



Healthcare & Life Sciences Spotlight On: Diagnostics

Market Commentary

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Diagnostic testing is gaining value as a means to improve patient outcomes and lower healthcare costs through early detection, prevention, and treatment. M&A will continue to play an instrumental role in how companies navigate a rapidly changing marketplace, with active participation by strategic and private equity buyers alike.

Perspective

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Industry executives share insights on secular trends driving growth in diagnostics—rapid testing, movement from the lab to the point of care, personalized medicine—and future consolidation.

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Diagnostics

Healthcare reform is advancing tenets of preventive health, wellness, and personalized care, with diagnostics gaining value as a means to improve patient outcomes and lower healthcare costs through early detection, prevention, and treatment. Healthcare consumers are taking charge of their health, with technological advancements spurring demand for personalized medicine that relies on diagnostic testing.

The global diagnostics sector is a large and rapidly growing market, with secular trends driving significant change, notably the movement of testing from the lab to the point of care, the continued emergence of personalized medicine, and technological advancements allowing for miniaturization and optimization of testing. Ongoing pressures of a changing regulatory environment and reduced reimbursement are accelerating consolidation as participants look to build scale, access new technologies, and expand geographic reach through acquisition.

Physicians are increasingly reliant on in vitro diagnostic (IVD) testing to detect disease, assess risk, evaluate therapeutics, and monitor disease progression. Demand is being driven by changing demographics; increased physician, payer, and patient awareness; advances in research and technology; improved reimbursement policies; and adoption in developing markets. More employers, health plans, and payers are recognizing that IVD testing is a cost-effective means for improving quality of care and patient satisfaction.

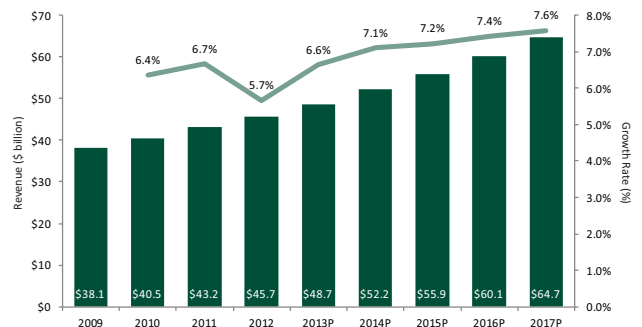
The addressable market for in vitro diagnostics is large, sized at \$45.7 billion globally, and growing at double the rate of the pharmaceutical industry. The industry is expected to reach \$64.7 billion by 2017, representing a CAGR of 7.2 percent over the forecast period. The United States is the largest geographic market for IVD products, estimated at \$15.5 billion in 2012 (34 percent of total), and is projected to grow at a CAGR of 5.6 percent to reach \$20.3 billion by 2017. Western Europe is the second largest market at an estimated \$13.8 billion (30 percent of total) in 2012 and is projected to reach \$20.1 billion by 2017—a CAGR of 7.8 percent. Combined the two account for over 60 percent of the global IVD market.¹

Key growth drivers:

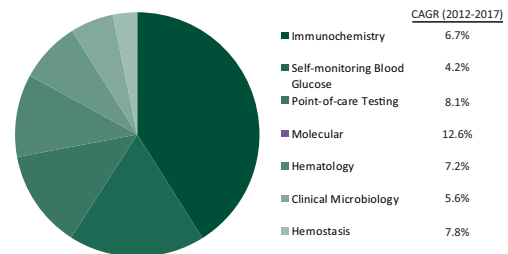
Changing demographics, namely aging of a global population in need of more and frequent diagnostic testing and the increasing incidence of lifestyle-related chronic diseases. Consumers are taking charge of their own health, which is spurring growth in point-of-care and genetic screening, which represent high-growth areas of diagnostic testing.

Global IVD Market

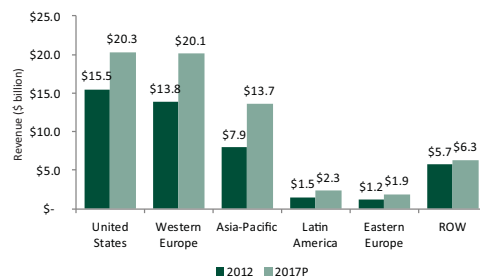
Total IVD Market, Global Revenue Forecast



Revenue by Segment, 2012



Revenue by Geography, Global Revenue Forecast

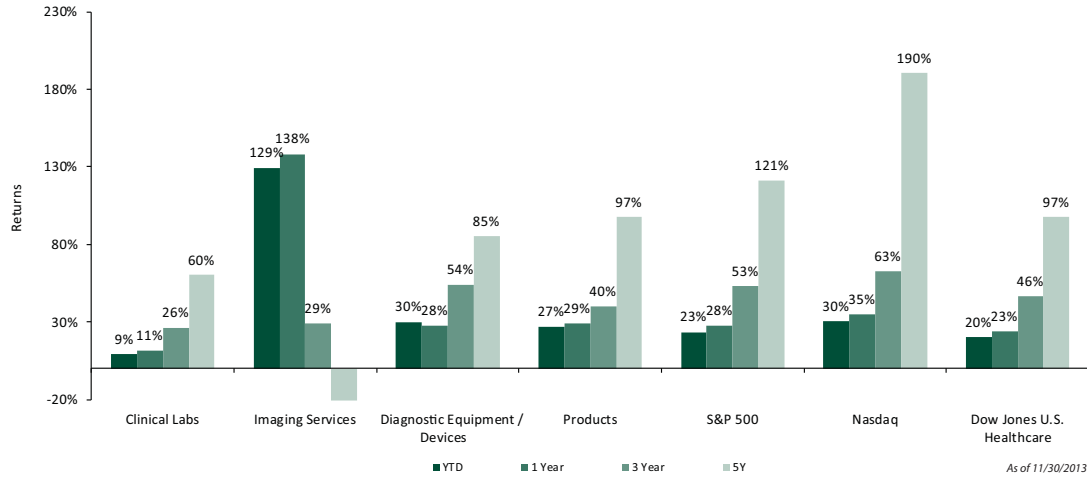


Source: "Analysis of the Global In Vitro Diagnostics Market, April 2013." Frost & Sullivan.

¹"Analysis of the Global In Vitro Diagnostics Market, April 2013." Frost & Sullivan. ²"Point of Care Diagnostic Testing World Markets, February 2012." TriMark Publications.

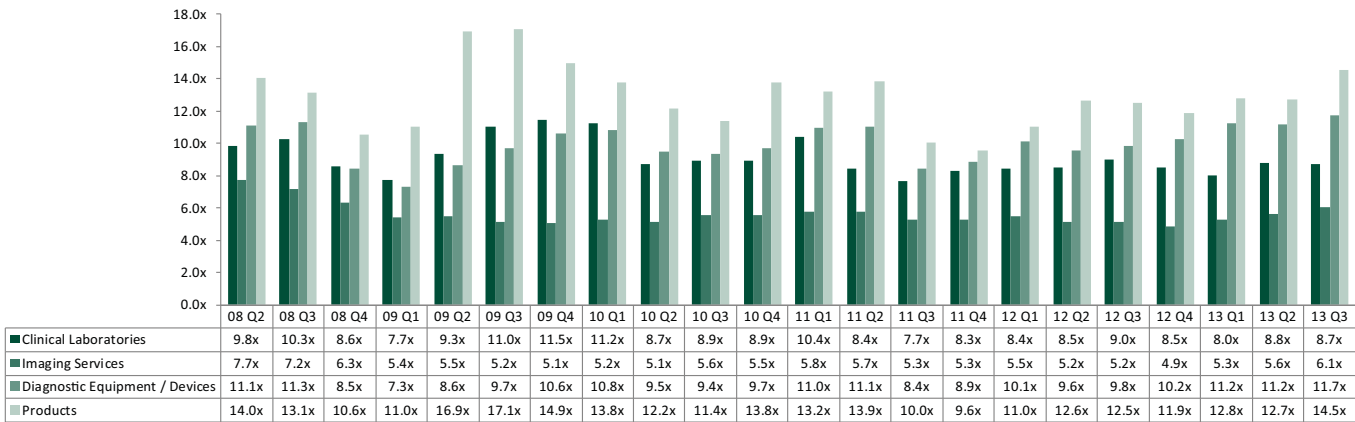


Index Performance

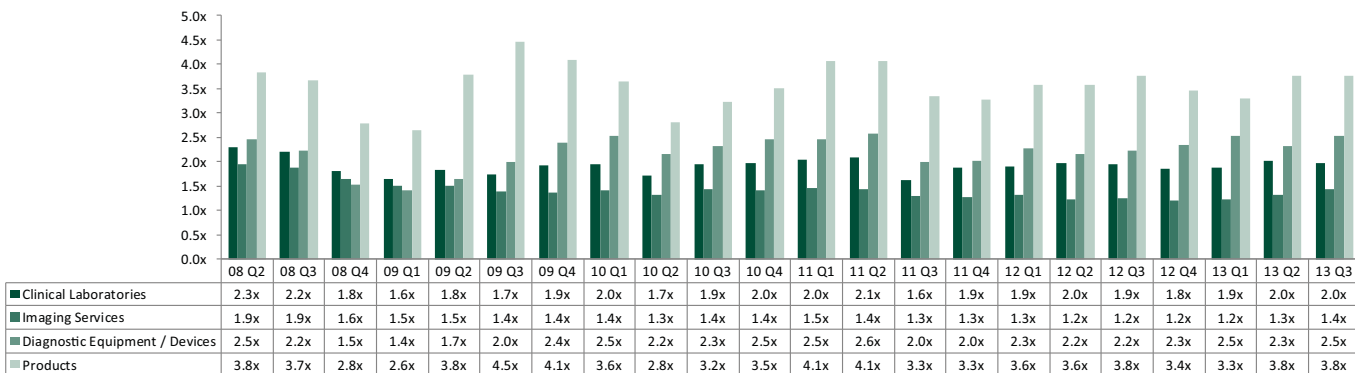


Industry Valuations

Enterprise Value / EBITDA



Enterprise Value / Revenue



SOURCE: S&P Capital IQ.



Diagnostics

Key growth drivers:

Introduction of new technologies. Point-of-care (POCT) and molecular diagnostic testing are two of the fastest growing IVD areas.

Point of care testing (POCT)

Increasingly, diagnostic testing is moving from the laboratory setting to the operating room, bedside, clinic, and home points of care. Expansion is being driven by broader test menus, more easily operable instruments, and advancements in connectivity and data management. Rapid testing methods, including POCT, can help to improve patient outcomes and lower overall healthcare costs by improving diagnosis times, minimizing time to therapeutic intervention.

Drivers of above-average growth for POCT devices include the global shift toward POCT from centralized laboratory testing, introduction of a variety of innovative technologies, an aging population, increased diabetes incidence, advancement of personalized medicine; and new market opportunities in emerging regions.³

The global point-of-care testing (POCT) market was estimated to be \$9.4 billion in 2011 (~20 percent of IVD products) and is expected to grow at a CAGR of 7.8 percent to \$15.9 billion in 2018. The United States is the largest geographic market for POCT devices, estimated at \$3.5 billion in 2011 (36.8 percent of total), and is expected to grow at a CAGR of 6.8 percent to \$5.5 billion in 2018. Industry-wide POCT sales are expected to grow 7 to 8 percent per year, with segments such as coagulation and cardiac marker testing growing faster.³

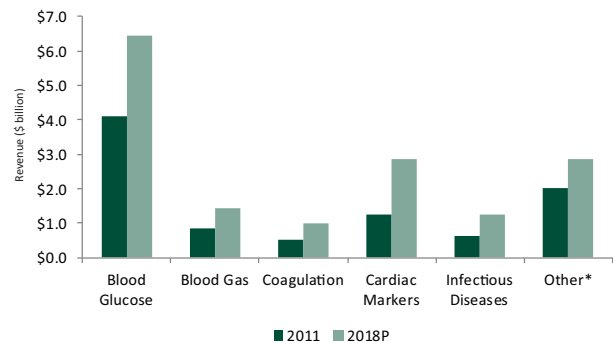
Despite efforts to increase market share by large industry players such as Abbott, LifeScan, and Alere, which have been cited as having doubled their product development efforts in POCT, the industry remains highly fragmented, leaving room for smaller players with innovative platforms and expanding test menus to compete.³

Molecular Diagnostics

Investment in molecular testing is furthering the discovery of genetic markers to aid in the early detection of disease and advancing personalized medicine. Molecular diagnostics offer better performance and shorter testing times than traditional testing methods and are making substantial inroads in the infectious disease market, genetics and pharmacogenetics products, and the emerging oncology market.³ Infectious disease applications are the largest

Point of Care Testing Market

Global Revenue Forecast



*Other segments include cholesterol, fecal occult blood testing, substance abuse, pregnancy tests, and urine analysis. Molecular Diagnostics identified as TBD with no estimates reported

Source: "Point of Care Diagnostic Testing World Markets, February 2012." TriMark Publications.

opportunity in molecular testing, according to Frost & Sullivan, but annual growth is slowing to less than 10 percent. Genetics, oncology, and pharmacogenomics are exhibiting 20 percent annual growth and are the next focus areas for market participants. Kalorama Information adds women's health and organ transplant testing to the growth areas in molecular tests.

Growth in emerging markets. Population growth, increased affluence and awareness, and expansion of healthcare infrastructure in developing markets is fueling robust growth in diagnostic testing. Emerging markets are projected to be the fastest growing IVD markets, led by the Asia-Pacific region which is forecasted to grow at a CAGR of 11.5 percent to reach \$13.7 billion in 2017—up from 7.9 billion in 2012. Large IVD players are looking to emerging markets to sustain growth. For example, high growth markets⁴ comprised 29 percent of Life Sciences & Diagnostics revenue for Danaher in 2012, up from 18 percent of revenue in 2007. In a geographical analysis of revenues for its Diagnostics business unit, Roche reported the largest gains in the Asia-Pacific and Latin America regions, both with 15 percent growth in 2012.⁵

Information management to improve speed and automation of testing. Integrating big data into product development and increasing connectivity of devices have been cited as growth drivers in testing platforms.⁶

³"Point of Care Diagnostic Testing World Markets, February 2012." TriMark Publications.

⁴China and Other Asia, Latin America, Middle East, Eastern Europe, Russia; Company filings and S&P Capital IQ.

⁵Company filings and website.

⁶Analysis of the Global In Vitro Diagnostics Market, April 2013." Frost & Sullivan.



Strategic M&A

The global IVD market is fragmented with the three largest OEMs controlling an estimated 45 percent of the market and the top ten accounting for over 80 percent market share.⁷ Beyond these ten, the market is comprised of hundreds of companies that make or develop competing or niche IVD devices.

M&A will continue to play an instrumental role in how IVD companies navigate a rapidly changing marketplace, driving an active deal market with growing participation by strategic and private equity buyers. Insiders speak to a buy versus build mindset among industry participants with acquisitions a means to more rapidly access new technologies and market segments; expand test menus, expand geographic reach; and increase market share.

A review of historical M&A activity identifies a number of high profile transactions, as well as steady flow in the smaller deal market. Transformational acquisitions have seen players gain significant scale.

Danaher's acquisition of Beckman Coulter in June 2011 catapulted its market position, adding the fifth largest IVD player with \$3.7 billion in sales, which it has subsequently grown through acquisition, including its purchase of IRIS International in October 2012, a leader in automated urinalysis testing systems and Hemocue in April 2013, expanding its point-of-care platform and providing an entry into the physician's office lab market. Life Sciences & Diagnostics (LS&D) is now Danaher's largest business segment accounting for roughly 36 percent of total company revenue, up from 14 percent in 2008, which has been achieved through a combination of organic investment and M&A. LS&D revenues have grown at a four-year CAGR of 44.6 percent, reaching \$6.5 billion in 2012.

In April 2013, Danaher, through its subsidiary Radiometer Medical, finalized its acquisition of HemoCue, the blood-testing systems unit of Quest Diagnostics, for \$300 million, valuing the business at approximately 2.6x revenue. Radiometer offers a broad range of products and solutions to the acute care setting within hospitals. Although operating as two separate companies, the alignment of HemoCue and Radiometer, which also specializes in blood analysis, enables Danaher to further penetrate physician office labs in high-growth emerging markets and expand HemoCue's margin.

Thermo Fisher Scientific announced in April 2013 it was acquiring Life Technologies in a \$15.8 billion transaction, valuing the business at approximately 4.1x revenue and

13.1x EBITDA. Thermo Fisher agreed to pay \$76.00 in cash per fully diluted common share, a \$13.6 billion total cash consideration, with the assumption of \$2.2 billion in debt. Life Technologies provides products and services to the scientific research and genetic analysis industry, along with applied markets. With the acquisition, Thermo Fisher will increase scale and extend its portfolio through Life's consumables products for genomics, and molecular and cell biology.

The transaction follows on a series of acquisitions including the purchase of One Lambda in September 2012, a global leader in transplant diagnostics; allergy and autoimmunity clinical diagnostics company Phadia in August 2011, and Germany-based BRAHMS in October 2009, whose broad laboratory and point-of-care diagnostics menu included a procalcitonin assay for early detection and monitoring of sepsis.

In December 2013, Covidien entered into a definitive agreement to acquire Given Imaging for approximately \$860 million, valuing the business at approximately 4.4x revenue. Given Imaging provides one of the broadest technology platforms for visualizing, diagnosing, and monitoring the digestive system, including its flagship PillCam, an innovative swallowed capsule endoscope. The acquisition provides Covidien additional scale and scope to serve the multibillion dollar global gastrointestinal market and supports its strategy to comprehensively address key global specialties and procedures.

In October 2013, LifeLabs completed its acquisition of Ontario-based CML Healthcare, a medical diagnostic laboratory services provider with 112 client care centers and 82 imaging centers across Ontario and British Columbia, for \$1.2 billion, valuing the business at approximately 3.5x revenue and 11.8x EBITDA. The acquisition combines two of Canada's largest medical diagnostic laboratory operators, and gives Lifelabs three complementary businesses: Hemostasis Reference Laboratory, focused on specialized coagulation testing and equipment calibration for international customers; CML Bioanalytics, a specialty laboratory providing customized clinical trial testing for the biotechnology and pharmaceuticals industries; and Rocky Mountain Analytical, headquartered in Calgary, Alberta, provides specialized testing for naturopaths and physicians practicing integrated medicine in Canada.

Insiders expect market participants will look to enter high-growth molecular and point-of-care diagnostic testing through acquisition. Hologic acquired Gen-Probe in August 2012 in a \$3.9 billion transaction, a leader in

⁷"Analysis of the Global In Vitro Diagnostics Market, April 2013." Frost & Sullivan.



Diagnostics

molecular diagnostics products and services. In September 2013, bioMérieux acquired Biofire Diagnostics (fka Idaho Technology) for \$450 million plus debt, valuing the business at approximately 6.4x revenue. BioFire markets molecular diagnostics systems and associated syndromic infectious disease assay panels. By further stimulating BioFire's sales and expanding its current assay portfolio, bioMérieux intends to strengthen its position in infectious disease diagnostics. In particular, BioFire's products will benefit from bioMérieux's commercial network, particularly in North America and Europe, as well as its automated reagent production capabilities, which will optimize manufacturing costs.

Alere has broadened its rapid diagnostics platform with a series of acquisitions including drug and toxicology screening companies AmMed, Amedica, eScreen in 2012 and Epocal in 2013, a provider of technologies that support blood gas and electrolyte testing at the point of care. Techne acquired Bionostics in 2013, a leader in control solutions utilized in point of care blood glucose and blood gas testing.

Private Equity Active

Historically acquisitive in the diagnostics space, private equity continues to play an active role in industry consolidation, and with an abundance of capital makes a compelling force for strategic buyers, creating a sense of urgency in the M&A markets. Investment activity has included a number of significant platform investments as well as add-on acquisitions, which have been an important avenue of growth for sponsors.

Private equity grabbed headlines this year, with The Blackstone Group, The Carlyle Group, and Kohlberg Kravis Roberts emerging as bidders for Life Technologies, announced in February 2013, which ultimately agreed to be acquired by Thermo Fisher Scientific in a transaction valued at \$15.8 billion.

Johnson & Johnson received bids for its Ortho-Clinical Diagnostics unit to be acquired by Danaher and The Blackstone Group or The Carlyle Group through a \$4.0 billion carve out, reported PitchBook in November 2013. Danaher and The Blackstone Group; CVC Capital Partners, and Leonard Green & Partners were said to be working on joint bids. The business manufactures blood screening equipment and laboratory blood tests for screening, diagnosing, monitoring and confirming diseases early such as thyroid function, reproductive endocrinology, cardiology, anemia, metabolism, oncology, and infectious diseases. In August 2011, TPG Biotech acquired Immucor, a competing

provider of blood testing products, in a transaction valued at \$1.6 billion. In March 2013, Immucor completed the purchase of the LIFECODES business from Hologic in a \$95 million transaction, expanding its specialty diagnostic footprint into transplantation diagnostics.

In November 2013, private equity firm Levine Leichtman Capital Partners partnered with management to acquire Genova Diagnostics from Nautic Partners and Ferrer Freeman & Company, an Asheville, North Carolina-based global specialty clinical laboratory that has pioneered a unique, systems-based approach to testing that supports the personalized diagnosis, treatment, and prevention of chronic disease. The company offers more than 125 specialized diagnostic assessments that cover digestive, metabolic, immunology, endocrinology, and other physiological areas. Genova currently serves more than 10,000 primary care physicians, specialists, and other healthcare providers

In October 2013, Kohlberg Kravis Roberts agreed to acquire Panasonic Healthcare Co., a subsidiary of Panasonic Corporation for approximately \$1.7 billion. Panasonic Healthcare is a comprehensive healthcare company focusing on three core businesses—In Vitro Diagnostics, Medicom, and Biomedical. Panasonic Healthcare's In Vitro Diagnostics business has a leading global market share in the manufacture and sale of blood glucose monitoring meters and sensors for diabetics. Its Medicom business has the top share in Japan in medical receipt computers, electronic health record systems, and other IT equipment for medical clinics, while its Biomedical business has a leading market share in Japan and overseas in biomedical laboratory equipment including CO2 incubators and ultra-low temperature freezers.

Private equity-backed Bioreclamation completed the add-on acquisition of Celsis-IVT in June 2013, merging the two companies to form Bioreclamation-IVT, offering a complete range of biological products including plasma, serum, tissue, and cellular material to the early stage drug discovery and development industry.

Private equity is expected to continue to play an increasing role in industry consolidation, with investors attracted to favorable secular trends and opportunities to achieve scale through geographic and technology expansion and automation. Strong players in niche market segments will be attractive targets.

Diagnostic Laboratories

Fragmented Industry Undergoing Consolidation

Consolidation is continuing, as national providers are attempting to partially offset margin pressure by obtaining scale and increase bargaining power with third-party payers. The \$48 billion industry in the United States is comprised of large national players like Quest Diagnostics and LabCorp, followed by smaller regional laboratories or facilities that specialize in anatomic pathology diagnostics or esoteric testing. The industry remains highly fragmented, with the four largest laboratory diagnostic service providers estimated to account for about 30 percent of revenue.⁸

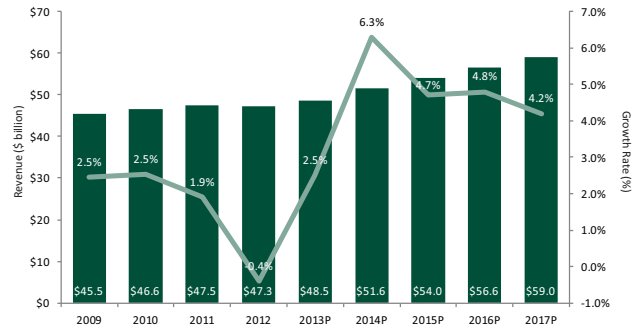
Consolidation in diagnostic laboratories is expected to continue, as M&A is used to gain access to new test technology and entry into faster-growing markets to expand product offerings and geographic reach. Large players historically have been acquisitive and are actively looking for targets.

Quest has completed a number of acquisitions, including in 2013 ConVerge Diagnostic Services from Water Street Healthcare Partners, a full-service regional laboratory providing clinical, cytology, and anatomic pathology testing services, in addition to a number of small clinical outreach laboratory facilities, including the acquisitions of Advanced Toxicology Network from Concentra, Dignity Health, and UMass Memorial Medical Center. In 2012, Quest acquired S.E.D. Medical Laboratories, a drugs-of-abuse testing laboratory. These buys follow a series of large acquisitions which included Celera and Athena Diagnostics in 2011 and AmeriPath in 2007.

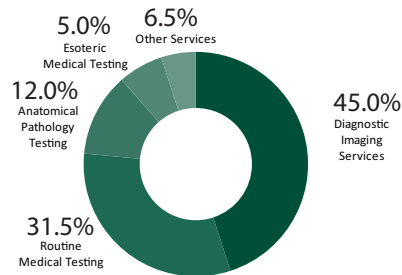
LabCorp has spent roughly \$2.2 billion on acquisitions since 2008,⁶ including its largest acquisition, the lab testing business of Genzyme Genetics, a provider of complex reproductive and oncology testing services, and Westcliff Medical Laboratories, both in 2011. LabCorp expanded its specialty toxicology and esoteric testing capabilities with the purchase of MEDTOX in July 2012. Acquisitions in 2013 include Impact Genetics and Muir Labs, the clinical outreach lab business of John Muir Health, and Flatiron Health, a healthcare IT provider serving cancer care providers.

Diagnostic Laboratories in the U.S.

Revenue Forecast



Services Segmentation, 2013



Source: "Diagnostic & Medical Laboratories in the US, August 2013." IBISWorld.

⁸"Diagnostic & Medical Laboratories in the US, August 2013." IBISWorld.



Spotlight On:

Diagnostics

Decreasing Reimbursement Environment

Diagnostic laboratories are looking to increase volume and diversify services to offset declining reimbursement:

- As of January 1, 2013, the technical component of surgical pathology procedures decreased by 52 percent from the 2012 rate. At the same time, the professional component increased by 2 percent, leading to a net surgical pathology decrease of 33 percent.
- CMS' 2014 proposed Physician Fee Schedule (PFS) and Clinical Laboratory Fee Schedule (CLFS) include deep reimbursement cuts to independent pathology laboratories, including a 50 percent reduction in pathologist physician services.
- CMS will evaluate all 1,250 tests on the CLFS over the next five years, with the first rate adjustments in 2015.

Private Equity Fueling National Consolidation

Private equity investments range from smaller specialized laboratories to national diversified laboratories. Sponsors have pursued a buy and build strategy with platform investments made in larger, national or regional laboratories and subsequent smaller add-on acquisitions to build scale. Acquisitive Aurora Diagnostics has completed nine add-on acquisitions under private equity ownership.

Selected Private Equity Platforms in Diagnostic Laboratories

Company	Investor	Company	Investor
	November 2013	Formerly Doctors Laboratory, Inc	December 2009
	November 2011	Physician Centered. Patient Focused.	December 2009
	October 2011	Welcome to Excellence	October 2009
	September 2011		May 2008
	June 2011		December 2007
	December 2009		
	October 2006		

Source: PitchBook



Case Studies in Value Creation

BGL Client:

Results:

BIONOSTICS

— a portfolio company of —

HARWOOD CAPITAL LLP

— acquired by —

TECHNE CORPORATION

R&D SYSTEMS

BGL BROWN GIBBONS LANG & COMPANY

Bionostics Holdings Limited

Bionostics is a global leader in the development, manufacture, and distribution of control solutions that verify the proper operation of in vitro diagnostic (IVD) devices primarily utilized in point of care blood glucose and blood gas testing. Its products are developed in close coordination with IVD OEMs based on device-specific formulations proprietary to the company that require FDA 510(k) approval.

Completed the sale to Techne Corporation at a highly favorable valuation for Bionostics shareholders. Bionostics and Techne’s Hematology Division were combined and now operate under a new Clinical Controls Division of R&D Systems.

BGL’s Role in Value Creation

- BGL was engaged to market the company to a broad financial and strategic buyer audience, receiving multiple bids and effectively managing a highly competitive sale process, ultimately completing the sale to a strategic buyer at a highly favorable valuation for Bionostics shareholders.

Celsis International Ltd.

— has sold —

Celsis | In Vitro Technologies

to

Bioreclamation
The complete resource for all biologicals

BGL BROWN GIBBONS LANG & COMPANY

Celsis International Limited

Celsis IVT, a former division of Celsis International Ltd., is a leading global provider of specialized in vitro products for the study of metabolism, drug-drug interactions, and toxicity in drug discovery and development. The company maintains the world’s largest inventory of cryopreserved hepatocytes, which in concert with the company’s patented LiverPool™ technology, is an essential tool supporting ADME-Toxicity research.

BGL completed the divestiture of Celsis IVT to Bioreclamation, Inc., a portfolio company of Thompson Street Capital Partners. Upon closing of the transaction, the two portfolio holdings were merged to create BioreclamationIVT, creating a one-stop shop for a complete range of biological tools utilized to pursue new drug discovery and development.

BGL’s Role in Value Creation

- Generated broad interest through a competitive sale process which involved contacting strategic and financial buyers.
- By effectively positioning the company to accentuate its strong and unique product portfolio, BGL was able to garner attractive bids from both strategic and financial buyers, ultimately completing the sale to a strategic buyer which drove value in the transaction.



Insider Perspective

BIONOSTICS

Bionostics is a global leader in the development, manufacture, and distribution of control solutions that verify the proper operation of in vitro diagnostic (IVD) devices primarily utilized in point of care blood glucose and blood gas testing. Former Bionostics CEO Michael Thomas shared his insights on market trends including the movement of diagnostic testing from the lab to the point of care.

What have been/what will be the key drivers of growth for your business?

The movement of diagnostics from the central laboratory to point of care and ultimately to the patients themselves. Generally speaking, diagnostics are becoming simplified to the point where they will be forced to the patient for a number of reasons. Patients want more control and they want more information about their own health. As we ultimately move toward a single payer reimbursement system with the Affordable Care Act, the third-party payers are going to be looking for less expensive, more readily available diagnostics, meaning not only do they want effective diagnostics but they want the information readily at hand for the physician to make real time therapeutic decisions. Everything is going to be outcome-based. That is what we see driving our business.

Critical care blood gases are now being done in the same room with the patient instead of sending vials of blood to the central laboratory from an ER. Blood coagulation is being done in the operating theater right now. Intensive care units do all of their own blood work rather than sending it to a central laboratory because they want to be able to adjust their therapies as needed based upon changes in the patient. The more difficult diagnostic tests are being done with much greater frequency and almost exclusively now in major medical centers in the patient area rather than doing them in a central laboratory.

What are some of the differentiating characteristics of your business?

We develop and manufacture control solutions that verify the proper functioning and calibration of IVD devices primarily utilized in point of care testing. It is a niche market and one that we dominate. We have anywhere from 75 to 85 percent of the market in those segments that we participate.

What will be the differentiating characteristics of businesses within the industry?

It will be the companies who are thinking not about what has made diagnostic companies successful today but are thinking about what diagnostics are going to mean 20 years from now. Among them, I think Roche Diagnostics is probably the largest player. Those that are thinking creatively and are really willing to reinvent themselves are the ones that are going to be very successful. A number of the large companies are going to fall by the wayside because they are going to be completely unwilling to change the way that they view the marketplace.

What new products/technologies are you seeing within the industry?

Everyone recognizes molecular diagnostics will be the most effective and efficient longer-term; however, it is not going to be in the next five years. I don't know that they will be the most frequently used. There are very specific types of disease entities that will lend themselves to molecular diagnostics. For example, for infectious diseases we have all kinds of blood tests right now for antibodies and antigens. There are others that don't lend themselves to molecular diagnostic testing—blood glucose monitoring is an example.

There is testing going on in hospitals, medical centers, and in academia right now, but nobody is buying or selling molecular diagnostic tests that are done on a routine basis to make therapeutic decisions, and the reason is they are very expensive. They want to find where it is that they really need to use them, where their benefit really lies.

The large IVD players are working with startup companies that have very good science. Some are trying to develop molecular diagnostics internally. The ones who are looking outside are having a much greater success than the ones who are trying to develop it internally. I think you will continue to see that type of movement going forward.

Everybody is talking about companion diagnostics making a resurgence. There are companies interested in biotherapeutics that are looking for companion diagnostics. It is really difficult for these big pharma companies to accept that diagnostics is necessary and to try to figure out how to use it. The reality is they are really more interested in the therapy. The diagnosis will ultimately be made and the therapeutic is what is going to make all the money.



What do you see as the biggest drivers of M&A activity?

We are moving toward outcome-based reimbursement which means everybody that is in the mix, from the first diagnosis to the final outpatient therapy, is going to be hit with cost containment really hard. As a consequence, you need to think about what is really going to be of value long-term to the provider. What is going to be of value is information. They are going to want all the information that they can possibly get on a patient long before any diagnosis is made, and then compare that data to the treatment outcomes of patients (thousands across the country) with similar medical backgrounds to determine the best course of therapy. That is the kind of information that people are going to be willing to pay for. Diagnostics can provide that information just by accumulating and aggregating all of the data that is already available.

What you are selling to the organization, to the third party payer, is the data not the test itself. Diagnostics companies won't be so worried about whether they have a new instrument or a different type of strip technology or type of testing modality, it is going to be about, can I provide as much information as is possible to the treating physician so that they can make a good therapeutic choice.

Are you seeing more of a buy or build strategy from market participants?

Most people recognize that it is always easier, cheaper, and faster to buy than it is to build. There is no question it is a buy versus build mentality in the marketplace right now.



Celsis is a leading innovator in rapid microbial testing, serving as a partner to companies in the home; personal care; food and beverage; pharmaceuticals and medical devices; and chemical industries. Celsis' Rapid Detection systems, with installations in more than 60 countries, have been helping companies screen products for microbial contamination for 20 years. Celsis CEO Jay LeCoque shares his insights on market trends and the shift toward rapid testing in the pharmaceutical industry.

What have been/what will be the key drivers of growth for your business?

There is an increasing awareness of the benefits of rapid testing, encouraging but belatedly, in the pharmaceutical industry. Large drug sponsors are being encouraged by regulatory bodies to adopt rapid methods knowing that testing more quickly reduces the drug makers' manufacturing cycle times, which is beneficial for all parties involved.

A 14-day sterility test is mandated by the FDA for injectables and sterile products. Celsis has continually worked with customers to reduce the time needed for sterility testing, which has reduced costs.

Contract laboratories and drug sponsors alike are looking for partners to validate rapid methods for contamination testing in the pharmaceutical industry. That is a big trend forward.

Celsis and Eurofins Lancaster Labs, one of the premier contract labs in the world, just formed a partnership to have Lancaster provide the validation of Celsis rapid methods for its pharmaceutical customer base. Currently we are active in the U.S. and Europe and will look to expand into Asia.

The home and beauty/personal care industries have already been using rapid methods, but what we are seeing is a broadening of the customer base, especially into the pharmaceutical industry, as more companies understand the value of going to a more rapid test.

What are some of the differentiating characteristics of your business?

What Celsis did more effectively early on was to look at rapid testing from an overall financial benefit perspective (rather than a cost per test increase to the lab) to companies that would implement a rapid methods system. If you look at your supply chain, manufacturing cycle time, and reductions in inventory, there is a huge benefit to move to Celsis, and the cost per test increase in the lab budget is more than offset by the gains in the manufacturing side.

What new products/technologies are you seeing within the industry?

There is definitely a move toward molecular in our business, and we are certainly keeping tabs on what that is going to mean. We don't see it as a threat to our base screening business. Our technology screens products for any type of microbial contamination. When you get into molecular assays, you have to be very specific on what type of microbe it is. Therefore, it is almost more of a specific identification technology rather than a broad screen. Right now, it is not going to replace any technology that we have because to develop a molecular assay that would be a broad screen for all microorganisms (bacteria, yeast and mold) would be incredibly difficult from a technical perspective as well as very expensive to the end user.

What do you see as the biggest drivers of M&A activity?

We are seeing consolidation in our space. The large IVD players are all seeing the trend toward rapid detection and they want to develop or acquire capabilities and grow it. If it takes off the way we believe it will, they are going to want to have that business in pharma.

Are you seeing more of a buy or build strategy from market participants?

I think the broader industry is more of a buy. Increasingly, the large players are looking to buy smaller diagnostics companies that have a unique technology advantage. I don't see a lot of creativity coming out of the large players in our space. Generally, they are buying up small companies and folding them into their sales and distribution networks hoping they will be able to sell and have shown varying degrees of success.

Private equity is very involved in acquisitions, large and small. I think private equity is going to have a big part of the continued evolution of the business.

What trends have you seen in the regulatory or pricing environment for your product/service offerings?

The FDA is encouraging big pharma to develop rapid methods. That is a watershed event occurring right now because previously they were either hands off or in some cases not supportive. This is going to be important for the development of the market going forward.



Insider Perspective

& Ampersand

Ampersand Capital Partners is a middle market private equity firm focused on the healthcare sector. David Anderson shares his insights on portfolio investments in the diagnostics sector, market trends, and future consolidation.

Please comment on how you came to the decision to target an investment in the diagnostics industry.

When we looked at the diagnostics industry, specifically laboratory services, we were looking for businesses that had a heavy operational workflow to them where industrial processes could be applied to extract efficiencies, shorten timelines, and reduce costs and therefore drive the economics. Our origination was very much about looking at the industry and identifying where inefficiencies exist to apply industrial learning and create a business that has considerable value, not necessarily by changing the science but by changing the way the science is delivered.

With the traditional anatomic pathology (AP) model, you are geographically constrained which dictates more of a regional approach to the market. Therefore, you need to offer a broad range of services, so you see many of the players participating in all of the different subspecialties, as well as adding molecular tests and clinical services. To expand the business, the larger players acquire satellite offices so they have multiple labs strategically located around the larger metropolitan areas, gaining operational synergies and realizing savings by centralizing purchasing and other cost efficiencies. They can be attractive businesses. We might consider investing in a core AP business with a profitable operating history, looking at what additional services or offerings we could add on, particularly in molecular pathology.

We invested in an anatomical pathology lab, Bako Pathology Services, in 2011. Bako services the podiatrist market, so we've taken a pathology lab business and refocused it in a subspecialty that is underserved rather than taken a generalist AP lab business and try to maintain and grow market share by adding additional services. We are looking at what molecular tests might be interesting to podiatrists, as well as other services that we can provide. We completed an acquisition of a physician dispensed product line that we are now distributing to podiatrists. We might look at other prescription-based products and expand Bako into more of a podiatry company than solely a diagnostics company.

What impact has Healthcare Reform had on your business?

Reimbursement cuts changed the landscape completely in laboratory services, with more than a 50 percent reduction in our major code. Our pathology business has experienced the same cut, but because we have been able to diversify outside of the base reimbursed business, we expect to weather this storm better than some of the smaller players.

What new products/technologies are you seeing within the industry?

New molecular tests are slowly replacing certain areas of anatomic pathology (AP) or improving or adding accuracy. However, the fundamental process of performing AP is not likely to be displaced overnight. You are not going to have a wholesale replacement of that entire sector.

What has been your approach to technology in new and existing investments?

We like technologies that are proven and performing where we can leverage our operational expertise to increase efficiencies and improve processes. Two of our portfolio companies, Dynex Technologies and Magellan Diagnostics, are providers of equipment and consumables where technology is critical, yet industrial thinking can be applied to the actual manufacturing and cost control. In the case of Magellan, it is a point of care blood test for lead so the degree of technical complexity is low. It is a very mature, efficient market, and the technology is driving turnaround time and accuracy. What is complicated is understanding the end markets and where there is a need for a low-cost, easy-to-use system that produces real-time results. The test is typically state-mandated to address a very specific market need and patient population. We liked that approach and market focus because it was very different. It is defensible. It is very important in emerging markets; China, India, and Russia represent high growth areas right now for Magellan.

Another portfolio investment, Viracor-IBT Laboratories, is a diagnostics company that is focused on a niche target market—post-transplant testing. Viracor is continually evaluating new technologies that are being introduced for specific tests as a way to expand their offering. The



What has been your approach to technology in new and existing investments? (cont.)

difference is Viracor is not reliant on one test; it is a service lab that performs hundreds of different types of tests. The value proposition is being a transplant-focused service lab, not a provider of the diagnostic test. They are also looking at getting into pre-transplant testing.

We are not investing in the next cancer diagnostic test and hoping that Quest and LabCorp will adopt it and it's going to change the face of the market. We're much more service focused, and if we desire to acquire a technology or a new potential test as an add-on for an existing portfolio investment, we will.

What do you see as the biggest drivers of M&A activity?

M&A strategies have been focused on capturing therapeutic areas, adding new tests or equipment, and expanding geographic reach. The large players are very active in the market as they always have been for the right technologies and the right service offerings.

We believe there is going to be a rapid consolidation of the physician office-based labs and the smaller, more regional focused, undifferentiated labs. It would be difficult to market a pure play AP company today unless it had something particularly differentiating. A profitable molecular pathology business, provided it is high service and has a strong customer base, might be more attractive because molecular tests tend to be higher margin.

We believe that the bigger value proposition is to build a reputation in a subspecialty. What is going to be attractive in the future is targeting a specific population and being able to provide either higher margin services or products utilizing pathology as the entry to that particular subspecialty.

There was obviously a wave of M&A activity when the reimbursement cuts came. Those cuts had a major impact on the top and bottom line, which, from a valuation standpoint, has obviously changed dollar values. It hasn't changed the strategic value. Are acquirers still paying premium multiples for a strong pathology lab? Yes. They will pay those multiples for a business that is differentiated and has sustainability in both the sample volume growth and EBITDA—a business that can weather any reimbursement changes and augment margins with other products and services. Those are the companies that will likely be acquired at the higher end of the multiple range.

What are your future acquisition interests?

We have to have businesses that are financially stable and performing well in markets where we feel we can bring value to the table. A successful investment is built on many things but it starts with intellectual insight, interest, and curiosity about a technology and/or segment.

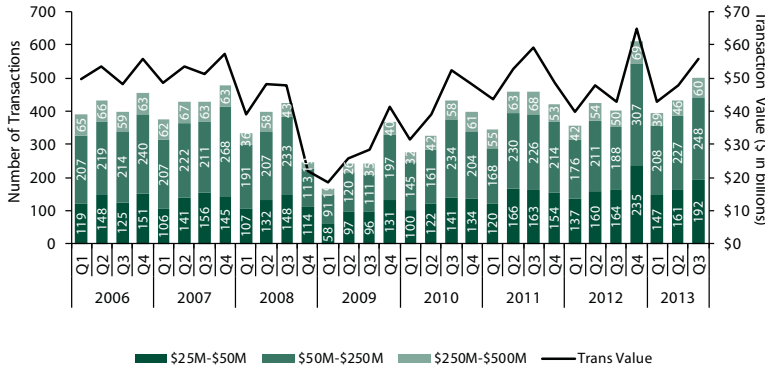
We look at what makes our businesses attractive to the consolidators: strong financial performance; minimal risk, whether it is FDA risk, adoption risk, or reimbursement risk; and diversification in the product or service area. For add-ons we include all of the above and will also look to expand geographically. Viracor has done a great job of diversifying its service offerings to become the “go-to” lab for post-transplant. Bako is the go-to lab for podiatry pathology. Our view is you either diversify and target a market segment and own it, or you have a technology that owns a very narrow market segment and therefore would make an attractive tuck-in acquisition.



Healthcare & Life Sciences Insider Mergers & Acquisitions Overall M&A Activity 2006 - Current

Mergers & Acquisitions Activity

Middle Market M&A Activity

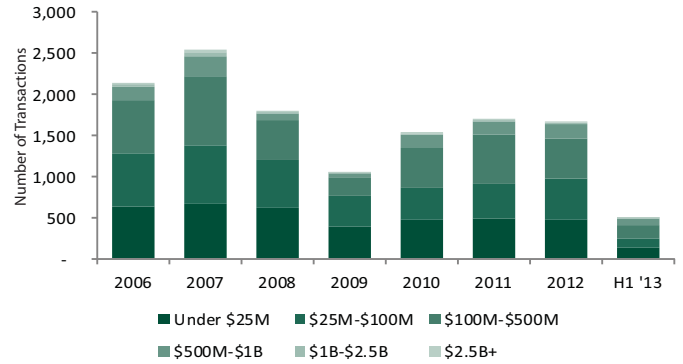


Based on announced deals, where the primary location of the target is in the United States. Middle market enterprise values between \$25 million and \$500 million.

SOURCE: S&P Capital IQ.

Private Equity Transaction Activity

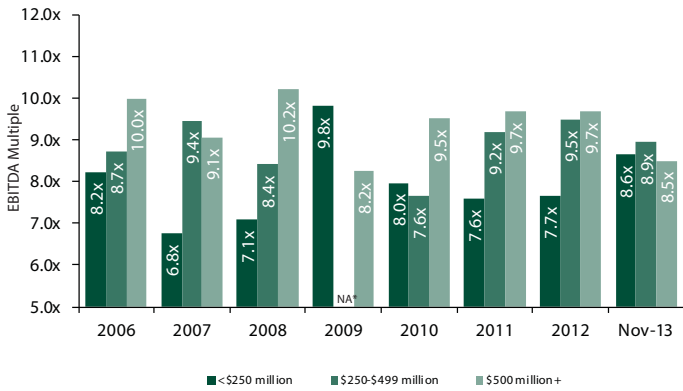
Transaction Count by Deal Size



SOURCE: PitchBook.

Trends in Valuation

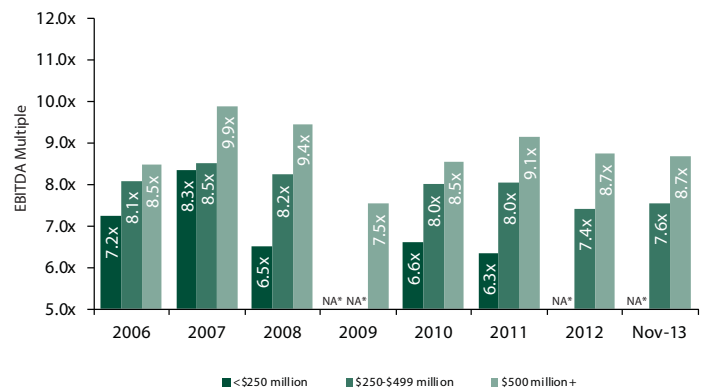
Transactions with Strategic Buyers



*NOTE: Data not reported due to limited number of observations for period.

SOURCE: Standard & Pooors LCD.

Transactions with Financial Buyers

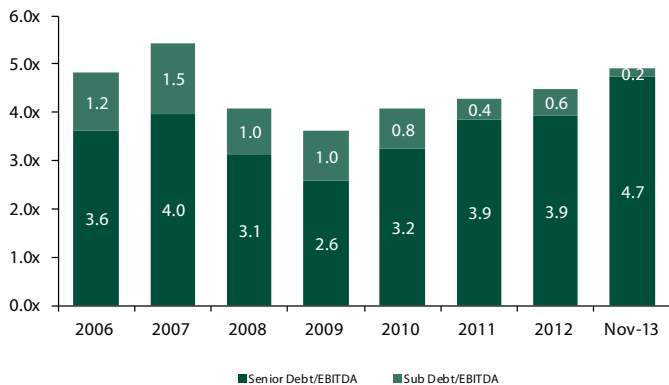


*NOTE: Data not reported due to limited number of observations for period.

SOURCE: Standard & Pooors LCD.

Acquisition Financing Trends

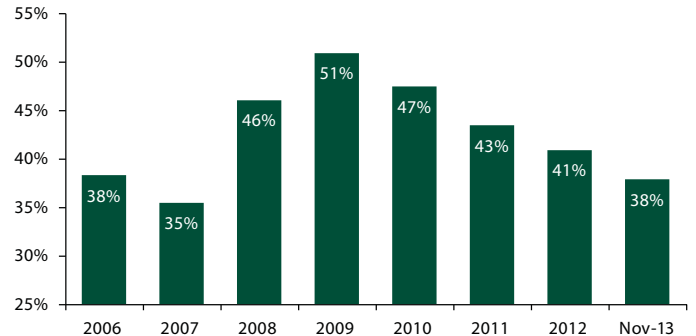
Leverage



Middle market enterprise values between \$25 million and \$500 million.

SOURCE: Standard & Pooors LCD.

Equity Contribution



Middle market enterprise values between \$25 million and \$500 million.

SOURCE: Standard & Pooors LCD.



Healthcare & Life Sciences Insider

Mergers & Acquisitions

Healthcare M&A Activity

NOTABLE ACTIVITY IN PROVIDERS

In November 2013, **Newcastle Investment Corp.** (NYSE: NCT), acquired a **52-property portfolio of senior living communities** from **Holiday Retirement** for \$1.0 billion. The acquired properties will continue to manage the communities, which have been split into two identical triple net master leases. The portfolio was 91% occupied on average as of the end of the third quarter 2013. The 52-property portfolio includes communities located across 24 states with a “complementary footprint” to the REIT’s existing portfolio.

Transaction Multiples: ~Valuation multiples undisclosed

In October 2013, **Tenet Healthcare Corporation** (NYSE: THC), acquired **Vanguard Health System, Inc.** (NYSE: VHS), an operator of general acute care and specialty hospitals, and outpatient facilities, for \$4.3 billion. Vanguard owns and operates 28 acute care hospitals with 7,081 licensed beds. The combined entity will now operate. Tenet now operates 77 acute care hospitals, 173 outpatient centers, five health plans and six accountable care.

Transaction Multiples: ~0.7x Revenue; 8.2x EBITDA

In July 2013, **TPG Capital, L.P.**, a U.S.-based private equity firm, completed its \$449 million acquisition of **Assisted Living Concepts Inc.** (NYSE:ALC), an operator of assisted living residences. Founded in 1994 and headquartered in Menomonee, Wisconsin, Assisted Living Concepts operates more than 200 assisted living residences comprising more than 9,000 resident units in 19 states. Under the terms of the agreement, Assisted Living stockholders will receive \$12 for each share of Class A common stock and Class B common stock will receive \$12.90 per share.

Transaction Multiples: ~2.0x Revenue; 11.1x EBITDA

In May 2013, **Catholic Health Initiatives** (CHI) announced the signing of an agreement to acquire **St. Luke’s Episcopal Health System Corporation** from **The Episcopal Diocese of Texas** for \$1.0 billion in cash. As part of the agreement, CHI will issue a \$260 million promissory note to the Episcopal Health Foundation, payable over seven years, along with an additional \$1.0 billion for future investments in St. Luke’s over a seven-year period. St. Luke’s hospitals and affiliated organizations will be added to CHI’s existing system of 76 hospitals and 40 skilled nursing, assisted living and residential living facilities. Catholic Health Initiatives became the sole member of the newly-named St. Luke’s Health System.

Transaction Multiples: ~Valuation multiples undisclosed

NOTABLE ACTIVITY IN LIFE SCIENCES & MEDICAL PRODUCTS

In November 2013, **CareFusion Corp.** (NYSE: CFN), agreed to acquire Vital Signs from General Electric Co. (NYSE: GE) for \$500 million. Vital Signs is a respiratory care and anesthesiology medicine manufacturer. The transaction will add global scale and new anesthesiology products to CareFusion’s portfolio, as it looks to transform its specialty disposables distribution business to include a greater percentage of products manufactured in-house, a move that is expected to improve margins.

Transaction Multiples: ~ Valuation multiples undisclosed

In September 2013, **Stryker Corporation** (NYSE:SYK), signed a definitive agreement to acquire **MAKO Surgical Corp.** (NASDAQ: MAKO) for approximately \$1.7 billion. MAKO makes a robotic arm designed to help surgeons more precisely implant replacement knees and hips. The company’s product line is complementary to Stryker’s existing line of replacement hip and knee joints and could appeal to hospitals looking to improve procedural efficiency.

Transaction Multiples: ~ 13.2x Revenue

In May 2013, **Valeant Pharmaceuticals International, Inc.** (NYSE: VRX) entered into a definitive agreement to acquire **Bausch + Lomb Holdings Incorporated** from private equity firm **Warburg Pincus LLC** for \$8.7 billion in total cash consideration. Approximately \$4.2 billion of the total will be used to repay Bausch +Lomb’s outstanding debt. Bausch + Lomb is a leading eye health company operating in three segments: pharmaceutical, vision care, and surgical. Bausch + Lomb Holdings will retain its name, operating as a division of Valeant Pharmaceuticals, creating a global leader in eye health in line with Valeant’s strategy to capitalize the growing eye health trends.

Transaction Multiples: ~2.8x Revenue; 14.6x EBITDA

In April 2013, **Argon Medical Devices, Inc.**, a portfolio company of private equity firm **RoundTable Healthcare Partners**, acquired the **interventional products business** of **Angiotech Pharmaceuticals, Inc.** for \$362.5 million. With the acquisition, Argon expands its existing portfolio of interventional products which includes disposable and reusable biopsy products for cancer diagnosis, drainage catheter, and vascular interventional products. Argon also acquired three manufacturing facilities in Illinois, Florida, and New York as part of the transaction.

Transaction Multiples: ~3.6x Revenues

SOURCE: S&P Capital IQ, Levin Associates, Equity Research, and Company Filings.



Healthcare & Life Sciences Insider Mergers & Acquisitions Healthcare M&A Activity

NOTABLE ACTIVITY IN OUTSOURCED SERVICES/ INFORMATICS

In November 2013, **Vista Equity Partners**, private equity backer of **Vitera Healthcare Solutions**, completed its purchase of 100 percent of the outstanding common stock of **Greenway Medical Technologies** (NYSE: GWAY), for \$20.35 per share in a transaction valued at approximately \$644 million. The transaction creates a leader in healthcare information technology and services, offering a comprehensive set of solutions to improve clinical and financial outcomes in healthcare enterprises, ambulatory practices, public health, retail, and other clinics nationwide. The combined company, operating under the Greenway brand, will serve nearly 13,000 medical organizations and 100,000 providers.

Transaction Multiples: ~4.7x Revenue; EBITDA Multiple Not Meaningful

In October 2013, **McKesson Corporation** (NYSE: MCK) agreed to acquire a 50.01% stake in Germany's **Celesio AG** (DB: CLS1), a leading international wholesale and retail company and provider of logistics and services to the pharmaceutical and healthcare sectors, for \$5.4 billion. Celesio operates 2,200 pharmacies across Europe. For McKesson, an alliance with Celesio creates enormous scale and boosts its purchasing power, particularly when negotiating with generic-drug manufacturers and continues along the industry trend of international alliances in a converging global supply chain of prescription medications.

Transaction Multiples: ~0.3x Revenue; ~15.4x EBITDA

In March 2013, **Cardinal Health, Inc.** (NYSE: CAH) closed its acquisition with **AssuraMed Holding, Inc.** for \$2.07 billion. Founded in 2007 and headquartered in Twinsburg, Ohio, AssuraMed is the leading direct mail order provider of home-delivered medical supply products for chronic disease patients in the United States. The acquisition enables Cardinal Health to serve the growing population of aging and chronically ill as care moves increasingly to the home. After the transaction is complete, Cardinal Health will supply the home health care channel with product lines including ostomy, diabetes, insulin therapy, urological, wound care and incontinence.

Transaction Multiples: ~Valuation multiples undisclosed

In March 2013, private equity firm **JLL Partners, Inc.** completed its tender offer to acquire **BioClinica, Inc.** (NASDAQ: BIOC), a leading provider of clinical trial management services, for \$105 million. At the same time, JLL also completed the acquisition of **CoreLab Partners, Inc.**, a medical imaging and cardiac safety services provider, for an undisclosed amount. BioClinica and CoreLab will merge, operating under the name BioClinica, creating an leader in imaging and core lab services while expanding BioClinica's customer support offerings to better serve pharmaceutical, biotechnological, and medical device development.

Transaction Multiples: ~1.3x Revenue; 10.2x EBITDA

In March 2013, **Allscripts Healthcare Solutions, Inc.** completed the acquisitions of **dbMotion, Ltd.** for \$235 million and **Jardogg LLC** for an undisclosed amount. dbMotion provides a strategic platform for care coordination and population health management that integrates discrete patient data from diverse care settings into a single patient record. The Jardogg patient platform enables patients to actively participate in their care, critical for at-risk populations, and empowers consumers with the solution they need to monitor and optimize health status. These acquisitions advance Allscripts' strategy to offer full integration of heterogeneous systems across the care continuum.

Transaction Multiples: ~Valuation multiples undisclosed

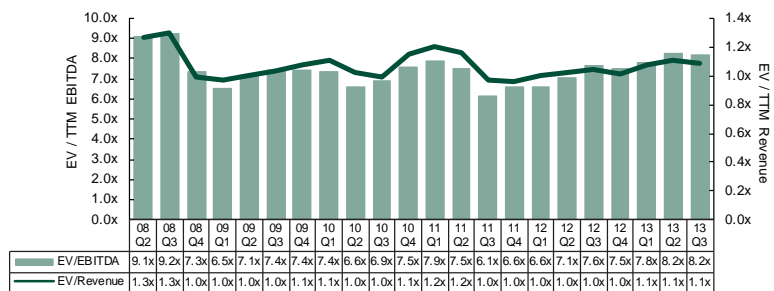
NOTABLE ACTIVITY IN PAYERS

In October 2013, **Catamaran Corp.** (NASDAQ: CTRX), completed its acquisition of **RESTAT, LLC**, for \$410 million. RESTAT provides prescription claim processing and PBM services for self-funded employers, third-party administrators, workers' compensation plans, health plans, and unions. The acquisition adds scale to Catamaran, one of the industry's fastest-growing pharmacy benefits manager, and gives Catamaran access RESTAT's client base.

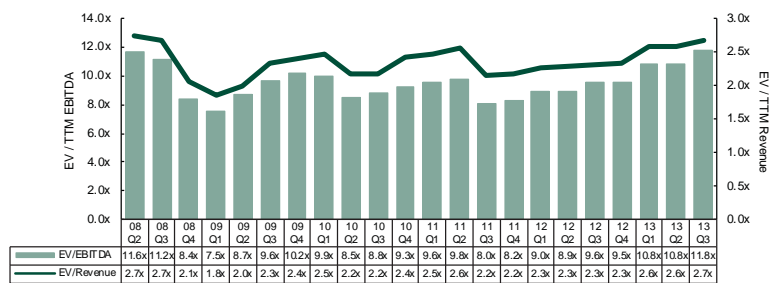
Transaction Multiples: ~ Valuation multiples undisclosed

Relative Valuation Trends

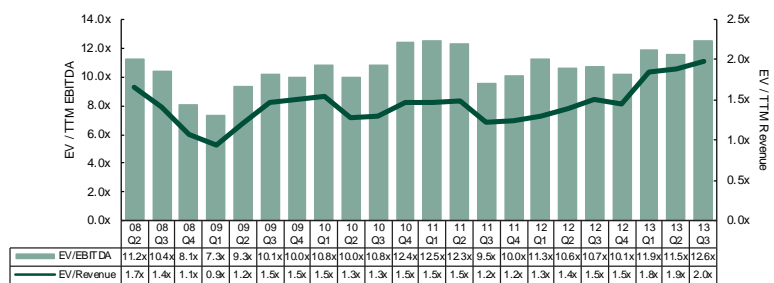
Providers



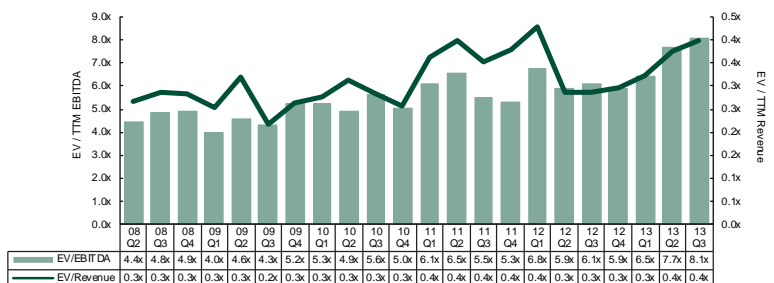
Medical & Life Science Products



Outsourced Services & Informatics



Payers



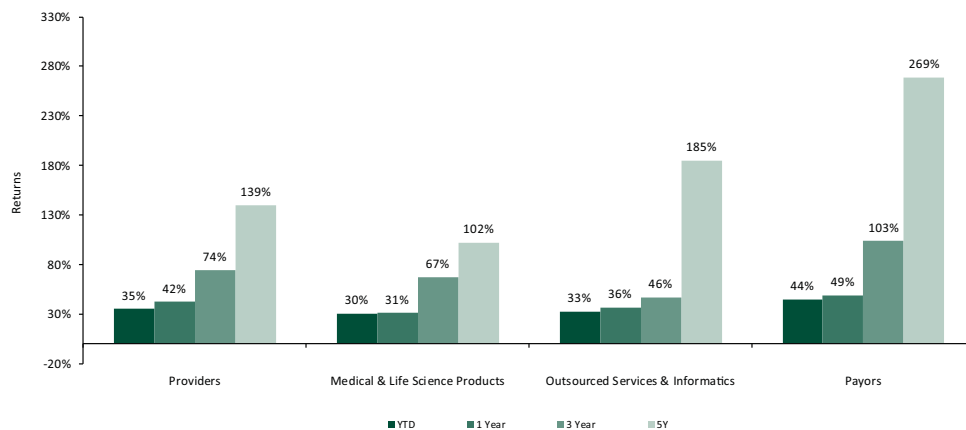
SOURCE: S&P Capital IQ.



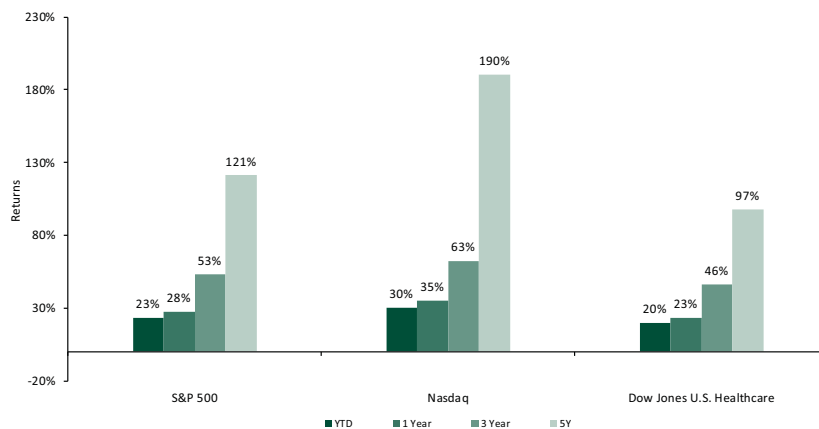


Sector Performance

By Sector



Overall Market



Source: S&P Capital IQ.
As of 11/30/2013.





Global Healthcare & Life Sciences Practice

Diagnostics & Research Tools

- Instruments and Devices
- Point-of-Care Diagnostics
- Controls, Reagents, & Consumables
- Lab Equipment & Supplies
- Drug Discovery Tools

Medical Products

- General Devices & Equipment
- Implantable Devices
- Surgical Tools
- Disposables
- Medical Supplies

Provider Services

- Hospitals & Health Systems
- Physician Practices
- Senior Living & Long-Term Care
- Alternate Site Providers
- Home Healthcare & Hospice
- Clinical Diagnostics

Outsourcing & Informatics

- Functional Outsourcing (e.g. CRO, CMO, CSO)
- Clinical Solutions & Outsourcing
- Payer Services
- Pharmaceutical Services
- Distribution
- Staffing

Who We Are

Leading Independent Firm

- Independent investment banking advisory firm focused on the middle market
- Senior bankers with significant experience and tenure; partners average over 20 years of experience
- Offices in Chicago, Cleveland, Miami, and Salt Lake City
- Founding member and the exclusive U.S. partner of Global M&A Partners, Ltd., the world's leading partnership of investment banking firms focusing on middle market transactions
- Deep industry experience across core sectors of focus, including: Business and Energy & Environmental Services, Consumer Products & Retail Services, Healthcare and Life Sciences, Industrials, and Real Estate

Comprehensive Capabilities

M&A Advisory	Private Placements	Financial Advisory
Sell-Side Advisory Acquisitions & Divestitures Public & Private Mergers Special Committee Advice Strategic Partnerships & Joint Venture Formation Fairness Opinions & Fair Value Opinions	All Tranches of Debt & Equity Capital for: Growth Acquisitions Recapitalizations Dividends	General Financial & Strategic Advice Balance Sheet Restructurings Sales of Non-Core Assets or Businesses \$363 Auctions

Recent Transactions

<p>— a portfolio company of —</p> <p>— acquired by —</p>	<p>— acquired by —</p> <p>— a portfolio company of —</p>	<p>Celsis International Ltd.</p> <p>— has sold —</p> <p>to</p>	<p>— acquired by —</p> <p>Principled Dynamics</p> <p>PharMed will join its group of pharmaceutical services affiliates</p>	<p>— acquired —</p>
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