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Brocair Partners, founded in 2004, is a financial advisor to businesses serving the healthcare, wellness, and pharmaceutical industries. We provide mergers & acquisitions, corporate finance, and strategic advisory services to companies worldwide.

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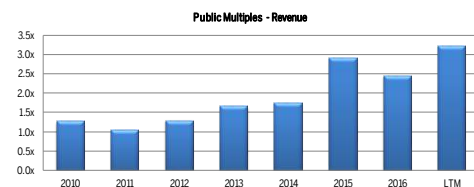
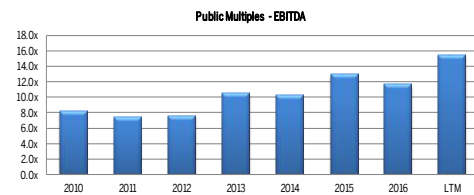
## Pharma Business Services Market Analysis

Outsourced service providers to the pharmaceutical and medical device industry continue to expand their service offerings and geographic presence—and CROs have become buyers

### Industry Multiples and Index

Valuations in the space continue to rise, with revenue multiples in the public markets currently tracking at a median of 2.7x, and median EBITDA multiples of 15.4x. Median revenue multiples are 1.7x and median EBITDA multiples are 13.9x for transactions over the past three years. In September 2015 transaction multiples of EBITDA were 9.3x, so valuations have moved significantly higher.

Brocair's index of pharma business services companies outperformed the S&P 500, and is up approximately 135% in the past five years, versus nearly 100% for the broader index.



Source: Capital IQ

### Trends

M&A activity in the space has continued apace as industry leaders have been trying to consolidate the market share by merging with competitors, and

traditional CROs have been moving into complementary services in the space.

In November 2016, Advent and Thomas H. Lee bought inVentiv for \$3.8 billion; six months later, in May 2017, INC Research and inVentiv announced a 53/47 merger to form the second largest biopharmaceutical outsourcing provider with an enterprise value of \$7.4 billion. In October 2016, Quintiles merged with IMS Health in a \$13.2 billion transaction that combined IMS Health's global information solutions with Quintiles' product development services.

Tough regulatory scrutiny has continued, encouraging deals in outsourced regulatory and compliance services. The December 2016 acquisition by Model N of Revitas in the U.S. and the October 2016 purchase of Sofus Regulatory Affairs by Xendo in Europe are recent examples.

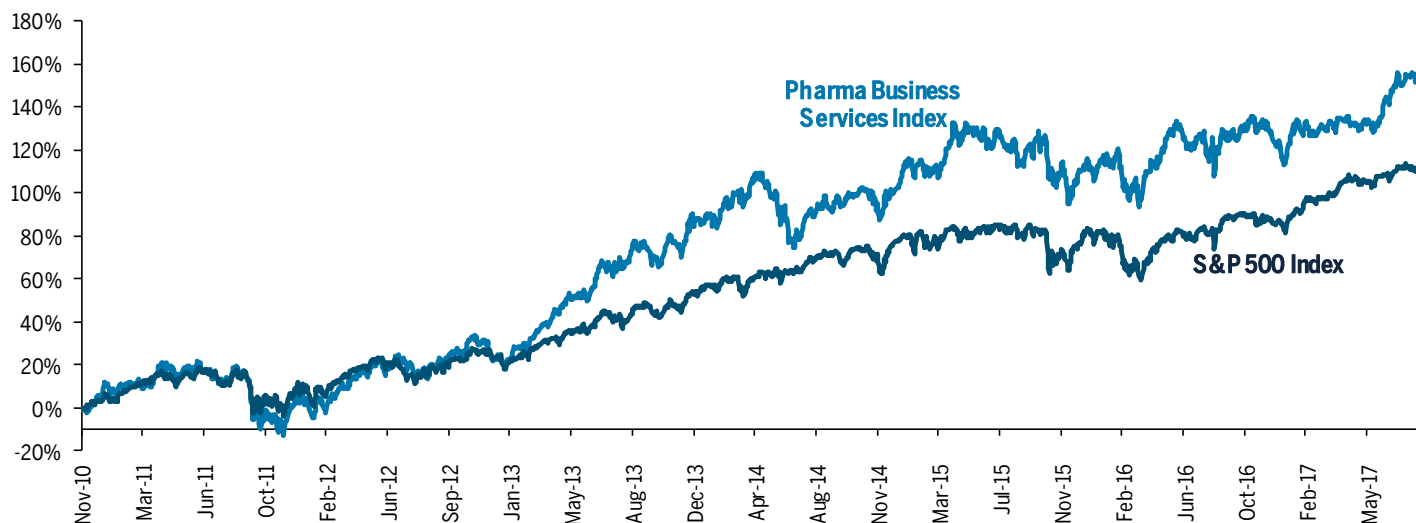
The global pharmacovigilance software market is expected to grow at a CAGR of 6.2% from 2016-2020, and is expected to reach a value of \$207.3 million in 2024.<sup>1</sup> North America accounts for the largest share of the drug safety software market, followed by Europe.

UDG Healthcare has continued to add to its Ashfield medical communications business. Six months after its acquisition of the second largest U.K. healthcare consultancy firm Pegasus in April 2016, UDG acquired STEM Marketing to further enhance its commercial, clinical and communications services. In May 2017, UDG closed the acquisition of five marketing services companies including Germany-based Sellxper and four Spanish companies, to augment its presence and capabilities in Europe.

<sup>1</sup> GosReports, ReportLinker

## Pharma Business Services Index

Below is an index of selected companies with a significant portion of their business in the pharma business services market compared to the S&P 500.



Pharma Business Services Index includes Catalent, Inc., Cello Group Plc, ICON Public Limited Company, Inovalon Holdings, Inc., Medidata Solutions, Inc., Omnicom Group Inc., PAREXEL International Corporation, UDG Healthcare plc

Source: Capital IQ

## Comparable Company Analysis

Below is a snapshot of selected companies with a significant portion of their business in the pharma business services market.

Company	Price	52-Week		EV*	Net Debt	Market Cap	EV/Sales			EV/EBITDA		
		High	Low				2015	2016	LTM	2015	2016	LTM
Catalent, Inc.	\$ 34.48	\$ 38.73	\$ 21.83	\$ 6,088.8	\$ 1,780.2	\$ 4,308.6	2.9x	2.5x	3.1x	12.5x	12.4x	15.4x
Cello Group Plc	\$ 1.60	\$ 1.85	\$ 1.25	\$ 172.8	\$ 6.3	\$ 166.1	0.5x	0.6x	0.8x	13.0x	15.4x	16.1x
ICON Public Limited Company	\$ 106.32	\$ 109.32	\$ 73.76	\$ 5,779.5	\$ 33.8	\$ 5,745.7	2.9x	2.6x	3.4x	13.8x	11.6x	14.7x
Inovalon Holdings, Inc.	\$ 12.65	\$ 19.40	\$ 8.60	\$ 1,572.5	\$ (274.3)	\$ 1,846.8	5.3x	2.4x	3.6x	15.6x	11.4x	19.3x
Medidata Solutions, Inc.	\$ 76.86	\$ 85.92	\$ 46.10	\$ 4,400.1	\$ (96.5)	\$ 4,496.5	7.0x	6.4x	8.6x	N/A	N/A	N/A
Omnicom Group Inc.	\$ 78.82	\$ 89.66	\$ 77.50	\$ 21,986.1	\$ 3,105.2	\$ 18,188.0	1.5x	1.6x	1.4x	9.9x	10.5x	9.5x
PAREXEL International Corporation	\$ 87.47	\$ 87.86	\$ 51.16	\$ 4,884.6	\$ 415.6	\$ 4,469.0	1.8x	1.8x	2.3x	12.3x	10.8x	14.2x
UDG Healthcare plc	\$ 11.12	\$ 11.73	\$ 7.78	\$ 2,685.3	\$ (71.5)	\$ 2,760.9	0.9x	2.4x	2.4x	15.2x	18.5x	18.5x

\*Enterprise Value (EV) = market capitalization + debt + noncontrolling interest

All currency figures in USD. Price figures in actual dollars; EV, Net Debt, and Market Cap in millions

Normalized to exclude multiples greater than 20.0x

Market Cap and Enterprise Value as of 08/02/2017

	EV/Sales			EV/EBITDA		
	2015	2016	LTM	2015	2016	LTM
<b>Maximum</b>	7.0x	6.4x	8.6x	15.6x	18.5x	19.3x
<b>Mean</b>	2.8x	2.5x	3.2x	13.2x	12.9x	15.4x
<b>Median</b>	2.3x	2.4x	2.7x	13.0x	11.6x	15.4x
<b>Minimum</b>	0.5x	0.6x	0.8x	9.9x	10.5x	9.5x

## Comparable Transaction Analysis

Below is a snapshot of selected recent transactions in the pharma business services market.

Date Closed	Target	Acquirer	Transaction Description	Transaction Value (\$M)	Enterprise Value (\$M)	EV*/ Revenue	EV*/ EBITDA
7/20/2017	Random42 Limited	Graphite Capital Management LLP	Graphite Capital Management, a middle market private equity firm based in the U.K., acquired British medical animation producer Random42 from Vesta Capital, to increase Random42's geographic coverage further by expanding in Europe and the Far East while continuing to grow its core North American sales.	N/A	N/A	N/A	N/A
7/18/2017	Advantage Healthcare Inc.	Cello Group Plc (AIM:CLL)	Cello Group, a healthcare and strategic marketing group based in the U.K., acquired Advantage Healthcare, a New Jersey-based biopharma consultancy. Advantage Healthcare adds to Cello Health's growing U.S. presence.	4.5	4.5	1.0x	N/A
7/17/2017	Cambridge BioMarketing Group, LLC	UDG Healthcare plc (LSE:UDG)	UDG Healthcare, a clinical, communication, and packaging business based in Ireland, acquired Cambridge Biomarketing Group, a Massachusetts-based health care marketing communications agency, to expand UDG's geographic footprint and healthcare marketing capability.	35.0	35.0	N/A	N/A
7/12/2017	Vynamic, LLC	UDG Healthcare plc (LSE:UDG)	UDG Healthcare, a clinical, communication, and packaging business based in Ireland, acquired Vynamic, a Pennsylvania-based management consulting services provider, to expand UDG's U.S. presence and its healthcare consulting capability.	32.0	32.0	N/A	N/A
7/6/2017	Carling Group of Companies	Fishawack Communications Ltd.	Fishawack Communications, a British operator of a full-service medical communications agency, acquired Carling Group of Companies, a California-based healthcare marketing and medical education services provider, to expand Fishawack's global footprint and capability in healthcare marketing and communications.	N/A	N/A	N/A	N/A
7/5/2017	SO What Global (nka:Havas SO)	Havas Health & You	Havas Health & You, a New York-based health and wellness communication networks operator, acquired SO What Global, a British health and wellness communications agency, to expand Havas Health's international footprint and health communications technology.	N/A	N/A	N/A	N/A
6/22/2017	Cobridge Co., Ltd.	WDB Holdings Co., Ltd. (TSE:2475)	WDB Holdings, a Japanese company that provides human resource services and contract research and manufacturing services, acquired Cobridge, a Japanese regulatory affairs consulting firm, to enhance its regulatory consulting services for overseas pharmaceutical and medical device manufacturers.	N/A	N/A	N/A	N/A
6/13/2017	Med-Con Technologies LLC	Verify Smart Corp. (OTCPK:VSMR)	Verify Smart, a Nevada-based provider of IT solutions focused on fraud protection, acquired Med-Con Technologies, New Jersey-based patient adherence software business, to establish Verify Smart as the exclusive international reseller of Med-Con's medication adherence solution, to broaden its reach into new markets.	N/A	N/A	N/A	N/A
6/8/2017	Direct Medica SA	Webhelp SAS	Webhelp, a Paris-based provider of outsourced customer relationship management services, acquired a majority stake in Direct Medica, a French provider of direct sales, marketing, and consulting services for pharmaceutical industry, to expand into the healthcare sector in Europe.	N/A	N/A	N/A	N/A
6/8/2017 (Announced)	Mythos Co., Ltd.	Pharmanise Holdings Corporation (TSE:2796)	Pharmanise, which manages dispensing pharmacies, drug stores, and convenience stores in Japan, will acquire Mythos, also based in Japan, which provides CRM and Sales Force Automation software systems for pharmaceutical firms and develops communication web platforms for doctors and drug companies.	2.8	2.8	0.1x	N/A
6/7/2017	MaGil IRB, Inc.	Chesapeake Research Review, Inc.	The acquisition of MaGil provides Chesapeake with additional AAHRPP-accredited review capacity and more staff, broadening its presence for CROs, pharmaceutical companies, and biotech companies. Both companies are based in Maryland.	N/A	N/A	N/A	N/A
6/6/2017	Institutional Biosafety Corporation	Chesapeake Research Review, Inc.	The acquisition of IBC expands Chesapeake's services with the capability to provide comprehensive review and oversight of research utilizing recombinant or synthetic DNA molecules, including clinical trials involving genetic engineering and gene therapy. Both companies are based in Maryland.	N/A	N/A	N/A	N/A
6/1/2017	DILSsym Services, Inc.	Simulations Plus, Inc. (NasdaqCM: SLP)	Simulations Plus, a California-based provider of simulation and modeling software for pharmaceutical discovery and development, acquired DILSsym Services based in North Carolina, to further advance the study and simulation of drug-induced liver injury.	10.0	9.5	N/A	N/A
5/25/2017	i2b2 Foundation	transSMART Foundation	transSMART and i2b2 foundations, both based in Massachusetts, merged to become the i2b2 transSMART Foundation. The new organization is a global non-profit open-source foundation facilitating the further development of precision medicine and bringing it to practice.	N/A	N/A	N/A	N/A
5/24/2017 (Announced)	Sellxpert GmbH & Co. Kg	UDG Healthcare plc (LSE:UDG)	UDG Healthcare, based in Ireland, acquired Sellxpert, based in Germany, to augment the presence and capabilities of its Ashfield business in Germany. Sellxpert provides sales and marketing services to healthcare and pharmaceutical companies across Germany and Switzerland.	14.4	14.4	N/A	N/A
5/24/2017	Sorento Healthcare Communications Pvt Ltd	Havas (ENXTPA:HAV)	France-based global communications agency Havas Group has acquired Indian healthcare advertising agency Sorento. The acquisition will allow Havas to further develop its regional presence as also to deliver quality for global clients.	N/A	N/A	N/A	N/A
5/22/2017 (Announced)	Menges Medizintechnik GmbH	Celesio AG (DB:CLS1)	Sanova, an Austrian subsidiary of Celesio, a German pharmaceutical wholesaler and retailer, acquired Austria-based Menges Medizintechnik, a distributor of products for radiology and for the operating room, to strengthen Sanova's hospital market position in Austria.	N/A	N/A	N/A	N/A
5/19/2017	Grupo Trebalia, S.L.U., and three other Spanish companies	UDG Healthcare plc (LSE:UDG)	Ashfield Iberia, a Spanish subsidiary of UDG Healthcare, acquired four Spanish marketing research companies, including Grupo Trebalia, Laboratorios Biomedifarma, Laboratorios Medinova, and Medical Expansis in order to strengthen Ashfield's presence and capabilities in Spain.	N/A	N/A	N/A	N/A
5/18/2017	PCT, LLC	Hitachi, Ltd. (TSE:6501)	Hitachi Chemical acquired the remaining 80.1% stake of Caladrius Biosciences' PCT cell therapy and manufacturing subsidiary. It will combine its capital and engineering expertise with PCT to accelerate its global commercial manufacturing for the cell therapy industry.	80.0	99.9	N/A	N/A
5/15/2017	Elite Sampling and Media Group, LLC	Mesmerize, LLC	Mesmerize Marketing, an NY-based leader in patient education at the point of care (POC), acquired Connecticut-based Elite Sampling & Media Group's national network of doctors' office wallboards, which elevates Mesmerize to the largest provider of static media in high prescribing physicians' offices.	N/A	N/A	N/A	N/A
5/10/2017 (Announced)	inVentiv Health Inc.	INC Research Holdings, Inc. (NasdaqGS:INCR)	The 53/47 merger of INC Research and inVentiv will create a new organization whose combined clinical scale, therapeutic depth and expertise will allow it to more effectively partner with biopharmaceutical companies of all sizes.	4,600.0	4,600.0	2.1x	12.6x
5/9/2017	MedAvante, Inc.	WIRB-Copernicus Group, Inc.	New Jersey-based WIRB-Copernicus Group, which provides solutions that improve clinical research, acquired New Jersey-based MedAvante to position WCG as the leader in the growing central nervous system and behavioral health assessment markets.	N/A	N/A	N/A	N/A
5/9/2017	ProPhase, LLC	WIRB-Copernicus Group, Inc.	WIRB-Copernicus Group acquired New York-based ProPhase, a global provider of measurement-related specialty solutions in clinical trials. The merger positions WCG as the leader in the growing central nervous system and behavioral health assessment markets.	N/A	N/A	N/A	N/A

## Comparable Transaction Analysis, cont'd.

Date Closed	Target	Acquirer	Transaction Description	Transaction Value (\$M)	Enterprise Value (\$M)	EV*/ Revenue	EV*/ EBITDA
5/4/2017	PolicyStat LLC	iContracts, Inc.	iContracts, a New Jersey-based contract, compliance, and revenue management solutions business acquired Indiana-based PolicyStat which provides policy lifecycle management solutions. The combination creates a broader service platform to manage companies' high risk business processes.	N/A	N/A	N/A	N/A
5/1/2017	DPP Health Partners, Co.,LTD	Data Horizon Corporation (TSE:3628)	Japanese medical information business, Data Horizon Corporation, acquired DPP Health Partners, also in Japan, which provides disease management and prevention services, to expand Data Horizon's domestic Japanese market share.	N/A	N/A	N/A	N/A
4/25/2017	Emergo Group Inc.	UL LLC	Illinois-based global safety science company Underwriters Laboratories acquired Texas-based Emergo, which provides regulatory services and market access services to medical device manufacturers, to provide additional services to its medical device manufacturer customers.	N/A	N/A	N/A	N/A
2/21/2017	Predixion Software, Inc.	Jvion, LLC	Jvion, a Georgia-based cognitive clinical science machine firm, acquired California-based predictive analytic firm Predixion's Healthcare IT practice, to augment Jvion's market positioning and to bring new pools of data to the existing body of data that feeds Jvion's technology.	N/A	N/A	N/A	N/A
2/16/2017	Wyatt Health Management Inc.	AmerisourceBergen Corporation (NYSE:ABC)	Innomar Strategies, Canada's leading specialty pharmaceuticals service provider and a part of AmerisourceBergen, acquired Canada-based reimbursement consulting firm Wyatt Health Management, to expand its patient support services.	N/A	N/A	N/A	N/A
2/2/2017	Ctp Tecnologie Di Processo SpA and Edelway AG	Akka Technologies (ENXTPA:AKA)	Akka Technologies, an engineering and technology consulting group based in France, acquired Italy-based CTP Systems and Edelway, to expand its technological offerings and for geographical, customer and sector diversification. CTP and Edelway provide life science consulting and engineering services.	N/A	N/A	N/A	N/A
2/1/2017 (Announced)	The Medical Affairs Company LLC (d/b/a TMAC)	PAREXEL International Corporation (NasdaqGS:PRXL)	The acquisition of TMAC, a Georgia-based contract medical organization that provides scientific and medical affairs services, expands Massachusetts-based PAREXEL's commercialization and market access offerings. PAREXEL provides clinical research, logistics, communications to the biopharma industry.	N/A	N/A	N/A	N/A
1/31/2017	Defined Healthcare Research Inc.	Cello Group Plc (AIM:CLL)	Through the acquisition of Defined Health, a New Jersey-based business development strategy consulting service, Cello, based in the U.K., enhances its consulting and communication services for early drug development companies.	9.5	9.5	1.4x	N/A
1/25/2017	Fishawack Communications Ltd.	LDC (Managers) Limited	To capitalize on expected growth in the medical affairs space, LDC, a UK-based private equity firm, acquired Fishawack Communications, a UK-based provider of communications services to pharmaceutical companies.	47.9	47.9	N/A	N/A
1/19/2017	Physician Resource Management, Inc. (d/b/a Caret)	AssistRx, Inc.	To improve its patient focused solutions for clinical trial and post FDA approval life cycles, Florida-based AssistRx, a developer of technology solutions for the specialty pharmaceutical industry, acquired Caret, a Michigan-based designer of a web-based platform that supports patient decision making.	N/A	N/A	N/A	N/A
1/10/2017	B & C Group SA	Clinical Supplies Management, Inc.	As part of its European expansion plan, Clinical Supplies Management, a North Dakota-based supply chain service provider to pharmaceutical companies, acquired Belgium-based B & C Group, a pre-clinical research packing and logistics service.	N/A	N/A	N/A	N/A
12/21/2016	Marken Limited	United Parcel Service, Inc. (NYSE:UPS)	Through the acquisition of U.K.-based Marken, a patient-centric supply chain service for the pharmaceutical and life science industries, UPS enhances its international logistics services to the biopharma and life science markets.	N/A	N/A	N/A	N/A
12/12/2016	Revitas Inc.	Model N, Inc. (NYSE:MODN)	Model N, a California-based provider of revenue management cloud solutions, acquired Revitas, a Pennsylvania-based provider of integrated solutions for contract, revenue, and compliance management to the life sciences industry, to expand Model N's footprint in life sciences.	60.0	60.0	N/A	N/A
12/5/2016	Theorem Clinical Research GmbH	Clinical Supplies Management, Inc.	Clinical Supplies Management, a North Dakota-based packing and labeling service to pharmaceutical companies, acquired Theorem Clinical Research, a German-based clinical trial drug packaging service, to enter the European market.	N/A	N/A	N/A	N/A
12/2/2016	Everyday Health, Inc.	j2 Global, Inc. (NasdaqGS:JCOM)	Ziff Davis (a subsidiary of j2 Global), a California-based digital media company, acquired Everyday Health, a New York-based operator of digital marketing and communications platform for healthcare marketers, to expand Ziff Davis' capability in healthcare digital marketing.	489.4	467.3	1.8x	15.1x
12/1/2016	Pharma International Inc.	Perigord Life Science Artwork Solutions	The acquisition of Pharma International, a New York-based package design company, enhances Perigord's ability to provide a larger breadth of labeling solutions for its clients. Perigord is a Dublin-based outsourced labelling services and management solutions provider to the life science industry.	N/A	N/A	N/A	N/A
11/10/2016	inVentiv Health Inc.	Advent International Corporation	To accelerate inVentiv health's growth, Boston-based private equity firm, Advent International, acquired a majority stake in the company. inVentiv Health is a provider of outsourced clinical development and commercialization services to biopharmaceutical companies. The firm is based in Massachusetts.	4,094.9	5,899.0	2.7x	19.3x
11/4/2016	B-bros	UBCare Co. Ltd. (KOSDAQ:A032620)	UBCare, a healthcare solutions company based in South Korea, acquired a 42.7% stake in B-bros, a South Korea-based company developing mobile applications, to enhance its healthcare IT solutions.	5.3	12.4	N/A	N/A
11/3/2016	Collaborative Consulting, LLC	CGI Group Inc. (TSX:GIB.A)	CGI Technologies and Solutions (a subsidiary of CGI Group), a Virginia-based business information system provider, acquired Collaborative Consulting, a Massachusetts-based IT services provider to businesses including pharmaceutical, biotechnology, and medical device companies, to expand CGI's footprint in New England.	112.6	112.6	1.5x	N/A
11/2/2016	NeuroInsights, LLC, Neurotech Investing and Partnering Conferences	Cambridge Healthtech Institute, Inc.	To enhance its ability to provide content to the life sciences industry, Massachusetts-based Cambridge Healthtech acquired U.S.-based NeuroInsights and Neurotech Investing and Partnering Conferences, both premier business and investment conferences for commercial neuroscience.	N/A	N/A	N/A	N/A
10/31/2016	Health Enterprises 2 Pty Ltd (d/b/a Healthnotes)	MedAdvisor Limited (ASX:MDR)	Through the acquisition of Healthnotes, an Australian developer of software solutions for pharmacies and patients, MedAdvisor increases its share of connected community pharmacies in Australia to 45%. MedAdvisor offers a medication adherence management platform in Australia.	4.1	4.1	N/A	N/A
10/31/2016	Sofus Regulatory Affairs AB	Xendo B.V.	The acquisition of Sweden-based Sofus Regulatory Affairs, which provides regulatory consulting for all phases of pharma and biotech development, by Xendo, a Netherlands-based regulatory, compliance and validation consultant, expands its geographic reach in the Nordics.	N/A	N/A	N/A	N/A
10/21/2016	STEM Marketing Limited	UDG Healthcare plc (LSE:UDG)	UDG Healthcare, a clinical, communication, and packaging business based in Ireland, acquired STEM Marketing, a Swiss provider of marketing and medical audits to pharmaceutical companies, to enhance its commercial, clinical and communications services.	102.5	102.5	N/A	15.3x
10/12/2016	Clinical Supplies Management, Inc.	Great Point Partners, LLC	Great Point Partners, a Connecticut-based private equity firm, recapitalized Clinical Supplies Management, a North Dakota-based packing and labeling logistics solution to pharmaceutical companies, to accelerate its growth strategy including its planned international expansion.	N/A	N/A	N/A	N/A

## Comparable Transaction Analysis, cont'd.

Date Closed	Target	Acquirer	Transaction Description	Transaction Value (\$M)	Enterprise Value (\$M)	EV*/ Revenue	EV*/ EBITDA
10/11/2016	Tute Genomics, Inc.	PierianDx, Inc.	PierianDx, a Missouri-based developer of complex genomic tests for clinical laboratories, acquired Tute Genomics, a Utah-based developer of cloud based application, to expand PierianDx's cloud software development capability.	N/A	N/A	N/A	N/A
10/11/2016	Scientific Advantage, LLC	SSI Strategy	To enhance its medical affairs strategy and operational consulting capabilities, SSI Strategy, a New Jersey-based provider of management consulting services, acquired Scientific Advantage, a New Jersey-based medical affairs consultant.	N/A	N/A	N/A	N/A
10/6/2016	BDIA Dental Showcase	Mark Allen Holdings Limited+D19	As part of its strategy to develop its event business, Mark Allen Holdings, a U.K.-based publisher, acquired BDIA Dental, a dental show host in the U.K.	N/A	N/A	N/A	N/A
10/3/2016	ProPharma Group, Inc.	Linden Capital Partners	Chicago-based healthcare private equity firm, Linden Capital Partners, acquired ProPharma, a Kansas-based compliance and pharmacovigilance consultant, to accelerate the company's growth. This is the second acquisition that Linden has made in the pharmaceutical services space.	N/A	N/A	N/A	N/A
10/3/2016	IMS Health Holdings, Inc.	Quintiles Transnational Holdings Inc. (NYSE:Q)	Quintiles merged with IMS Health to offer its clients improved clinical trial design, recruitment and execution by combining IMS Health's global information solutions with Quintiles' product development skills. They also will improve their healthcare technology platform to address issues of cost, value and patient outcomes.	13,549.4	13,171.4	4.3x	17.7x
10/3/2016	GQ Life Sciences, Inc.	Aptean, Inc.	Aptean, a Georgia-based enterprise software solution provider, acquired GQ Life Sciences, a Massachusetts-based provider of life science patent search solutions. The acquisition expands Aptean's solution offerings to the life sciences market.	N/A	N/A	N/A	N/A
9/30/2016	RxAnte Inc.	UPMC Enterprises	Pennsylvania-based private equity firm, UPMC Enterprises, acquired RxAnte, a Maine-based analytics platform used to predict medical adherence for patients, to expand its analytics and clinical offerings for Medicare, Medicaid and commercial populations	N/A	N/A	N/A	N/A
9/26/2016	Multimedia International Services Pty Limited (d/b/a The Community Network)	Medical Channel Pty Ltd.	Through the acquisition of The Community Network, a provider of digital advertising and information systems in Australia, Medical Channel, a waiting room media network company, now provides advertising to 3200 healthcare providers in Australia.	N/A	N/A	N/A	N/A
9/26/2016	COOKPAD Diet Lab Inc.	MedPeer, Inc. (TSE:6095)	MedPeer, which operates a website in Japan for the medical doctor community and online research services to its member physicians, acquired 84.7% of COOKPAD Diet Lab, a Tokyo-based developer of a dietary and recipe sharing mobile application and portal.	2.2	2.7	1.5x	N/A
9/7/2016	d3 Medicine Pty Ltd	Certara, L.P.	The acquisition of d3 Medicine, a provider of research and advisory services for drug development in Australia, strengthens Certara's capabilities to serve its clients in the oncology, orphan disease, infectious disease and inflammation areas. Certara is a regulatory consulting company based in New Jersey.	N/A	N/A	N/A	N/A
9/1/2016	Dymedex Consulting, LLC	Navigant Consulting, Inc. (NYSE:NCI)	To expand its life science practice and medical technology capabilities, Navigant, an Chicago-based consulting firm, acquired Minnesota-based Dymedex, which provides market analysis to accelerate adoption and maximize growth for medical device companies.	N/A	N/A	N/A	N/A
8/23/2016	iIV Inc.	AlliancePharma Inc. (d/b/a KDA Group Inc.) (TSXV:KDA)	KDA Group, a pharmacy staffing and distribution company in Canada, acquired iIV, a provider of medical communication and educational programs for the medical community in Canada, to enter the pharmaceutical solutions market.	5.3	5.3	0.8x	8.4x
8/8/2016	AstraZeneca PLC, Conference Notes iPad app including the associated technology	Core-apps, LLC	Through the acquisition of AstraZeneca' Conference Notes iPad app, Core-apps offers the only platform in the medical or scientific trade show event space to have a fully integrated solution. Maryland-based Core-apps provides mobile applications for trade shows, events, and conferences.	N/A	N/A	N/A	N/A
7/11/2016	ExL Events, Inc.	Questex Media Group, LLC	Questex, a Massachusetts-based global business information and events company focused on a range of industries, acquired New York-based ExL Events to expand Questex's presence in the global pharmaceutical, life science and healthcare markets.	N/A	N/A	N/A	N/A
6/22/2016	CenterWatch, LLC	WIRB-Copernicus Group, Inc.	New Jersey-based WIRB-Copernicus Group, which provides solutions that improve clinical research, acquired Massachusetts-based CenterWatch, a provider of clinical trial industry news and information, as part of its strategy to accelerate the clinical research process without jeopardizing the protection of study volunteers.	N/A	N/A	N/A	N/A
6/14/2016	PageScience Inc.	AccentHealth, LLC	AccentHealth, a Florida-based patient education media company, acquired PageScience, a New York-based pioneer in programmatic advertising, to enable AccentHealth's patient engagement platform to provide health and wellness marketers multiple, unique touchpoints across the patient journey.	N/A	N/A	N/A	N/A
6/9/2016	BioPharm Communications, Inc.	Omnicom Group Inc. (NYSE:OMC)	New York-based Omnicom Health Group, a healthcare marketing and communications group, acquired Pennsylvania-based BioPharm, a communications agency providing multichannel marketing programs to healthcare practitioners, to strengthen its data-driven healthcare marketing capabilities.	N/A	N/A	N/A	N/A
6/6/2016	MedForce, Inc.	Eureka Growth Capital	Eureka Growth Capital has acquired Shrewsbury, New Jersey-based MedForce, which specializes in speakers bureau and advisory board program management, implementation, and compliance, to expand its capacity and capabilities.	N/A	N/A	N/A	N/A
5/31/2016	Samarind Ltd	Instem plc (AIM:INS)	Instem, a U.K.-based provider of IT solutions to the global early development healthcare market, acquired the U.K.-headquartered Samarind organization to help bring scalability and next generation capabilities to the increasingly complex global regulatory environment.	3.7	3.7	2.1x	6.3x
4/29/2016	Skura Corporation Inc.	Indegene Lifesystems Pvt Ltd.	Indegene Lifesystems, an Indian healthcare IT firm, acquired Canada's Skura Technologies, which enables life science sales, to expand its "omnichannel" software suite for life sciences, product development capabilities in North America.	9.0	9.0	1.3x	N/A
4/18/2016	Pegasus Public Relations Ltd	UDG Healthcare plc (LSE:UDG)	Pegasus, the second largest healthcare consultancy in the U.K., was acquired by Irish company UDG Healthcare, a provider of outsourced services to drug companies, to broaden UDG's capabilities in patient and consumer communications programs.	24.6	24.6	1.9x	N/A
3/29/2016	Communications Media, Inc.	WPP plc (LSE:WPP)	Pennsylvania-based CMI, the nation's leading specialist healthcare media agency, has been acquired by U.K.-based WPP, the world's largest marketing communications services group, to continue WPP's strategy of investing in important disciplines, such as pharmaceutical and healthcare.	N/A	N/A	N/A	N/A
3/24/2016	Viscira, LLC	Sudler & Hennessey, LLC	Sudler & Hennessey Group, a New York-based global healthcare communications network, acquired Viscira, a California-based digital healthcare marketing and media firm, to deepen its technology expertise and add transformative digital solutions.	N/A	N/A	N/A	N/A
3/11/2016	Value Edge Research Services Pvt. Ltd.	WNS (Holdings) Ltd. (NYSE:WNS)	WNS Holdings, an Indian business process management company, bought fellow Indian commercial research and analytics services provider Value Edge Research, to deepen its domain and specialized analytical capabilities in the growing pharma market.	17.5	17.5	N/A	N/A

## Comparable Transaction Analysis, cont'd.

Date Closed	Target	Acquirer	Transaction Description	Transaction Value (\$M)	Enterprise Value (\$M)	EV*/ Revenue	EV*/ EBITDA
3/1/2016	PharmApprove, LLC	NDA Regulatory Service AB	NDA Group, a Sweden-based strategic regulatory and HTA consultancy, acquired PharmApprove, a New Jersey-based strategic regulatory and scientific communications consultancy. The newly combined company will help clients streamline their global development and commercialization process.	N/A	N/A	N/A	N/A
1/28/2016	Eveo Communication Group, Inc.	ALPHAION Corporation	ALPHAION Corporation, a social commerce company that promotes consumer wellness, acquired Eveo, a health and wellness digital technology company, for its deep expertise in both design and development of advanced social commerce platforms and information systems. Both companies were in California.	N/A	N/A	N/A	N/A
1/19/2016	Clinverse, Inc.	BioClinica, Inc.	BioClinica, a Pennsylvania-based integrated clinical research technology solutions provider, acquired Clinverse, a North Carolina-based cloud-based financial lifecycle system for automating clinical payments provider, to expand BioClinica's cloud healthcare technology capability.	N/A	N/A	N/A	N/A
12/31/2015	Chesapeake Research Review, Inc. (d/b/a Chesapeake IRB)	Linden LLC	Chicago-based private equity firm, Linden, acquired Maryland-based Chesapeake IRB, a provider of independent institutional review board (IRB) services, to benefit from the continued growth potential of IRB services across the clinical research and development spectrum.	N/A	N/A	N/A	N/A
12/22/2015	Commercial Services Business of PDI, Inc.	Publicis Groupe SA (ENXTPA: PUB)	Through the acquisition of PDI's Commercial Services Business, a US-based provider of sales support services to healthcare providers, Publicis, a marketing and communications company based in France, to enhance their position as a commercialization partner to pharmaceutical and biotech companies.	32.6	32.6	N/A	N/A
11/13/2015	NextDocs Corporation	Aurea Software, Inc.	Aurea Software, a Texas-based business process management and data integration software solutions, acquired NextDocs, a Pennsylvania-based provider of healthcare regulated content management and compliance solutions, to expand Aurea's software business in healthcare industry.	N/A	N/A	N/A	N/A
10/14/2015	Yes Pharmaceutical Development Services GmbH	PharmaLex GmbH	Yes Pharmaceutical Development Services, a German-based pharmacovigilance and drug development service provider owned by private equity fund AUCTUS, merged with PharmaLex, a German-based regulatory affairs solution for and drug development, to better position the firms to serve their pharmacovigilance clients.	N/A	N/A	N/A	N/A
10/7/2015	PSKW, LLC	Genstar Capital, LLC	Genstar Capital, a California-based private equity firm, acquired PSKW, a New Jersey-based provider of payment reimbursement services for pharmaceutical companies, to accelerate PSKW's growth both organically and inorganically.	N/A	N/A	N/A	N/A
9/30/2015	Rare Insights LLC	Spherix Global Insights GmbH	Spherix Global Insights, a Swiss-based provider of market research and business intelligence solutions, acquired Rare Insights, a strategic consultancy and market research service provider based in Massachusetts, to add custom patient insights to its suite of products.	N/A	N/A	N/A	N/A
9/30/2015	Axpharma SA (55% stake)	Galienna Capital	To capitalize on the rapidly-growing market, Galienna, a private equity firm in France, acquired Axpharma, a clinical service organization that focuses on pharmacovigilance in France. Galienna looks to grow the company through organic means and acquisitions domestically as well as internationally.	N/A	N/A	N/A	N/A
9/29/2015	Zinc Ahead Ltd.	Veeva Systems Inc. (NYSE: VEEV)	Zinc Ahead, a commercial life science content management solutions provider based in the U.K., and Veeva Systems, a California-based provider of cloud-based software for the global life sciences industry, merged in order to provide an end-to-end compliance management solution to reduce regulatory risk.	126.7	126.7	N/A	N/A
9/16/2015	Chester Street Publishing, Inc.	Healthcare Information & Management Systems Society	The acquisition of Massachusetts-based Chester Street Publishing gives Illinois-based Healthcare Information & Management Systems Society access to digital healthcare information including interviews, news, and live event coverage.	N/A	N/A	N/A	N/A
9/9/2015	Alligent Biopharm Consulting LLC	Envision Pharma, Inc.	Envision, a Pennsylvania-based technology-enabled scientific communications company, acquired Alligent Biopharm, a New Jersey-based medical affairs agency, to complement Envision's existing services of strategic data dissemination.	N/A	N/A	N/A	N/A
9/8/2015	Liberty IRB, Inc.	Chesapeake Research Review, Inc.	Maryland-based Chesapeake IRB, which provides federally mandated IRB services to pharmaceutical, biotech and medical device companies for the protection of human research subjects, acquired Liberty IRB, a Florida-based full-service IRB, to broaden its reach and to add additional review capacity.	N/A	N/A	N/A	N/A
9/4/2015	Cimarron Medical, Inc.	Sun BioPharma, Inc. (OTCPK:SNBP)	Minnesota-based Sun BioPharma's acquisition of Utah-based Cimarron Medical provides customized computer software for its medical research and clinical trials. Cimarron Medical develops and distributes computer software for medical use, including its Laboratory Workflow Systems technology.	N/A	N/A	N/A	N/A
9/3/2015	Tardis Medical Consultancy Limited	Publicis Groupe SA (ENXTPA:PUB)	Publicis Healthcare (PHCG), a French provider of customized, omnichannel healthcare sales, service, and clinical teams, acquired Tardis, a British provider of medical and clinical consulting to life science companies, to complement and strengthen its Touchpoint Solutions' clinical capabilities	N/A	N/A	N/A	N/A
9/1/2015	Evidera	Pharmaceutical Product Development, LLC (d/b/a PPD)	PPD, a North Carolina-based leading global contract research organization, acquired Evidera, a Maryland-based leading provider of evidence-based solutions to demonstrate the real-world effectiveness and value of biopharmaceutical products, to further strengthen PPD's peri- and post-approval capabilities.	N/A	N/A	N/A	N/A
9/1/2015	inVentiv Patient Access Solutions, LLC	Xerox Corporation (NYSE:XRJ)	To expand the pharmacy solutions portfolio of its subsidiary TMS Health, Xerox, which provides business process and document management, acquired inVentiv Patient Access Solutions (iPAS), a New Jersey-based compliance service provider to biotech and pharmaceutical companies.	N/A	N/A	N/A	N/A
9/1/2015	Avalere Health LLC	Inovalon Holdings, Inc. (NasdaqGS:INOV)	Inovalon, a Maryland-based technology company providing cloud-based analytics and intervention platforms, acquired Avalere, a Washington DC-based advisor to pharmaceutical companies, to expand Inovalon's data analytics business into the pharmaceutical market.	139.9	139.9	3.0x	N/A
8/18/2015	Bridge Design Inc.	Ximedica, LLC	Ximedica, a Rhode Island-based leading medical technologies development firm, acquired Bridge Design, a medical and life sciences product designer based in California, providing Ximedica with expanded front-end design services for physical and digital products.	N/A	N/A	N/A	N/A
8/14/2015	Spirit Health Group	Healthcare Regional Marketing LLC	Ohio-based Healthcare Regional Marketing and Florida-based Spirit Health Group merged to create Relevance Health Group, a healthcare marketing company whose synergy expands its scope of Healthcare Regional Marketing's data driven capabilities and analytics in healthcare marketing campaigns.	N/A	N/A	N/A	N/A
8/5/2015	Wainwright Associates Limited	PharmaLex GmbH	Wainwright Associates, a U.K. regulatory affairs, medical information, licensing, and strategic development consultant, was acquired by Germany-based PharmaLex, which provides scientific services, regulatory affairs and pharmacovigilance services, to enhance its service offerings.	N/A	N/A	N/A	N/A
7/31/2015	Synergy Medical Communications, Inc.	Dentsu Inc. (TSE:4324)	Dentsu, an international advertising and public relations company based in Japan, acquired Synergy Medical Communications, also based in Japan, to offer a wider selection of healthcare marketing communications services domestically.	N/A	N/A	N/A	N/A
7/30/2015	ABS MM NV	WPP plc (LSE:WPP)	WPP acquired ABS MM NV to further strengthen its healthcare abilities in Brussels, a key location of European health affairs. ABS MM NV provides digital marketing communication services for the healthcare industry and is based in Belgium.	N/A	N/A	N/A	N/A

## Comparable Transaction Analysis, cont'd.

Date Closed	Target	Acquirer	Transaction Description	Transaction Value (\$M)	Enterprise Value (\$M)	EV*/ Revenue	EV*/ EBITDA
7/29/2015	ActioMed Farmacovigilancia SL	PharmaLex GmbH	ActioMed Farmacovigilancia SL, a Spain-based pharmacovigilance provider, was acquired by Germany-based PharmaLex GmbH to improve its current pharmacovigilance design, maintenance, and implementation services.	N/A	N/A	N/A	N/A
7/23/2015	Mercurio Group's Italian healthcare professional and organization database	Veeva Systems Inc. (NYSE: VEEV)	California-based Veeva System's acquisition of Mercurio Group's Italian HCP and HCO database expands its reach to Italy, its third major European market. Mercurio Group markets and promotes pharmaceutical products in Italy.	N/A	N/A	N/A	N/A
7/23/2015	Quantia, Inc.	Physicians Interactive, Inc.	In order to grow its digital engagement solutions business, Massachusetts-based Physicians Interactive acquired Quantia, whose web and mobile community, QuantiaMD, reaches more than 1/3 of U.S. physicians. Massachusetts-based Quantia provides physician relationship management solutions in the U.S.	N/A	N/A	N/A	N/A
7/22/2015	Healthcare Data Solutions, LLC	Quintiles IMS Holdings, Inc.	IMS Health Holdings (Quintiles IMS), a Connecticut-based healthcare holdings company, acquired Healthcare data solutions, a Nebraska-based healthcare database provider, to expand firm's capability in healthcare data solutions and geographic reach.	N/A	N/A	N/A	N/A
7/13/2015	Compliance Implementation Services	Deloitte & Touche LLP	In order to expand its monitoring of industry regulations and broaden its services in compliance as well as risk management, Deloitte & Touche acquired Pennsylvania-based Compliance Implementation Services, a life sciences compliance consulting firm.	N/A	N/A	N/A	N/A
7/13/2015	Imedex, LLC	Vesey Street Capital Partners, LLC	New York-based Vesey Street Capital Partners acquired Georgia-based Imedex from AmerisourceBergen for the growth potential of its accredited physician-oriented CME programs. Imedex is a provider of accredited, independent Continuing Medical Education (CME) to industry professionals.	N/A	N/A	N/A	N/A
6/30/2015	Ariad Communications	Dowden Health Media, Inc. (d/b/a BlueSpire Strategic Marketing)	High Road Capital Partners a New York investor, acquired Toronto-based Ariad, a strategic agency specializing in serving Canadian clients in regulated industries, to combine it with Minnesota-based BlueSpire, which provides marketing strategy, technology and content for clients in healthcare and financial services	N/A	N/A	N/A	N/A
6/25/2015	MedMedia, LLC	Health Media Network	Connecticut-based Health Media's acquisition of California-based MedMedia expands its point-of-care channels and increases the number of medical specialties included in its physician waiting room media. MedMedia is a digital out-of-home media network for physician offices and healthcare locations.	N/A	N/A	N/A	N/A
6/24/2015	Just: Health Communications Ltd., Grupo Tribu S.A. DE C.V. and Groenlandia	Havas (ENXTPA:HAV)	Havas, based in France, acquired Just: Health Communications, Grupo Tribu S.A., and Groenlandia in order to expand the reach of Havas PR agencies such as Havas Life PR and H4B. Just: Health is based in the U.K., Grupo Tribu is in Costa Rica, and Groenlandia is located in Chile.	N/A	N/A	N/A	N/A
6/24/2015	G2 Intelligence	Plain Language Media LLLP	Connecticut-based PLM, a multi-platform B2B information service provider, acquired New Jersey-based G2 Intelligence to expand its healthcare offerings. G2 Intelligence's offerings include newsletters, reports and events.	N/A	N/A	N/A	N/A
6/15/2015	Medsight Solutions	ArisGlobal LLC	In order to expand its safety and risk management offerings, Connecticut-based ArisGlobal acquired New Jersey-based Medsight Solutions. Medsight Solutions is a life sciences company that created Medsight Sapphire, an integrated risk management solution.	N/A	N/A	N/A	N/A
6/10/2015	SevenPDV	The InterPlayers Group	Both based in Brazil, the acquisition of SevenPDV gives InterPlayers Group access to a software platform that improves its ability to help individuals purchase medications from pharmacies.	N/A	N/A	N/A	N/A
5/27/2015	TEMIS S.A.	Expert System S.p.A. (BIT:EXSY)	Expert System, an Italian cognitive computing software developer, acquired TEMIS, a French semantic content enrichment solutions provider for the publishing and media, life science, and defense and security industries, to expand Expert systems's geographic footprints in Europe.	12.0	12.0	1.3x	27.5x
5/26/2015	Sound Opinion Limited	Ergomed plc (AIM:ERGO)	Both based in U.K., Engromed acquired Sound Opinion, a provider of medical information services. The acquisition helps strengthen Ergomed's presence in pharmaceutical post-marketing services.	N/A	N/A	N/A	N/A
5/13/2015	PROSAR Corporation	ProPharma Group, Inc.	PI Arm, a subsidiary of ProPharma Group and a Kansas-based provider of compliance, validation, and technical services to healthcare industry, acquired PROSAR corporation, an Minnesota-based provider of drug safety call center services, to diversify ProPharma's product offering and geographic reach.	N/A	N/A	N/A	N/A
5/5/2015	Dataline Software Limited	IMS Health Holdings, Inc. (NYSE:IMS)	Connecticut-based IMS Health has acquired U.K.-based Dataline Software, a leader in Big Data analytics for healthcare, to extend its technology-enabled Real-World Evidence (RWE) platform and accelerate delivery of integrated clinical and cost-of-care insights for assessing healthcare value and performance	N/A	N/A	N/A	N/A
4/16/2015	Precision Health Economics	Precision for Medicine, Inc.	Maryland-based Precision for Medicine acquired California-based Precision Health Economics, an economic research and consulting services provider. Adding PHE's differentiated capabilities fortifies its approach to helping life sciences companies deliver more effective treatments to patients.	N/A	N/A	N/A	N/A
4/16/2015	Qforma, Inc	Veeva Systems Inc. (NYSE: VEEV)	California-based Veeva Systems acquired New Jersey-based Qforma a social network analytics, product launch management, and stakeholder engagement solutions provider. Through this acquisition, it gained access to specialized expertise in KOL data, analytics, and engagement planning.	10.0	10.0	N/A	N/A
3/20/2015	Cambridge BioMarketing Group, LLC	Everyday Health, Inc. (NYSE:EVYD)	New York-based Everyday Health acquired Massachusetts-based Cambridge BioMarketing, a healthcare marketing communications agency. The purchase will broaden its strategic marketing and communications solutions to pharmaceutical brands targeting the orphan and rare disease segments of the market.	38.9	38.9	2.5x	11.9x
3/18/2015	Florida Healthcare Analytics, Inc	Clinical Ink, Inc	North Carolina-based Clinical Ink acquired Florida Healthcare Analytics, a mobile applications developer for clinical trial patient engagement. Through this acquisition, Clinical Ink has access to more advanced patient engagement services.	N/A	N/A	N/A	N/A
3/3/2015	Via Media Health Communications Pvt. Ltd.	Ebix, Inc. (NasdaqGS:EBIX)	Georgia-based Ebix's subsidiary A.D.A.M acquired Via Media, a provider medical content and communication services to the health sector in India. Through the acquisition, A.D.A.M gains access to a wide range of content and communication services in the health sector in India.	N/A	N/A	N/A	N/A
3/2/2015	MediMedia Pharma Solutions	ICON Public Limited Company (NasdaqGS:ICLR)	Ireland-based ICON acquired Pennsylvania-based MediMedia Pharma Solutions, a division of MediMedia U.S.A. This acquisition strengthens ICON's expertise in scientific communications and market access and helps creates the industry's leading integrated scientific communications and market access solution.	120.0	120.0	N/A	N/A
3/2/2015	Activate Networks, Inc	Decision Resources, Inc	Massachusetts-based Decision Resources has acquired Kansas-based Activate Networks, a software solutions provider. This acquisition builds on the data driven solutions and predictive analytics offerings that are critical for life sciences organizations.	N/A	N/A	N/A	N/A
2/20/2015	Rosetta Marketing Group, LLC	Publicis Groupe S.A. (ENXTPA:PUB)	Publicis subsidiary Razorfish Healthcare acquired New Jersey-based Rosetta, a group focused on customer engagement. The new Razorfish Health has a stronger competitive position with its combined expertise in engagement, innovation, and technology.	N/A	N/A	N/A	N/A

## Comparable Transaction Analysis, cont'd.

Date Closed	Target	Acquirer	Transaction Description	Transaction Value (\$M)	Enterprise Value (\$M)	EV*/ Revenue	EV*/ EBITDA
2/19/2015	TransEngen, Inc.	VirMedica, Inc.	Pennsylvania-based VirMedica acquired Connecticut-based TransEngen, a technology solutions provider. By acquiring TransEngen's TIER4 technology, VirMedica expands its customer reach to include contractual relationships with 5 of the top 10 pharmaceutical organizations worldwide.	N/A	N/A	N/A	N/A
2/17/2015	GxP Systems Limited	Stericycle, Inc. (NasdaqGS:SRCL)	Illinois-based Stericycle acquired Ireland-based GxP Systems Limited, a validation and compliance services provider. GxP Systems helps expand its business into the regulatory compliance sector.	N/A	N/A	N/A	N/A
1/29/2015	CRF Health, Inc.	Vitruvian Partners LLP	UK-based Vitruvian Partners is seeking to realize growth in all areas of Pennsylvania-based CRF Health's business as pharmaceutical sponsors recognize the quality gains in clinical trial data provided by the use of electronic Clinical Outcome Assessments, or eCOA.	N/A	N/A	N/A	N/A
1/15/2015	Five Oaks Pharm, LLC	Drug Safety Navigator, LLC	North Carolina-based Drug Safety Navigator's acquisition of Five Oaks Pharm, based in North Carolina, expands its drug safety and pharmacovigilance services. The new services include adverse event case management and medical information support.	N/A	N/A	N/A	N/A
1/8/2015	Bird & Schulte Advertising GmbH (60% stake)	Havas (ENXTPA:HAV)	France-based Havas acquired Bird & Schulte Advertising, a German agency offering a full spectrum of services for Rx and OTC, including advertising, digital media, events and medical education. The acquisition will help Havas reach a broader health & wellness market through Bird & Schulte's brand-building expertise.	N/A	N/A	N/A	N/A
1/6/2015	Siren Interactive Corporation	The F. Dohmen Co.	The acquisition of Siren Interactive, a rare disease relationship marketing company located in Illinois, expands Wisconsin-based Dohmen's market leading direct-to-patient service model, by helping life science companies in the rare disease space locate, educate and interact with the patients they serve.	N/A	N/A	N/A	N/A
1/5/2015	ClinGenuity, LLC	Certara, L.P.	New Jersey-based Certara acquired Ohio-based ClinGenuity, the only artificial intelligence-assisted medical writing service in the pharma industry. The combined team includes more than 200 regulatory and medical writers with expertise in document development for global regulatory organizations.	N/A	N/A	N/A	N/A
12/9/2014	Worldwide Promedica, Inc.	Cello Group Plc (AIM:CLL)	The acquisition of California-based Worldwide Promedica, a full-service market research consulting firm specializing in new product planning for life sciences companies, falls in line with U.K.-based Cello Group's expansion strategy in the US, opening up opportunities for growth on the west coast.	2.5	2.5	1.3x	N/A
12/2/2014	Ubiquity Group	The Bawmann Group, Inc.	The Bawmann Group acquired Ubiquity Group, a biotech and medical technology marketing company, to expand its marketing communication capabilities past its current focus on the healthcare, education, social services, entertainment, agriculture and nonprofit fields. Both companies are based in Colorado.	N/A	N/A	N/A	N/A
12/2/2014	Oakstone Publishing, LLC	Ebix, Inc. (NasdaqGS:EBIX)	Georgia-based Ebix acquired Alabama-based Oakstone, providing continuing education and certification materials for physicians, dentists and allied healthcare professionals. Oakstone's publications complement Ebix's wellness services, creating new channels to its existing customer base.	N/A	N/A	N/A	N/A
11/30/2014	Lacerta Bio Inc.	Ventac Partners A/S	The partnership between Denmark-based Ventac and New York-based Lacerta helps Lacerta to expand more quickly in the U.S. Lacerta is a pharmaceutical business development consultancy, specializing in licensing and partnership opportunities for pharma, biotech and other life science companies.	N/A	N/A	N/A	N/A
11/14/2014	TGaS Advisors	Trientis Vitae	TGaS Advisors, a Pennsylvania-based provider of advisory and benchmarking services to biopharma companies, has been acquired by Trientis Vitae, a newly formed group run by management. Through this acquisition, Trientis Vitae expands its service focus from biopharma, to other new sectors within healthcare.	N/A	N/A	N/A	N/A
11/12/2014	DoctorDirectory.com, Inc.	Everyday Health, Inc. (NYSE: EVDY)	Through the acquisition of North Carolina-based Doctor Directory, a provider of marketing solutions for healthcare specialists, New York-based Everyday Health enhances its physician reach and marketing solutions for its clients.	N/A	N/A	N/A	N/A
11/12/2014	HBE Solutions LLC	Truven Health Analytics Inc.	Through the acquisition of New York-based HBE, a provider of stakeholder management solutions, Michigan-based Truven provides its life science clients with a complete solution for finding and meeting key individuals in the approval process, as well as helping appraise the value of medical devices and new drugs.	15.2	15.2	N/A	N/A
10/29/2014	Epidemico, Inc.	Booz Allen Hamilton Holding Corporation (NYSE:BAH)	Massachusetts-based Epidemico purchase by Virginia-based Booz Allen targets growing areas like health care and invests in innovative technologies. Epidemico offers health data collection and analytics solutions and services including an online mapping tool that tracks the spread of diseases using a computer algorithm.	N/A	N/A	N/A	N/A
10/10/2014	SyMetric Life Sciences	Indovation Technologies Limited (BSE:521005)	Indovation, a India-based distributor of instruments and electronic equipment to various process control industries, acquired India-based SyMetric to expand its product offerings. SyMetric provides pharma solutions and services such as a clinical data management system and computerized psychometrics tests.	2.5	2.5	N/A	N/A
10/7/2014	Element Marketing Group Inc.	WPP plc (LSE:WPP)	U.K.-based WPP acquired Connecticut-based Element Marketing to strengthen its healthcare communications capabilities. Element Marketing provides clients in the pharmaceutical and biotech industries with improved communication, marketing and reimbursement solutions.	N/A	N/A	N/A	N/A
10/7/2014	Cadient Group, Inc.	Cognizant Technology Solutions Corporation (NasdaqGS:CTSH)	The acquisition of Pennsylvania-based Cadient Group further strengthens and expands New Jersey-based Cognizant's digital marketing capabilities. Cadient is a full-service digital marketing agency that serves a broad spectrum of life sciences companies.	N/A	N/A	N/A	N/A
9/29/2014	SABRE Health & Safety, LLC.	Trinity Consultants, Inc.	The acquisition helps Texas-based Trinity gain occupational health and safety professionals and new clients as well as expands its capabilities into pharmaceutical occupational health sciences. SABRE is a Pennsylvania-based full service health and safety consulting firm focused on occupational health & safety.	N/A	N/A	N/A	N/A
9/24/2014	Strategic Directions International, Inc.	Bioinformatics, LLC	This acquisition strengthens Virginia's Bioinformatics' position in the life sciences. SDi is a California-based strategic management consulting and market intelligence provider for the analytical equipment industry.	N/A	N/A	N/A	N/A
9/23/2014	Technology Partners S/C Ltda and 50% of Empowered Company Strategy	InterPlayers Group, The	The acquisition of two Brazil-based companies follows InterPlayers' growth strategy and strengthens its position as a full provider of health and wellness solutions in Brazil. Technology Partners offers ecommerce solutions for the B2B market. Empowered Company Strategy provides information technology services.	N/A	N/A	N/A	N/A
9/15/2014	Evidências	WPP plc (LSE:WPP)	The acquisition is consistent with WPP's commitment to developing its strategic networks throughout the Brazilian market. Evidências, based in Brazil, provides consultancy and research services in pharmacy-economic studies and analysis.	N/A	N/A	N/A	N/A
9/2/2014	Cognigen Corporation	Simulations Plus, Inc. (NasdaqCM: SLP)	California-based Simulations Plus merged with New York-based Cognigen to improve its position as a leading provider of simulation and modeling software for pharmaceutical drug discovery and development.	7.0	7.0	N/A	N/A
8/31/2014	The Planning Shop International Limited	Omnicom Group Inc. (NYSE:OMC)	The acquisition of The Planning Shop international (TPSI) by Adelphi, a subsidiary of Omnicom, strengthens Adelphi's global research and insight capabilities in the United States and Europe. TPSI is a U.K.-based healthcare brand and research agency.	N/A	N/A	N/A	N/A



## Comparable Transaction Analysis, cont'd.

Date Closed	Target	Acquirer	Transaction Description	Transaction Value (\$M)	Enterprise Value (\$M)	EV*/ Revenue	EV*/ EBITDA
8/4/2014	Penn Pharmaceutical Services Limited	Packaging Coordinators, Inc.	The acquisition of U.K.-based Penn Pharmaceutical Services complements Pennsylvania-based Packaging Coordinators' own growth in Clinical Trial and Commercial supply services with new drug development, manufacturing, and packaging service capabilities.	215.8	215.8	4.2x	N/A
7/14/2014	Phlexglobal Ltd.	Bridgepoint Development Capital	Bridgepoint Development Capital, a U.K. private equity fund, acquired Pennsylvania-based Phlexglobal, a provider of electronic trial master file solutions and services, in order to support the business across its growth.	71.8	71.8	2.7x	9.3x
7/8/2014	MFRHRC Holdings Limited	UDG Healthcare plc (LSE:UDG)	UDG purchased U.K.-based specialist healthcare and scientific public relations (PR) businesses, Galliard and Nyxeon (MFRHRC Holdings), in order to further its strategy of globally expanding its healthcare communications business.	22.3	22.3	2.3x	N/A
7/2/2014	Encore Health Resources, LLC	Quintiles Transnational Holdings Inc. (NYSE:Q)	The acquisition of Texas-based health-information analytics and technology services firm Encore Health Resources bolsters Quintiles' expertise in health-information analytics services and creates a strong foundation for an expanded suite of services.	N/A	N/A	N/A	N/A
7/1/2014	Aileron Solutions, LLC	IMS Health Incorporated	The acquisition of Pennsylvania-based Aileron provides IMS with additional data insights, including claims-based targeting data and longitudinal patient data. The combined practice accelerates services, providing increased value in data insights for life sciences clients.	N/A	N/A	N/A	N/A
7/1/2014	GXP Ltd.	Formpipe Software AB (OM:FPPIP)	In order to strengthen its product offering and boost its international expansion plan, Sweden-based Formpipe acquired U.K.-based GXP, a well-known provider of regulatory and compliance software solutions.	8.3	8.3	3.9x	NM
6/30/2014	AVID Design, Inc.	Myelin Health Communications, Inc.	Baird Capital-owned Myelin Health, based in Massachusetts, acquired Georgia-based AVID Design, an online marketing, communication, and technical services firm for health care companies, in order to strengthen its marketing communication services.	N/A	N/A	N/A	N/A
6/30/2014	C3i, Inc.	Merck & Co. Inc. (NYSE:MRK)	The acquisition of Pennsylvania-based C3i gives New Jersey-based Merck & Co access to technology training support solutions for the clinical and pharmaceutical sales industry.	N/A	N/A	N/A	N/A
6/25/2014	MedHelp International, Inc.	Physicians Interactive, Inc.	The acquisition of California-based MedHelp International, an online health community and health application site, drives Massachusetts-based Physicians Interactive's growth into the online consumer health space, assisted by MedHelp's healthcare quantification and socialization solutions.	N/A	N/A	N/A	N/A
6/12/2014	SimBioSys Inc.	John Wiley & Sons Inc. (NYSE:JWA)	The acquisition of SimBioSys accelerates the development of Wiley Science Solutions, a New Jersey-based integrated suite of workflow tools for researchers. SimBioSys provides scientific software tools to facilitate drug discovery in Canada.	N/A	N/A	N/A	N/A
6/2/2014	RJ Health Systems International, LLC	Fitzroy Health, LLC	The acquisition of Connecticut-based RJ Health allows New York-based Fitzroy to expand its products and services offerings. RJ Health provides pharmaceutical reimbursement and coding information and services.	N/A	N/A	N/A	N/A
5/30/2014	Deloitte Analytics LLC	TrialScope Inc.	TrialScope, a New Jersey-based provider of clinical trial solutions, acquired Massachusetts-based Deloitte Analytics, including the PharmaCM business and key personnel. Deloitte Analytics provides technology solutions for clinical trial registration and transparency.	N/A	N/A	N/A	N/A
5/29/2014	Pharmalink Consulting Ltd.	Genpact Ltd. (NYSE:G)	The acquisition of U.K.-based Pharmalink helps Bermuda-based Genpact expand capabilities in core life sciences R&D functions such as regulatory strategy, filings, complex compliance services, patient safety and management of post-licensing activities.	N/A	N/A	N/A	N/A
5/24/2014	Facilitate Ltd.	Fishawack Communications Ltd.	U.K.-based Fishawack acquired Facilitate, a British medical communications firm, to fulfill its buy and build acquisition strategy.	N/A	N/A	N/A	N/A
5/21/2014	Infotehna Group LLC	Rheinisch-Bergische Druckerei GmbH	The acquisition of Infotehna helps eurosript, a subsidiary of German Rheinisch-Bergische Druckerei, pursue its market development strategy and strengthen its life sciences segment. INFOTEHNA is a Slovenia-based life sciences regulatory & compliance content management software vendor.	N/A	N/A	N/A	N/A
5/12/2014	iS Healthcare Dynamics Limited	Cello Group Plc (AIM:CLL)	The acquisition of iS increases Cello's global footprint in medical communications. iS Healthcare Dynamics, a healthcare communications agency, provides medical communication services to U.K., European and global healthcare clients. Both companies are based in the U.K.	9.7	9.7	0.9x	N/A
5/8/2014	Forcea NV/SA	IMS Health Holdings, Inc. (NYSE:IMS)	The acquisition of Forcea allows IMS to strengthen its leadership in business intelligence capabilities focused on care coordination and operating performance. Forcea is a Belgium-based provider of business intelligence applications and analytics for hospitals and life sciences organizations.	N/A	N/A	N/A	N/A
5/1/2014	Pi2 Solutions Ltd.	ProQuest LLC	The acquisition of U.K.-based Pi2 increases Michigan-based ProQuest's presence in the pharmaceutical industry. Pi2 provides biopharmaceutical literature and workflow software solutions. The joint business improves and simplifies drug safety workflows in the industry.	N/A	N/A	N/A	N/A
4/15/2014	IRB Services (Ltd.)	Chesapeake Research Review, Inc.	IRB Services is an Ontario-based independent institutional review board services provider. The acquisition expands Maryland-based Chesapeake's ability to serve customers based in Canada.	N/A	N/A	N/A	N/A
4/11/2014	Simpler Consulting, L.P.	Truven Health Analytics Inc.	Michigan-based Truven's analytics offerings are combined with Iowa-based Simpler's performance management consulting capabilities to serve providers, government agencies, payers and life sciences companies.	80.0	80.0	N/A	N/A
4/7/2014	Trinity Pharma Solutions, LLC	Health Enterprise Partners, Milestone Venture Partners	Trinity Pharma Solutions, a Massachusetts-based cloud provider of data and analytics solutions for healthcare enterprises, has received funding to accelerate investments in product development, sales and delivery, partnerships, and new locations in California and New York.	19.0	N/A	N/A	N/A
4/1/2014	BioPharm Systems, Inc.	Perficient Inc.	BioPharm Systems Inc. is a California-based IT consulting firm focused on the life science industry. The acquisition expands Missouri-based Perficient's industry vertical expertise with the addition of a dedicated life sciences vertical and adds client relationships with leading life sciences enterprise customers.	17.6	17.6	N/A	N/A
3/25/2014	Hobart Group Holdings, LLC	Precision for Medicine, Inc.	The acquisition of New Jersey-based Hobart enhances Maryland-based Precision's drug development and commercialization platform. Hobart is a payer-focused strategic communications agency that provides managed care services for pharma and biotech companies in the United States.	N/A	N/A	N/A	N/A
3/25/2014	Goodwyn Institutional Review Board, Ltd.	Chesapeake Research Review, Inc.	The acquisition of Ohio-based Goodwyn IRB enhances Maryland-based Chesapeake's operational expertise and commitment to human protection. Goodwyn is an asset as Chesapeake continues to build its market presence as a leading independent IRB.	N/A	N/A	N/A	N/A

## Comparable Transaction Analysis, cont'd.

Date Closed	Target	Acquirer	Transaction Description	Transaction Value (\$M)	Enterprise Value (\$M)	EV*/ Revenue	EV*/ EBITDA
3/18/2014	KnowledgePoint360 Group LLC	United Drug plc (nka:UDG Healthcare plc) (LSE:UDG)	Irish firm UDG Healthcare acquired New Jersey-based KP360's healthcare communications business, making UDG a market leader in the global healthcare communications market.	144.0	144.0	1.4x	7.2x

Representative transactions only include closed deals with publicly available sales data.  
Source: Capital IQ and Public Findings  
\*Enterprise Value (EV) = market capitalization + debt + noncontrolling interest

Maximum	4.3x	27.5x
Mean	2.0x	13.9x
Median	1.7x	13.9x
Minimum	0.1x	6.3x