manage a digital workflow for anatomic pathology and clinical trials for new drugs. Trestle is aiming to commercialize these applications in support of a newly created data mining and tissue informatics offering.

Bacus Laboratories (Lombard, IL) was founded in 1994 by its president James Bacus, Ph.D. The company has been a pioneer in virtual pathology and holds 11 U.S. patents in Internet-based virtual microscopy and related digital imaging methods. Bacus has been seeking to enforce its patents against other virtual pathology vendors and has reached software licensing agreement with Trestle Holdings and Nikon Instruments. Dr. Bacus did not return phone calls from *DTTR* seeking comment.

The Old Guard Sees the Writing on the Wall

Digitized slides represent a threat to the manufacturers of traditional microscopes—a market that represents annual sales of approximately \$300 million to \$400 million in the United States. This market is dominated by four vendors—Olympus, Nikon, Zeiss, and Leica—and each is developing a strategy for providing virtual pathology.

Olympus, which has more than 50% of the traditional microscope market in the United States, is evaluating the virtual pathology systems of all the startup companies. “We understand the usefulness of this technology. This is where microscopy is headed in the future,” says Chris Higgins, group marketing manager for Olympus America’s microscope division. He points out that the transition is likely to occur slowly because of speed, cost, and space issues associated with current virtual pathology systems. But as the technology improves, he expects adoption to accelerate.

He notes that Olympus purchased a virtual pathology European company called Soft Imaging Systems and is now offering the product in Europe.

Meanwhile, **Nikon Instruments** (Melville, NY) introduced its next-generation digital microscope—Coolscope VS—last summer. The product uses virtual pathology software licensed from Bacus Labs. Nikon is marketing Coolscope VS as a cost-effective alternative (roughly \$20,000 to \$25,000 per system) to competing products.

Virtual Pathology at the Armed Forces Institute of Pathology

The Armed Forces Institute of Pathology (AFIP-Washington, DC) may be the most advanced lab in the country when it comes to virtual pathology and telepathology.

AFIP is located on the campus of Walter Reed Military Hospital in northwest Washington, DC, employs about 800 people, including 80 pathologists, and serves the army, navy, and air force, as well as civilian hospitals.

AFIP first began developing a digital imaging system in 1992, and in 1997 it purchased one of the first commercial systems from Bacus Labs, according to Bruce Williams, DVM, chair of AFIP's department of telemedicine and distance learning. A few years later, AFIP switched to Aperio's ScanScope system and now has two systems in use for its distance learning program.

Over the past 150 years, Williams says AFIP has built a slide archive of approximately three million cases, including rare diseases like SARS and monkey pox. Williams says 3,000 of these cases have been scanned into a digital format that pathologists can access via the AFIP's Web site. About 5,000 pathologists from around the world subscribe to AFIP's educational services, according to Williams.

The benefits of virtual pathology include the indestructibility of digitized slides, easy archiving, no risk of getting lost in the mail, and the ability to make rare cases available to hundreds of pathologists at the same time. Williams says AFIP's entire medical education program has been built on virtual pathology and that it's been a huge success and says AFIP plans to add a third ScanScope system within a few months.

AFIP has also been providing telepathology services to U.S. soldiers around the world since 2001. It currently has 28 remote-controlled microscopes made by Trestle in Iraq, South Korea, Germany, Hawaii, and other locations, according to Williams. He says that U.S. military pathologists from around the world use telepathology to get real-time diagnoses and second opinions on difficult cases from AFIP pathologists in Washington, DC. Each year, approximately 80 AFIP pathologists handle about 50,000 cases using telepathology.

Williams says telepathology has been invaluable in Iraq where, for example, cutaneous leish maniasis (non-healing skin lesions) is commonly contracted by U.S. soldiers. Without the use of telepathology, soldiers with suspected cases of leish maniasis would need to be medivaced (medical evacuation by helicopter) from Iraq to an army hospital in Germany to get confirmation of the disease by a specialty pathologist.

The savings from eliminating just one or two unnecessary medivacs can more than pay for a Trestle microscope, notes Williams. He says AFIP will probably switch from remote-controlled microscopes to digitized slides later this summer to eliminate satellite transmission lag times of five to 15 seconds associated with the remote manipulation of microscopes.

Separately, Williams notes that the Department of Defense (DOD) has recommended that Walter Reed Hospital and AFIP be closed, with certain functions being consolidated into other military hospitals and others outsourced to civilian hospitals and/or commercial labs. This means that labs like Johns Hopkins, Mayo Clinic, or Quest Diagnostics could be providing contracted pathology services to the military in the future. Williams says the DOD's recommendation

will need to be approved by Congress and the President. No time line for a potential closing has been set yet.

Virtual Pathology and Outsourcing to Third-World Countries

What about the potential for digital images of pathology slides to be sent electronically to places like India where pathologists might work at a fraction of the price charged by their colleagues in the United States? Several lab companies in India, including Metropolis Health Services (Bombay) and Ranbaxy SRL (Bombay), have said they are seeking to provide cancer testing services to hospitals in Europe and the United States.

"I have heard of various schemes and seen business plans to do this, but I don't see it actually happening. There are too many regulatory issues, and state licensing requirements make it difficult," says Trestle's Maurizio Vecchione.

"We haven't yet gotten any requests for this yet. In fact, the opposite is true. Digital image technology is more likely to bring pathology expertise from the United States to third-world countries," adds Aperio's Dirk Soenksen.

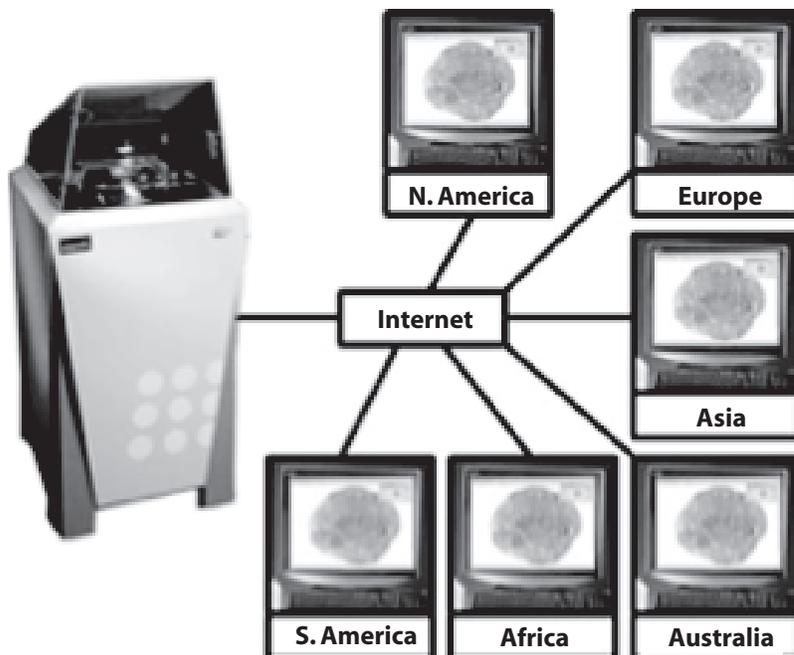
In fact, Vecchione says that the pathologists at the University of Pittsburgh Medical Center are already providing case reviews for hospitals in Italy.

Meanwhile, in a 2003 article in the *New York Times* ("Who's Reading Your X-Ray?") Ronald Weinstein, professor and head of pathology at the University of Arizona College of Medicine, which is using the DMetrix DX-40 system to teach

pathology students, said he believes the new technology may allow for virtual universities that can train doctors in foreign countries to meet American requirements. "The concept of boundary-limited medical education and licensure will fade in time," he said.

But overall, Weinstein, who is also president of the American Telemedicine Association, said virtual pathology may be a net gain to U.S. pathologists and noted that the University of Arizona plans to market its pathology services around the world. 🏛️

Virtual Pathology Can Allow Slides to be Sent and Read Anywhere in the World



New \$275 Baby Gender Test Promises Faster Results

A new test developed by Acu-Gen Biolab (Lowell, MA), a privately held company, can tell pregnant mothers their babies' gender as soon as five weeks after conception—and expectant parents can receive their results in 48 hours.

Acu-Gen is marketing the test as the Baby Gender Mentor on the Web at www.Pregnancystore.com. The test kit and lab service sell for \$275. After purchase, the pregnant woman receives a package that includes two rapid pregnancy tests (to confirm pregnancy) and a finger-stick lance and sample collection card. Three drops of blood are placed on the collection card and sent in a pre-paid FedEx envelope to Acu-Gen's laboratory in Massachusetts.

The lab amplifies the DNA and then looks for the presence of a Y chromosome, which only males have. Presence of the chromosome means the fetus must be male; its absence means a female. Acu-Gen says it provides test results online to the mother within two business days after receiving her sample and promises double money back if the results prove to be wrong.

The Acu-Gen test can provide results on women who are at least five weeks pregnant. The quickest current method (at least 11 weeks pregnant) is chorionic villus sampling, or CVS, which involves taking a tiny tissue sample from outside the sac where the fetus develops and carries a 1/200 risk of miscarriage.

The test hit the market June 17 with an exclusive segment on NBC's "Today." Since the announcement, thousands of the tests have been ordered, according to C.N. Wang, Ph.D., scientific director at Acu-Gen.

Wang says that Acu-Gen does not have a CLIA certificate and does not need FDA approval for the test because it is not used for a medical diagnosis. But he adds that Acu-Gen plans to get into clinical diagnostics and is developing prenatal tests for Down syndrome and Fragile X. 🏠

Beckman's Ex-CEO Gets \$710,000 Consulting Agreement

Beckman Coulter (Fullerton, CA) has agreed to pay Jack Wareham, 63, who retired as chief executive earlier this year, a total of \$710,000 over a three-year period for consulting services. In the first year, Wareham will provide up to 45 days of service in exchange for \$330,000 (or \$7,333 per day/\$917 per hour). In the second and third years of the agreement, he will get \$210,000 for up to 25 days of work and \$170,000 for up to 20 days of work, respectively. Wareham will also get free use of the Yorba Linda Country Club and the dinner clubs of the Balboa Bay Club and the Center Club.

The consulting agreement comes on top of the more than \$500,000 per year Wareham now receives as a pension and the \$66 million worth of Beckman stock he accrued during his 36-year career at the company.

Wareham served as chief executive from September 1998 to February 2005. During that time period, Beckman's share price rose from \$23.67 per share to \$70.30 per share for an average annual gain of 15.5%. Over the same period, the S&P 500 Index grew by 2.4% per year. 🏠

IVD Stocks Up 6% Year To Date Led By Affymetrix And OraSure

Twenty-five IVD companies have risen an unweighted average of 6% year to date through July 8, 2005, with, with 14 stocks up in price and 11 down. This compares with no change for the S&P 500 Index so far this year and -3% for the Nasdaq.

The leading gainer among IVD stocks was **Affymetrix** (Santa Clara, CA), which has risen 62% so far this year to \$59.25 per share for a market capitalization of \$3.6 billion. The DNA chip maker now trades at 10.5 times its revenue for the past 12 months and 59 times its earnings.

OraSure (Bethlehem, PA), which makes the OraQuick rapid HIV-1 antibody test, was up 59% to \$10.69 per share for a market cap of \$490 million. The company now trades at 8.3 times its revenue for the past 12 months and is not profitable yet.

Ventana (Tucson, AZ) has increased 36% to \$43.46 per share for a market cap of \$1.6 billion (8.9x revenue and 67x earnings). **Cholestech** (Hayward, CA) was up 35% to \$11.03 per share for a market cap of \$160 million (3.1x revenue and 38x earnings). ▲

IVD Stock Performance, YTD through July 8, 2005

<i>Company (ticker)</i>	<i>12/31/04 Price</i>	<i>7/8/05 Price</i>	<i>YTD % Chg</i>	<i>P/E Ratio</i>	<i>Div. Yield</i>
Affymetrix (AFFX)	\$36.55	\$59.25	62%	59	N/A
OraSure (OSUR)	6.72	10.69	59	N/A	N/A
Ventana (VMSI)	32.00	43.46	36	67	N/A
Cholestech (CTEC)	8.20	11.03	35	38	N/A
Immucor (BLUD)	23.51	29.76	27	74	N/A
Quidel (QDEL)	5.08	6.36	25	N/A	N/A
Luminex (LMNX)	8.88	11.07	25	N/A	N/A
Dade Behring (DADE)	56.00	66.68	19	35	N/A
Meridian (VIVO)	17.55	20.48	17	31	2.4%
Digene (DIGE)	26.15	30.00	15	49	N/A
Abbott Labs (ABT)	46.65	49.35	6	24	2.2
Inverness Medical (IMA)	25.10	26.25	5	26	N/A
Bio-Rad Labs (BIO)	57.37	59.74	4	20	N/A
Johnson & Johnson (JNJ)	63.42	64.28	1	22	2.0
TriPath Imaging (TPTH)	8.97	8.75	-2	N/A	N/A
Bayer (BAY)	33.98	32.65	-4	29	1.7
Beckman Coulter (BEC)	66.99	63.42	-5	19	0.8
Biosite (BSTE)	61.54	56.86	-8	22	N/A
Becton Dickinson (BDX)	56.80	52.33	-8	25	1.3
Gen-Probe (GPRO)	45.21	40.55	-10	44	N/A
Diagnostic Products (DP)	55.05	48.36	-12	23	0.5
Cytec (CYTC)	27.57	22.42	-19	28	N/A
Abaxis (ABAX)	14.49	11.15	-23	51	N/A
Exact Sciences (EXAS)	3.83	2.30	-40	N/A	N/A
Third Wave (TWTI)	8.60	4.24	-51	N/A	N/A
Unweighted Avg.			6		

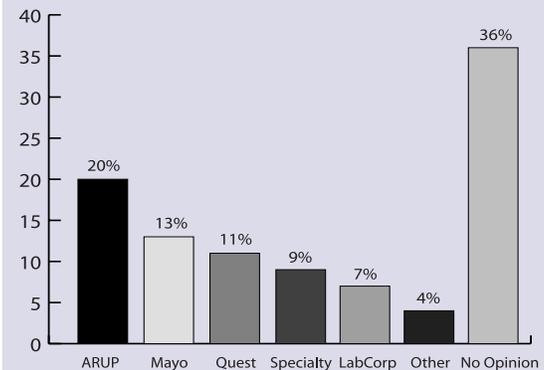
G-2 Insider

Which national reference lab offers the best value (i.e., service plus price)?

The answer is ARUP Laboratories, according to *Washington G-2 Reports' Second National Esoteric Testing Survey*. The survey was conducted in December 2004 and drew responses from lab directors and managers at 190 labs, including 144 hospital labs, 34 independent labs, and 12 physician office labs.

ARUP was selected by 20% of survey respondents, and Mayo Medical Laboratories was next with 13%. However, 36% of survey participants did not select any of the five major reference labs or cite any other particular reference lab as offering the best value. This large percentage suggests that many hospitals and independent labs cannot or do not make a clear distinction as to which reference lab offers the best value. 🏠

Which national esoteric testing lab offers the best value (i.e., service plus price)?



Company References

- Acu-Gen Biolabs
888-422-8436
- Aperio Technologies
760-539-1100
- Bacus Labs 630-424-9750
- Beckman Coulter
714-871-4848
- DMetrix 520-722-9510
- HemoSense 408-719-1393
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- Tessera 877-444-1484
- Trestle Holdings
310-473-7965

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FOR DETAILED INSIGHT into reference testing market and more results from our exclusive survey, be sure to listen in on G-2's national audio conference: *Holding the Line on Reference Testing Expenses: How to Play Hardball With the Big Labs* on Thursday, July 21, 2005, at 2:00 – 3:00pm. (Eastern Time). The audio conference will feature two speakers: Debbie Warren, director of business development at Chi Solutions Inc. and a 20-year veteran executive at LabCorp, and Glen McIver, managing director of laboratory and respiratory care services at Centra Health. For more info go to www.g2reports.com.

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