

Healthcare Investment Banking Q2 2023 Update



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## **OUR DEDICATED HEALTHCARE TEAM**

Healthca	ng Director, nre an@cs-ib.com	<ul> <li>Mr. Leiderman has successfully led numerous transactions, as well as conducted strategic advisory work for companies in the healthcare and life sciences sectors.</li> <li>Previous Experience: Founder &amp; MD, Long Trail Advisors, LLC; Co-Head – Healthcare Group, Ladenburg Thalmann &amp; Co. Inc.; Head of IB, Punk Ziegal &amp; Co.</li> <li>Former Board Involvement: Apthera, Inc. – Executive Chairman, Collplant Ltd., Marinesurgical, Inc., and Camp Ramah.</li> </ul>
Managin Healthca	ocs-ib.com	<ul> <li>Dr. Aghib leverages 26 years of executive experience, broad scientific knowledge, and significant international expertise to develop long-term, cross-border and inter-industry strategies for business development, licensing, spinoffs, and M&amp;A.</li> <li>Previous Experience: Chief Business Development Officer, Stellar Biotechnologies; Vice President of Business Development and Strategy, Neuro-Zone; Chief Business Development and Strategy Officer, Dianax; Founder &amp; Managing Director, DFA Advisors; Consultant, CRG, LP.</li> <li>Board Involvement: Neuro-Zone, CellPly, ImmunGene, OpenWorm Foundation, SF Art and Film, Stellar Biotechnologies – Strategic Investment, M&amp;A, Audit, and Corporate Governance Committees (Prior).</li> <li>Ph.D., University of Milan; Ph.D., University of Pavia; B.S./M.S., University of Milan; Industry 4.0, Sant'Anna School of Advanced Studies, Pisa.</li> </ul>
Managin Healthca mfischb 305-438	ein@cs-ib.com 3-7816	<ul> <li>Ms. Fischbein has a long track record of successfully advising clients in the healthcare industry on M&amp;A and licensing transactions and public and private equity and debt financings, as well as providing strategic advisory services.</li> <li>Previous Experience: Managing Director and Head of Healthcare Investment Banking, Seaport Global and FBR &amp; Co.; Managing Director and Head of East Coast Biotechnology, JMP Securities; Vice President Business Development, Human Genome Sciences; Vice President Business Development, ImClone Systems; Managing Director Investment Banking, Citigroup and JP Morgan Chase; Senior Vice President, Lehman Brothers.</li> <li>Board Involvement: Cytodel, Harvard Business School Club of New York, and Harvard Business School Club of South Florida.</li> <li>M.B.A, Harvard Business School; B.A. Harvard University.</li> </ul>
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# **ABOUT OUR FIRM**

 Cassel Salpeter & Co., LLC is a boutique investment banking firm focused on providing independent and objective advice to middle-market and emerging growth companies. We can help.

## **Mergers & Acquisitions**

- Financial advisory
- Sales to strategic and private equity buyers
- Divestitures to strategic and private equity buyers
- Buy-side acquisition programs
- Leveraged & management buyouts
- Going private transactions

## **Capital Raising**

- Financial advisory
- Equity and debt private placements
- Growth capital
- PIPEs
- Recapitalizations

## **Other Services**

- Fairness opinions
- Solvency opinions
- Valuations
- Restructuring, refinancing, and distressed M&A transactions
  - Debtor and creditor representations
  - §363 sales & plans of reorganization



James Cassel Chairman



Laura Salpeter Director



Scott Salpeter President



Marcus Wai Vice President



Philip Cassel Managing Director



Chris Mansueto Vice President



Ira Leiderman Managing Director



Edward Kropf Associate



Deborah Aghib Managing Director



Tahz Rashid Associate



ein Josep



Charles Davis Associate





Francisco Belliard Analyst

2



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## **AI'S IMPACT ON HEALTHCARE**

- II M&A & PRIVATE PLACEMENTS REVIEW
- III PUBLIC MARKETS REVIEW





# AI AND THE HEALTHCARE ECOSYSTEM

We are being inundated with the term "AI." It seems like AI, or artificial intelligence, is all that people are talking about. All of these discussions make it sound like AI will lead to the end of civilization. Let us all take a deep breath and ask ourselves: what is AI, where did it come from, and in the realm of healthcare is it all bad?

Before we explore the use of AI and how it may improve the healthcare ecosystem, let us review what AI is and not look at it with suspicion. And by its proper use, we will not be inviting Dr. Kevorkian into our midst.

Contrary to how it is portrayed in the media, AI is not new. But how does it work? Let us first look at the human brain, which is an amazing product of evolution. Through the interaction of a myriad of complex chemicals and networks of cells, the brain gathers information through various inputs. The eyes, ears, nose, tongue, etc. feed the brain with information or data, which it then processes and stores. How the brain does all this continues to be learned and understood, but there is still much to be studied and discerned; it still leaves us in wonder.

Al is quite sophisticated and amazing in its own way, but obviously operates without complex compounds and networks of cells. Al is based on algorithms that are mathematical and computational methods that enable computers to perform specific tasks and learn from the inputted data. So, each algorithm is designed to analyze and interpret inputted data to predict and solve different types of problems and tasks and does not always come up with the same or right answers.

Over the past several years, we have witnessed the rapid development of more sophisticated algorithms that enable artificial intelligence systems to perform specific tasks and learn from data. With the help of these human and machine developed algorithms, computers sort through the inputted data and "think" about an answer that it "believes" is correct. Currently, it does all this without the influence of intangible human factors, such as emotion, moral standards, and other attributes that go into human decision-making. So even though the computer output is "human-like," it is not, at least for now, human.



# AI AND THE HEALTHCARE ECOSYSTEM (CONT.)

The benefits of AI include its ability to sort through massive amounts of data while simultaneously handling new data inputs that are being added, either manually or through data scraping. AI has the ability to run through vast data sets, and to utilize specific algorithms to predict and solve a query or a series of questions. For instance, if we are interested in predicting the onset of Type 2 diabetes in a specific population, AI can be programmed to review vast amounts of laboratory results (with patient identifiers removed) and analyze known indicators, such as hemoglobin A1c and blood glucose levels. Through this analysis the system may identify patterns and predict outcomes that are suggestive of developing diabetes in specific populations.

We live in a time of "big data." Vast troves of information are gathered and stored about every one of us. These data sets can contain information about our health, the drugs we take, the food we buy, and of course, the environments in which we live. Al allows for the simultaneous analysis of all these data points and looks at them in an almost infinite number of combinations and permutations. This capability can be worrying if you are a conspiracy theorist or if you have a general distrust of government and big business. Though these concerns have merit, the benefits of AI in healthcare may outweigh these concerns if the AI generated analysis is overseen by humans who can override a computer derived answer.

The use of AI in healthcare is in its toddlerhood. A toddler runs from place to place with what may appear to be no rhyme or reason. But, in reality, the child is exploring, experimenting, and learning, as is the case of AI, which is finding its place in healthcare. But we need to proceed with caution and with human oversight.

Let us start with clinical medicine. In the television series "Star Trek: Voyager," the doctor and nurse aboard the U.S.S. Voyager are killed, and the crew is forced to rely on the Emergency Medical Hologram or EMH. The EMH is an AI-powered holographic image which serves as the ship's physician. Science fiction? Maybe today, but perhaps not in the near future. AI is starting to be used in several aspects of clinical medicine, and usage is expanding. In the pathology lab, AI systems have been trained to work with image processing tools to rapidly and thoroughly review images of tissue slides or cells and provide the pathologist with an uncanny amount of clinically relevant information. We can provide additional examples of the uses of AI, but you can use your imagination to understand the importance of AI tools in medicine. AI is a powerful tool, but for now the analysis that it generates lacks the human considerations that are so important when providing clinical care. For the foreseeable future, human medical practitioners will not be replaced by a computer.



## AI AND THE HEALTHCARE ECOSYSTEM (CONT.)

Another area of the healthcare ecosystem that will be impacted by AI is the monitoring of infectious diseases. As we discussed in an earlier report, municipal wastewater is being monitored to look for and track infectious diseases. Machine learning algorithms are a perfect example of where AI can assist in increasing our public health vigilance, helping us head off the next pandemic and possibly accelerating future vaccine development.

Predictive analytics is another area ripe for the deployment of AI tools. AI can be utilized to analyze patient data to predict disease progression and identify high-risk patients who may need early interventions or just need additional monitoring.

Stepping back from these examples in clinical medicine, let us look at areas of research where AI will undoubtedly have an impact. The sequencing of the human genome in October 1990 was the greatest accomplishment of biology in the 20th century. The human genome project, completed 13 years later, gave us a map of hundreds of million letters of genetic code. AI is perfect for helping us make sense of these data and unlocking the secrets of hundreds of diseases, possibly aiding us in understanding aging and the ailments so common in the elderly. In fact, any areas that have and continue to produce vast troves of data are perfect milieus for the use of AI.

Drug discovery is another area for which AI will be an invaluable tool. Millions of compounds have been synthesized, however the vast majority of them "sit on the shelf." With techniques powered by AI, many of these compounds can be screened and deemed druggable in ways that may today sound like fiction. In addition, AI is guiding molecular biologists and protein engineers in their quests to develop more specific protein and antibody-based therapeutics with greater specificity and fewer toxicities.

In future reports, we plan to look at some of these areas in depth and hope to demonstrate that when properly used, AI is not to be feared, but is rather a powerful tool in our chest that can help us improve our lives. By pairing promising AI technology with our own human insight, ethics, and morality, we can make monumental strides in improving the healthcare ecosystem.



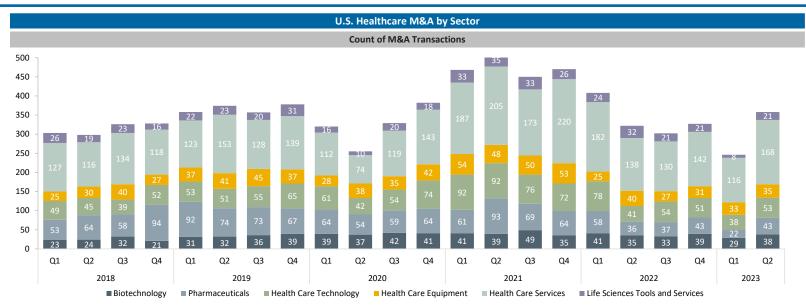
## I AI'S IMPACT ON HEALTHCARE

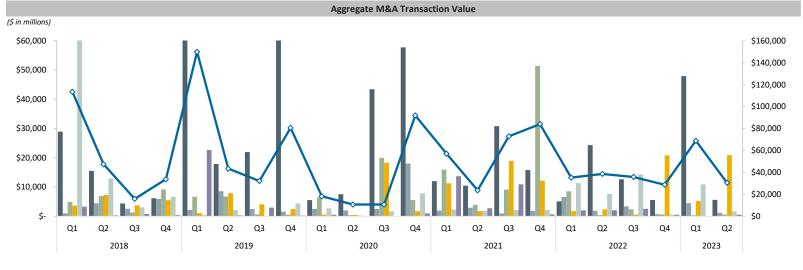
# II M&A & PRIVATE PLACEMENTS REVIEW III PUBLIC MARKETS REVIEW





## **M&A OVERVIEW**



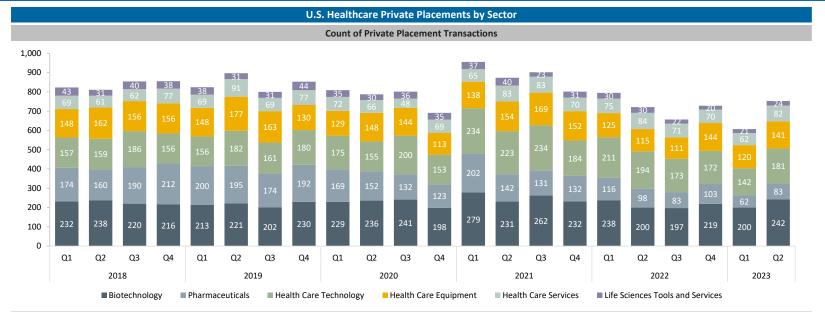


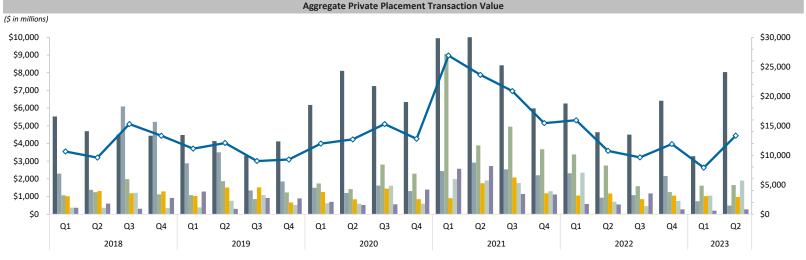
Biotechnology Marmaceuticals Marmaceuticals Health Care Technology — Health Care Equipment Health Care Services Life Sciences Tools and Services 🛶 Total M&A Value

Note: Q1 2018 total transaction value for Health Care Services was \$71,655 and Q1 2019 total transaction value for Biotechnology was \$116,936.



## **PRIVATE PLACEMENT OVERVIEW**







## I AI'S IMPACT ON HEALTHCARE

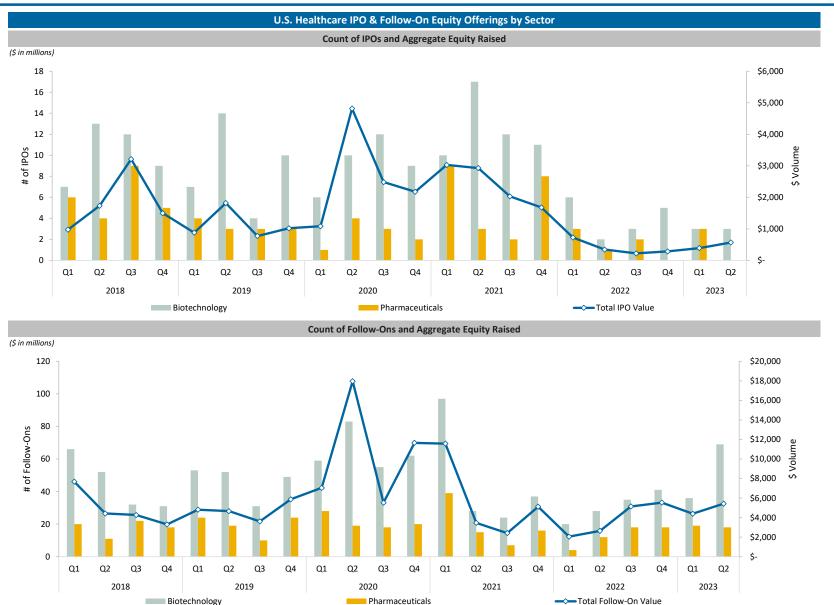
II M&A & PRIVATE PLACEMENTS REVIEW

## III PUBLIC MARKETS REVIEW





## EQUITY OFFERINGS OVERVIEW BY SECTOR

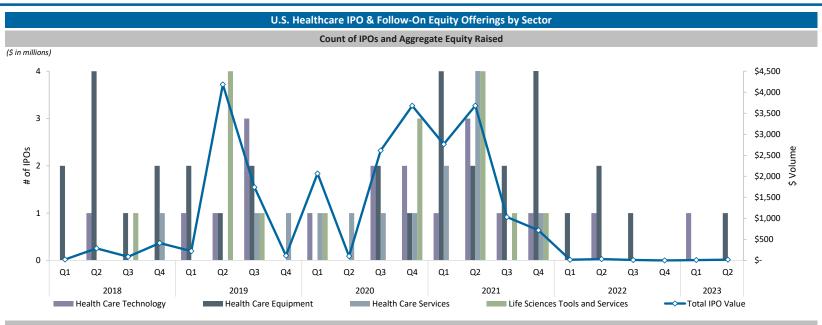




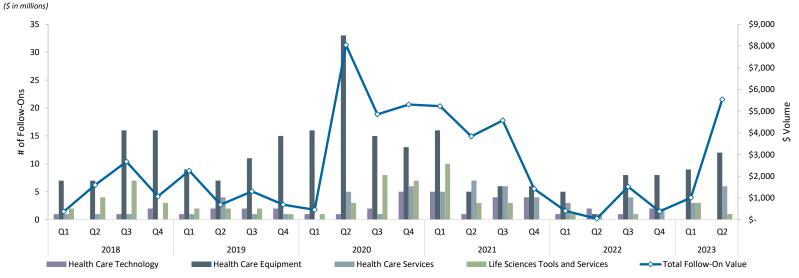


## EQUITY OFFERINGS OVERVIEW BY SECTOR (CONT.)

### Healthcare Investment Banking



Count of Follow-Ons and Aggregate Equity Raised

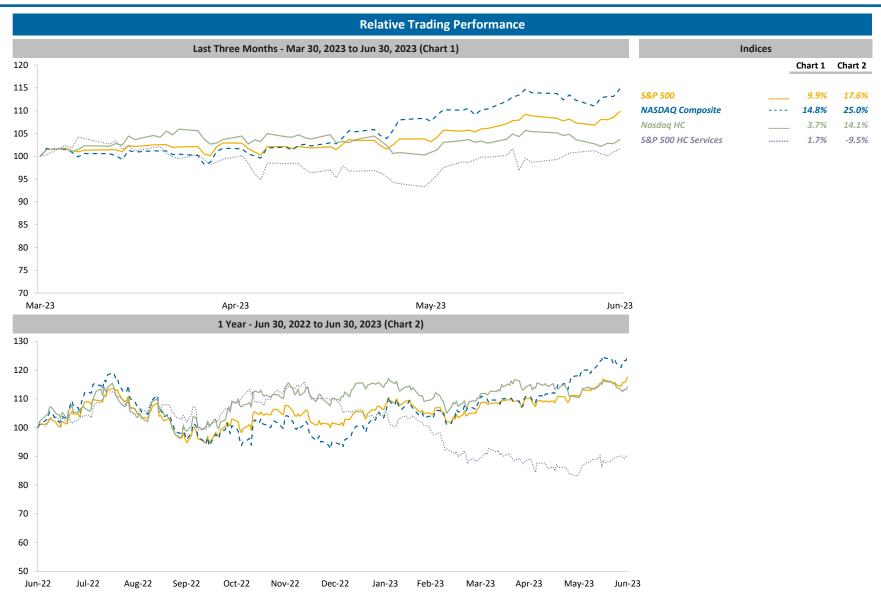


Note: Q2 2021 total count of IPOs for Health Care Services was 5 and Q4 2021 total count of IPOs for Health Care Equipment was 8.

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## **SELECTED MARKET INDICES**





## **SELECTED PUBLIC COMPANIES – PHARMA**

				S	elected Comp	ban	ies Revie	ew								
(\$ in thousands, except per security)																
		_		Market Statistics		_			Me	trics		Valuation Benchmarks				
		Clo	sing Price	% of 52-week	Enterprise	R	levenue		EBITDA	EBITDA	EBITDA	EV / Re	venue	EV / EI	BITDA	
Company	Ticker	30	)-Jun-23	High-Low	Value		LTM		LTM	LTM Margin	2022 E Growth	LTM	2021 E	LTM	2021 E	
Vaccines																
AstraZeneca PLC	LSE:AZN	\$	143.29	91.0% - 118.7%	\$ 248,828.4	\$	43,840.0	\$	15,074.0	34.4%	26.5%	5.68x	6.87x	16.5x	23.0x	
Bavarian Nordic A/S	CPSE:BAVA	\$	28.44	47.2% - 113.5%	1,790.2		595.4		125.3	21.1%	329.5%	3.01x	6.16x	14.3x	nm	
BioNTech SE	NasdaqGS:BNTX	\$	107.93	57.1% - 107.8%	12,739.2		13,269.2		8,828.6	66.5%	-15.9%	0.96x	0.65x	1.4x	0.8x	
CSL Limited	ASX:CSL	\$	184.61	88.3% - 103.8%	101,601.7		11,704.2		3,445.9	29.4%	2.3%	8.68x	9.72x	29.5x	29.7x	
CureVac N.V.	NasdaqGM:CVA0	\$	10.42	66.7% - 185.1%	1,706.0		54.5		(246.0)	-451.2%	-63.7%	31.29x	20.09x	na	na	
Dynavax Technologies Corporation	NasdaqGS:DVAX	\$	12.92	73.9% - 137.2%	1,285.0		655.6		267.3	40.8%	177.8%	1.96x	2.86x	4.8x	12.5x	
GSK plc	LSE:GSK	\$	17.65	60.9% - 108.4%	88,574.6		35,982.0		11,927.2	33.1%	-18.0%	2.46x	1.92x	7.4x	6.5x	
Inovio Pharmaceuticals, Inc.	NasdaqGS:INO	\$	0.45	15.8% - 116.7%	(75.3)		10.2		(235.9)	-2317.8%	-5.0%	-7.40x	-51.51x	na	na	
Johnson & Johnson	NYSE:JNJ	\$	165.52	91.4% - 110.3%	461,776.0		96,263.0		33,301.0	34.6%	-1.5%	4.80x	4.90x	13.9x	14.0x	
Merck & Co., Inc.	NYSE:MRK	\$	115.39	96.4% - 136.5%	313,663.5		57,869.0		22,367.0	38.7%	24.4%	5.42x	6.49x	14.0x	15.9x	
Moderna, Inc.	NasdaqGS:MRNA	\$	121.50	55.9% - 105.6%	32,740.5		15,059.0		5,174.0	34.4%	-20.4%	2.17x	1.82x	6.3x	2.6x	
Novavax, Inc.	NasdaqGS:NVAX	\$	7.43	9.7% - 132.6%	262.9		1,358.9		(1,135.5)	-83.6%	na	0.19x	0.21x	na	na	
Pfizer Inc.	NYSE:PFE	\$	36.28	66.0% - 101.4%	223,708.4		92,951.0		40,637.0	43.7%	52.1%	2.41x	2.74x	5.5x	7.6x	
Sanofi	ENXTPA:SAN	\$	107.21	93.4% - 128.4%	143,715.2		50,194.5		15,639.4	31.2%	16.2%	2.86x	3.35x	9.2x	10.7x	
		Ме	an	65.3% - 121.9%	\$ 116,594.0	\$	29,986.2	\$	11,083.5	-174.6%	38.8%	4.61x	1.16x	11.2x	12.3x	
		Me	dian	66.4% - 115.1%	\$ 60,657.5	\$	14,164.1	\$	7,001.3	33.8%	2.3%	2.66x	3.10x	9.2x	11.6x	

Market value equals price per share times number of diluted shares outstanding. Enterprise value equals market value plus debt, preferred stock, and non controlling interests, less cash.





## **SELECTED PUBLIC COMPANIES – PHARMA (CONT.)**

				Se	lected Comp	anies Revie	ew							
(\$ in thousands, except per security)														
				<b>Market Statistics</b>				Me	trics			Valuation E	Benchmarks	
		Clo	sing Price	% of 52-week	Enterprise	Revenue		EBITDA	EBITDA	EBITDA	EV / Re	venue	EV / EB	ITDA
Company	Ticker	30	-Jun-23	High-Low	Value	LTM		LTM	LTM Margin 2	022 E Growth	LTM	2021 E	LTM	2021 E
Neurology														
AbbVie Inc.	NYSE:ABBV	\$	133.25	79.3% - 101.8%	\$ 293,828.1	\$ 56,741.0	\$	29,523.0	52.0%	6.9%	5.18x	5.22x	10.0x	10.1x
Biogen Inc.	NASDAQ:BIIB	\$	284.85	89.1% - 147.1%	41,810.5	10,104.6		3,377.6	33.4%	-11.9%	4.14x	3.85x	12.4x	9.6x
Eli Lilly and Company	NYSE:LLY	\$	468.98	99.8% - 158.3%	459,930.9	27,691.4		9,154.0	33.1%	-2.8%	16.61x	16.31x	nm	47.1x
Johnson & Johnson	NYSE:JNJ	\$	165.52	91.4% - 110.3%	461,776.0	96,263.0		33,301.0	34.6%	-1.5%	4.80x	4.90x	13.9x	14.0x
Pfizer Inc.	NYSE:PFE	\$	36.28	66.0% - 101.4%	223,708.4	92,951.0		40,637.0	43.7%	52.1%	2.41x	2.74x	5.5x	7.6x
Regeneron Pharmaceuticals, Inc.	NasdagGS:REGN	\$	718.54	85.8% - 127.4%	67,649.0	12,369.9		5,076.8	41.0%	-36.5%	5.47x	4.31x	13.3x	7.0x
Roche Holding AG	SWX:ROG	\$	305.63	81.4% - 106.8%	270,411.5	71,837.5		26,701.4	37.2%	-5.0%	3.76x	3.96x	10.1x	9.6x
Sanofi	ENXTPA:SAN	Ś	107.21	93.4% - 128.4%	143,715.2	50,194.5		15,639.4	31.2%	16.2%	2.86x	3.35x	9.2x	10.7x
Takeda Pharmaceutical Company Limited	TSE:4502	Ś	31.31	97.5% - 123.6%	78,622.1	30,296.8		9,107.2	30.1%	-6.9%	2.60x	2.65x	8.6x	8.0x
Tonix Pharmaceuticals Holding Corp.	NASDAQ:TNXP	\$	1.58	11.3% - 115.6%	(54.6)	na		(117.5)	na	na	na	na	na	na
		Ме	an	79.5% - 122.1%	\$ 204,139.7	\$ 49,827.7	\$	17,240.0	37.4%	1.2%	5.31x	5.25x	10.4x	13.7x
		Me	dian	87.4% - 119.6%	\$ 183,711.8	\$ 50,194.5	\$	12,396.7	34.6%	-2.8%	4.14x	3.96x	10.0x	9.6x
Anti-Infectives														
Abbott Laboratories	NYSE:ABT	Ś	108.50	93.8% - 116.4%	\$ 198,382.1	\$ 41,505.0	Ś	10,721.0	25.8%	-2.0%	4.78x	4.70x	18.5x	15.8x
Cipla Limited	NSEI:CIPLA	Ś	12.27	84.9% - 118.2%	9,554.4	2,736.6	,	612.1	22.4%	-8.0%	3.49x	3.38x	15.6x	15.7x
Hikma Pharmaceuticals PLC	LSE:HIK	Ś	24.02	96.8% - 161.0%	6,368.0	2,517.0		763.0	30.3%	-7.5%	2.53x	2.54x	8.3x	8.7x
Johnson & Johnson	NYSE:JNJ	Ś	165.52	91.4% - 110.3%	461,776.0	96,263.0		33,301.0	34.6%	-1.5%	4.80x	4.90x	13.9x	14.0x
Merck & Co., Inc.	NYSE:MRK	\$	115.39	96.4% - 136.5%	313,663.5	57,869.0		22,367.0	38.7%	24.4%	5.42x	6.49x	14.0x	15.9x
Viatris Inc.	NasdagGS:VTRS	Ś	9.98	80.5% - 118.5%	30,409.5	15,800.1		5,355.0	33.9%	-9.5%	1.92x	1.70x	5.7x	4.7x
Novartis AG	SWX:NOVN	Ś	100.57	95.8% - 122.7%	228,438.9	52,222.0		18,593.0	35.6%	-7.1%	4.37x	4.40x	12.3x	12.5x
Pfizer Inc.	NYSE:PFE	\$	36.28	66.0% - 101.4%	223,708.4	92,951.0		40,637.0	43.7%	52.1%	2.41x	2.74x	5.5x	7.6x
Sun Pharmaceutical Industries Limited	NSEI:SUNPHARMA		12.77	97.7% - 127.5%	30,142.9	5,344.0		1,433.6	26.8%	0.5%	5.64x	5.99x	21.0x	22.4x
Teva Pharmaceutical Industries Limited	NYSE:TEVA	Ś	7.53	65.8% - 111.1%	28,080.7	14,925.0		3,784.0	25.4%	-3.3%	1.88x	1.74x	7.4x	5.8x
		Ŧ		19.070 111.170	20,000.7	1.,523.0		0,701.0	20.00	0.0,0	2.00%	2.7.18	, X	5.04
		Ме	an	86.9% - 122.4%	\$ 153,052.4	\$ 38,213.3	\$	13,756.7	31.7%	3.8%	3.72x	3.86x	12.2x	12.3x
		Ме	dian	92.6% - 118.3%	\$ 114,395.8	\$ 28,652.6	\$	8,038.0	32.1%	-2.6%	3.93x	3.89x	13.1x	13.2x

Market value equals price per share times number of diluted shares outstanding. Enterprise value equals market value plus debt, preferred stock, and non controlling interests, less cash.



#### **Selected Companies Review**

#### (\$ in thousands, except per security)

				Market Statist	ics		Me	trics		Valuation Benchmarks				
		Clos	sing Price	% of 52-weel	Enterprise	Revenue	EBITDA	EBITDA	EBITDA	EV / Re	venue	EV / E	BITDA	
Company	Ticker	30	)-Jun-23	High-Low	Value	 LTM	LTM	LTM Margin 2	022 E Growth	LTM	2021 E	LTM	2021 E	
Cancer Immunotherapy														
Amgen Inc.	NasdaqGS:AMGN	\$ ۱	222.02	74.8% - 104.9	% \$ 148,763.2	\$ 26,190.0	\$ 13,122.0	50.1%	-0.4%	5.68x	5.72x	11.3x	9.3x	
BioNTech SE	NasdaqGS:BNTX	\$	107.93	57.1% - 107.8	% 12,739.2	13,269.2	8,828.6	66.5%	-15.9%	0.96x	0.65x	1.4x	0.8x	
Bristol-Myers Squibb Company	NYSE:BMY	\$	63.39	77.8% - 100.8	% 164,742.6	45,848.0	19,618.0	42.8%	-6.9%	3.59x	3.55x	8.4x	7.5x	
bluebird bio, Inc.	NasdaqGS:BLUE	\$	3.29	38.3% - 118.3	% 305.2	4.0	(148.3)	-3677.2%	-59.0%	nm	6.36x	na	na	
Celldex Therapeutics, Inc.	NasdaqCM:CLDX	\$	33.93	70.1% - 156.7	% 1,328.5	3.2	(113.0)	-3586.1%	na	nm	nm	na	na	
Cellectis S.A.	ENXTPA:ALCLS	\$	1.94	41.8% - 110.3	% 105.0	25.5	(73.3)	-287.6%	-10.3%	4.12x	1.68x	na	na	
Gilead Sciences, Inc.	NasdaqGS:GILD	\$	77.07	85.9% - 130.0	% 113,507.0	27,043.0	12,459.0	46.1%	-11.5%	4.20x	4.26x	9.1x	7.3x	
Incyte Corporation	NasdaqGS:INCY	\$	62.25	72.1% - 102.8	% 10,814.8	3,470.1	575.7	16.6%	-9.8%	3.12x	3.70x	18.8x	14.4x	
Merck & Co., Inc.	NYSE:MRK	\$	115.39	96.4% - 136.5	% 313,663.5	57,869.0	22,367.0	38.7%	24.4%	5.42x	6.49x	14.0x	15.9x	
Novartis AG	SWX:NOVN	\$	100.57	95.8% - 122.7	% 228,438.9	52,222.0	18,593.0	35.6%	-7.1%	4.37x	4.40x	12.3x	12.5x	
Regeneron Pharmaceuticals, Inc.	NasdaqGS:REGN	\$	718.54	85.8% - 127.4	67,649.0	12,369.9	5,076.8	41.0%	-36.5%	5.47x	4.31x	13.3x	7.0x	
		Me	an	72.4% - 119.9	% \$ 96,550.6	\$ 21,664.9	\$ 9,118.7	-655.8%	-13.3%	4.10x	4.11x	11.1x	9.3x	
		Me	dian	74.8% - 118.3	\$ 67,649.0	\$ 13,269.2	\$ 8,828.6	38.7%	-10.1%	4.20x	4.29x	11.8x	8.4x	
Cardiovascular														
AstraZeneca PLC	LSE:AZN	\$	143.29	91.0% - 118.7	% \$ 248,828.4	\$ 43,840.0	\$ 15,074.0	34.4%	26.5%	5.68x	6.87x	16.5x	23.0x	
Bayer Aktiengesellschaft	XTRA:BAYN	\$	55.32	77.2% - 108.5	% 93,074.7	54,855.5	12,400.0	22.6%	12.8%	1.70x	1.89x	7.5x	7.3x	
Bristol-Myers Squibb Company	NYSE:BMY	\$	63.39	77.8% - 100.8	% 164,742.6	45,848.0	19,618.0	42.8%	-6.9%	3.59x	3.55x	8.4x	7.5x	
Gilead Sciences, Inc.	NasdaqGS:GILD	\$	77.07	85.9% - 130.0	% 113,507.0	27,043.0	12,459.0	46.1%	-11.5%	4.20x	4.26x	9.1x	7.3x	
Johnson & Johnson	NYSE:JNJ	\$	165.52	91.4% - 110.3	461,776.0	96,263.0	33,301.0	34.6%	-1.5%	4.80x	4.90x	13.9x	14.0x	
Novartis AG	SWX:NOVN	\$	100.57	95.8% - 122.7	% 228,438.9	52,222.0	18,593.0	35.6%	-7.1%	4.37x	4.40x	12.3x	12.5x	
Pfizer Inc.	NYSE:PFE	\$	36.28	66.0% - 101.4	% 223,708.4	92,951.0	40,637.0	43.7%	52.1%	2.41x	2.74x	5.5x	7.6x	
Sanofi	ENXTPA:SAN	\$	107.21	93.4% - 128.4	% 143,715.2	50,194.5	15,639.4	31.2%	16.2%	2.86x	3.35x	9.2x	10.7x	
United Therapeutics Corporation	NasdaqGS:UTHR	\$	220.75	78.0% - 109.5	% 7,065.9	1,981.3	1,037.5	52.4%	70.0%	3.57x	4.15x	6.8x	10.6x	
		Ме	an	84.1% - 114.5	% \$ 187,206.3	\$ 51,688.7	\$ 18,751.0	38.1%	16.7%	3.69x	4.01x	9.9x	11.2x	
		Me	dian	85.9% - 110.3	% \$ 164,742.6	\$ 50,194.5	\$ 15,639.4	35.6%	12.8%	3.59x	4.15x	9.1x	10.6x	

Market value equals price per share times number of diluted shares outstanding. Enterprise value equals market value plus debt, preferred stock, and non controlling interests, less cash.



## **SELECTED PUBLIC COMPANIES – DEVICES**

#### **Selected Companies Review**

#### (\$ in thousands, except per security)

				<b>Market Statistics</b>					Me	trics	Valuation Benchmarks				
		Clos	ing Price	% of 52-week	E	nterprise	F	Revenue	EBITDA	EBITDA	EBITDA	EV / Re	venue	EV / EI	BITDA
Company	Ticker	30	-Jun-23	High-Low		Value		LTM	 LTM	LTM Margin 2	022 E Growth	LTM	2021 E	LTM	2021 E
Imaging															
FUJIFILM Holdings Corporation	TSE:4901	\$	59.07	96.2% - 136.4%	\$	25,248.6	\$	21,507.2	\$ 3,124.1	14.5%	-0.9%	1.17x	1.18x	8.1x	8.3×
General Electric Company	NYSE:GE	\$	109.77	99.6% - 183.2%		122,885.3		78,366.0	8,654.0	11.0%	14.3%	1.57x	1.64x	14.2x	16.0x
Hitachi, Ltd.	TSE:6501	\$	61.53	98.4% - 148.7%		67,475.7		81,853.8	11,047.3	13.5%	-3.1%	0.82x	0.78x	6.1x	6.5×
Hologic, Inc.	NasdaqGS:HOLX	\$	80.97	92.1% - 135.4%		20,273.4		4,056.6	1,324.6	32.7%	-30.2%	5.00x	3.88x	15.3x	8.5×
Intelligent Ultrasound Group plc	AIM:IUG	\$	0.12	55.5% - 148.0%		30.0		12.2	(3.8)	-31.2%	-27.2%	2.46x	2.91x	na	na
Koninklijke Philips N.V.	ENXTAM:PHIA	\$	21.62	94.9% - 170.6%		27,610.8		19,639.3	327.8	1.7%	-37.0%	1.41x	1.40x	nm	7.9x
Shenzhen Mindray Bio-Medical Electronics	SZSE:300760	\$	41.34	84.9% - 118.3%		46,734.2		4,627.4	1,704.4	36.8%	10.3%	10.10x	11.63x	27.4x	31.9x
Siemens Healthineers AG	XTRA:SHL	\$	56.62	89.3% - 128.6%		79,718.1		23,477.8	3,458.3	14.7%	5.4%	3.40x	3.68x	23.1x	18.6×
Toshiba Corporation	TSE:6502	\$	31.24	80.4% - 112.3%		14,573.1		25,593.7	1,990.0	7.8%	-24.1%	0.57x	0.51x	7.3x	6.8×
		Me	nn	87.9% - 142.4%	\$	44,949.9	\$	28,792.7	\$ 3,514.1	11.3%	-10.3%	2.94x	3.07x	14.5x	13.1x
		Me	dian	92.1% - 136.4%	\$	27,610.8	\$	21,507.2	\$ 1,990.0	13.5%	-3.1%	1.57x	1.64x	14.2x	8.4x
Robotic Surgery															
Accuray Incorporated	NasdaqGS:ARAY	\$	3.87	96.0% - 213.8%	\$	487.9	\$	439.3	\$ 9.6	2.2%	-37.8%	1.11x	1.15x	nm	17.4×
Globus Medical, Inc.	NYSE:GMED	\$	59.54	74.4% - 116.9%		5,072.0		1,069.0	314.8	29.5%	5.5%	4.74x	5.33x	16.1x	15.4x
Intuitive Surgical, Inc.	NasdaqGS:ISRG	\$	341.94	99.4% - 189.9%		117,039.5		6,430.7	1,947.4	30.3%	-3.4%	18.20x	20.46x	nm	45.0x
Smith & Nephew plc	LSE:SN.	\$	16.11	96.3% - 132.2%		16,714.0		5,215.0	1,114.0	21.4%	0.2%	3.20x	3.20x	15.0x	12.6×
Stereotaxis, Inc.	NYSEAM:STXS	\$	1.53	55.7% - 102.0%		100.8		27.7	(19.8)	-71.7%	50.1%	3.64x	2.97x	na	na
Stryker Corporation	NYSE:SYK	\$	305.09	99.4% - 161.6%		128,868.4		18,952.0	4,648.0	24.5%	-2.7%	6.80x	7.56x	27.7x	26.5×
Zimmer Biomet Holdings, Inc.	NYSE:ZBH	\$	145.60	97.6% - 145.0%		36,210.2		7,107.7	2,336.3	32.9%	-9.4%	5.09x	4.61x	15.5x	14.4x
		Me	n	88.4% - 151.6%	\$	43,499.0	\$	5,605.9	\$ 1,478.6	9.9%	0.3%	6.11x	6.47x	18.6x	21.9x
		Me	dian	96.3% - 145.0%	\$	16,714.0	\$	5,215.0	\$ 1,114.0	24.5%	-2.7%	4.74x	4.61x	15.8x	16.4x

Market value equals price per share times number of diluted shares outstanding. Enterprise value equals market value plus debt, preferred stock, and non controlling interests, less cash.



#### **Selected Companies Review**

#### (\$ in thousands, except per security)

				<b>Market Statistics</b>			Me	trics		Valuation Benchmarks				
		Clos	ing Price	% of 52-week	Enterprise	Revenue	EBITDA	EBITDA	EBITDA	EV / Re	evenue	EV / EI	BITDA	
Company	Ticker	30	-Jun-23	High-Low	Value	 LTM	 LTM	LTM Margin 2	022 E Growth	LTM	2021 E	LTM	2021 E	
Orthopedics														
CONMED Corporation NY	SE:CNMD	\$	135.89	98.1% - 191.2%	\$ 20,013.7	\$ 1,098.6	\$ 148.1	13.5%	1.6%	18.22x	19.77x	nm	nm	
Enovis Corporation NY	SE:ENOV	\$	64.12	96.1% - 146.1%	3,839.9	1,593.8	196.7	12.3%	-61.3%	2.41x	1.00x	19.5x	6.3x	
Medtronic plc NY	SE:MDT	\$	88.10	92.2% - 116.3%	134,729.7	31,227.0	8,376.0	26.8%	-6.7%	4.31x	4.22x	16.1x	13.7x	
NuVasive, Inc. Na	sdaqGS:NUVA	\$	41.59	76.1% - 118.3%	3,008.0	1,218.9	211.6	17.4%	7.6%	2.47x	2.65x	14.2x	11.4x	
Orthofix Medical Inc. Na:	sdaqGS:OFIX	\$	18.06	68.5% - 131.3%	697.1	529.5	(22.7)	-4.3%	-8.1%	1.32x	1.50x	na	12.1x	
Smith & Nephew plc LSE	E:SN.	\$	16.11	96.3% - 132.2%	16,714.0	5,215.0	1,114.0	21.4%	0.2%	3.20x	3.20x	15.0x	12.6x	
Stryker Corporation NY	SE:SYK	\$	305.09	99.4% - 161.6%	128,868.4	18,952.0	4,648.0	24.5%	-2.7%	6.80x	7.56x	27.7x	26.5x	
Zimmer Biomet Holdings, Inc. NY	SE:ZBH	\$	145.60	97.6% - 145.0%	36,210.2	7,107.7	2,336.3	32.9%	-9.4%	5.09x	4.61x	15.5x	14.4x	
		Med	n	90.5% - 142.7%	\$ 43,010.1	\$ 8,367.8	\$ 2,126.0	18.1%	-9.9%	5.48x	5.56x	18.0x	13.9x	
		Med	lian	96.2% - 138.6%	\$ 18,363.8	\$ 3,404.4	\$ 662.8	19.4%	-4.7%	3.76x	3.71x	15.8x	12.6x	
Cardiovascular														
Abbott Laboratories NY	SE:ABT	\$	108.50	93.8% - 116.4%	\$ 198,382.1	\$ 41,505.0	\$ 10,721.0	25.8%	-2.0%	4.78x	4.70x	18.5x	15.8x	
Baxter International Inc. NY	SE:BAX	\$	45.56	67.9% - 122.0%	38,324.5	15,055.0	3,094.0	20.6%	13.5%	2.55x	3.04x	12.4x	12.7x	
Becton, Dickinson and Company NY	SE:BDX	\$	264.01	98.1% - 122.3%	91,545.7	18,809.0	4,805.0	25.5%	-2.9%	4.87x	4.65x	19.1x	17.5x	
Boston Scientific Corporation NY	SE:BSX	\$	54.09	98.8% - 149.6%	87,189.5	13,045.0	3,281.0	25.2%	5.5%	6.68x	7.34x	26.6x	25.3x	
Edwards Lifesciences Corporation NY	SE:EW	\$	94.33	87.4% - 140.5%	57,042.3	5,500.8	1,884.6	34.3%	10.0%	10.37x	10.85x	30.3x	32.3x	
Medtronic plc NY	SE:MDT	\$	88.10	92.2% - 116.3%	134,729.7	31,227.0	8,376.0	26.8%	-6.7%	4.31x	4.22x	16.1x	13.7x	
		Мес	n	89.7% - 127.8%	\$ 101,202.3	\$ 20,857.0	\$ 5,360.3	26.4%	2.9%	5.59x	5.80x	20.5x	19.5x	
		Мес	lian	93.0% - 122.1%	\$ 89,367.6	\$ 16,932.0	\$ 4,043.0	25.7%	1.7%	4.82x	4.67x	18.8x	16.6x	

Market value equals price per share times number of diluted shares outstanding. Enterprise value equals market value plus debt, preferred stock, and non controlling interests, less cash.



## **SELECTED PUBLIC COMPANIES – SERVICES**

				Se	lec	ted Comp	an	ies Revie	w							
(\$ in thousands, except per security)																
				<b>Market Statistics</b>				Me	trics		Valuation Benchmarks					
		Clos	ing Price	% of 52-week	E	nterprise	F	Revenue		EBITDA	EBITDA	EBITDA	EV / Re	venue	EV / EE	SITDA
Company	Ticker	30	-Jun-23	High-Low		Value		LTM		LTM	LTM Margin 2	022 E Growth	LTM	2021 E	LTM	2021 E
Diagnostics/Lab Testing																
Enzo Biochem, Inc.	NYSE:ENZ	\$	1.84	66.9% - 184.0%	\$	110.8	\$	71.0	\$	(41.0)	-57.7%	na	1.56x	na	na	na
Exact Sciences Corporation	NASDAQ:EXAS	\$	93.90	94.8% - 320.8%		18,890.1		2,200.2		(303.6)	-13.8%	-47.2%	8.59x	10.83x	na	na
Laboratory Corporation of America Holdings	NYSE:LH	\$	207.32	78.8% - 103.5%		27,387.6		14,755.1		2,318.0	15.7%	-27.8%	1.86x	1.71x	11.8x	6.7x
Myriad Genetics, Inc.	NASDAQ:MYGN	\$	23.18	82.3% - 166.5%		1,946.9		694.7		(84.8)	-12.2%	-127.5%	2.80x	2.83x	na	26.3x
NeoGenomics, Inc.	NASDAQ:NEO	\$	16.07	78.2% - 267.8%		2,242.6		529.8		(69.0)	-13.0%	2809.1%	4.23x	4.63x	na	na
Quest Diagnostics Incorporated	NYSE:DGX	\$	139.84	88.3% - 116.1%		20,467.7		9,603.0		1,789.0	18.6%	-27.4%	2.13x	1.91x	11.4x	7.1x
		Med	n	81.6% - 193.1%	\$	11,840.9	\$	4,642.3	\$	601.4	-10.4%	515.9%	3.53x	4.38x	11.6x	13.4x
		Med	lian	80.5% - 175.3%	\$	10,566.3	\$	1,447.4	\$	(55.0)	-12.6%	-27.8%	2.47x	2.83x	11.6x	7.1x
Telehealth																
CareCloud, Inc.	NasdaqGM:CCLD	\$	2.95	55.1% - 118.0%	\$	52.9	\$	133.5	\$	15.5	11.6%	-4.8%	0.40x	0.38x	3.4x	2.3x
SHL Telemedicine Ltd.	SWX:SHLTN	\$	10.50	49.1% - 119.0%		184.3		59.0		(2.4)	-4.1%	na	3.12x	na	na	na
Teladoc Health, Inc.	NYSE:TDOC	\$	25.32	56.7% - 117.2%		4,865.9		2,470.7		(2.0)	-0.1%	-7.2%	1.97x	2.40x	na	18.6x
Veradigm Inc.	NasdaqGS:MDRX	\$	12.60	63.7% - 111.5%		1,102.9		1,529.0		115.4	7.5%	-42.7%	0.72x	0.73x	9.6x	3.8x
Welltower Inc.	NYSE:WELL	\$	80.89	93.2% - 143.2%		56,213.9		5,938.5		2,209.5	37.2%	14.0%	9.47x	12.16x	25.4x	31.0x
		Ме	n	63.6% - 121.8%	\$	12,484.0	\$	2,026.1	\$	467.2	10.4%	-10.2%	3.14x	3.92x	12.8x	13.9x
		Med	dian	56.7% - 118.0%	\$	1,102.9	\$	1,529.0	\$	15.5	7.5%	-6.0%	1.97x	1.57x	9.6x	11.2x

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## **SELECTED PUBLIC COMPANIES – SERVICES (CONT.)**

#### (\$ in thousands, except per security)

				<b>Market Statistics</b>					Me	etrics			Valuation	Benchmark	s
		Clos	ing Price	% of 52-week	E	nterprise	F	Revenue	EBITDA	EBITDA	EBITDA	EV / Re	venue	EV / E	BITDA
Company	Ticker	30	-Jun-23	High-Low		Value		LTM	LTM	LTM Margin	2022 E Growth	LTM	2021 E	LTM	2021 E
Facilities-Based & Practices															
Acadia Healthcare Company, Inc.	NasdaqGS:ACHC	\$	79.64	88.6% - 119.1%	\$	8,964.2	\$	2,698.0	\$ 580.1	21.5%	10.9%	3.32x	3.86x	15.5x	16.3x
Amedisys, Inc.	NasdaqGS:AMED	\$	91.44	69.6% - 131.8%		3,471.9		2,234.3	200.8	9.0%	-14.2%	1.55x	1.57x	17.3x	11.7x
Brookdale Senior Living Inc.	NYSE:BKD	\$	4.22	76.9% - 185.9%		5,221.0		2,820.6	261.4	9.3%	73.9%	1.85x	1.89x	20.0x	37.4x
Community Health Systems, Inc.	NYSE:CYH	\$	4.40	54.9% - 234.0%		13,548.2		12,208.0	1,131.0	9.3%	-26.1%	1.11x	1.10x	12.0x	7.2x
DaVita Inc.	NYSE:DVA	\$	100.47	97.5% - 153.9%		21,936.6		11,665.0	2,023.8	17.3%	-16.2%	1.88x	1.89x	10.8x	8.8x
Encompass Health Corporation	NYSE:EHC	\$	67.71	99.7% - 152.7%		10,272.0		4,449.7	906.0	20.4%	-18.9%	2.31x	2.01x	11.3x	10.0x
Fresenius Medical Care AG & Co. KGaA	XTRA:FME	\$	47.78	90.4% - 168.7%		28,693.9		21,245.0	2,604.8	12.3%	-7.1%	1.35x	1.43x	11.0x	7.4x
HCA Healthcare, Inc.	NYSE:HCA	\$	303.48	99.5% - 184.5%		125,845.1		60,879.0	12,279.0	20.2%	-4.7%	2.07x	2.13x	10.2x	9.9x
Pediatrix Medical Group, Inc.	NYSE:MD	\$	14.21	59.3% - 110.7%		1,893.2		1,980.8	225.3	11.4%	-3.8%	0.96x	1.00x	8.4x	7.6x
National HealthCare Corporation	NYSEAM:NHC	\$	61.82	85.6% - 119.9%		902.8		1,075.5	64.4	6.0%	na	0.84x	na	14.0x	na
RadNet, Inc.	NasdaqGM:RDNT	\$	32.62	95.8% - 271.2%		3,826.7		1,478.9	177.7	12.0%	-8.3%	2.59x	2.88x	21.5x	17.9x
Select Medical Holdings Corporation	NYSE:SEM	\$	31.86	98.2% - 168.9%		9,353.2		6,399.0	629.8	9.8%	-30.6%	1.46x	1.52x	14.9x	9.8x
Sonida Senior Living, Inc.	NYSE:SNDA	\$	8.72	36.5% - 145.3%		726.6		216.7	14.5	6.7%	na	3.35x	na	nm	na
Surgery Partners, Inc.	NasdaqGS:SGRY	\$	44.99	98.3% - 219.9%		9,661.3		2,609.3	485.4	18.6%	15.6%	3.70x	4.32x	19.9x	29.7x
Tenet Healthcare Corporation	NYSE:THC	\$	81.38	95.3% - 221.8%		26,211.2		19,666.0	3,564.0	18.1%	3.0%	1.33x	1.33x	7.4x	7.9x
The Ensign Group, Inc.	NasdaqGS:ENSG	\$	95.46	93.4% - 133.1%		6,990.1		3,198.9	366.2	11.4%	14.2%	2.19x	2.66x	19.1x	20.6x
Universal Health Services, Inc.	NYSE:UHS	\$	157.77	99.5% - 191.2%		16,405.8		13,573.9	1,686.6	12.4%	-14.2%	1.21x	1.31x	9.7x	8.6x
		Med	n	84.7% - 171.3%	\$	17,289.6	\$	9,905.8	\$ 1,600.1	13.3%	-1.8%	1.95x	2.06x	13.9x	14.1x
		Med	lian	93.4% - 168.7%	\$	9,353.2	\$	3,198.9	\$ 580.1	12.0%	-7.1%	1.85x	1.89x	13.0x	9.9x

**Selected Companies Review** 

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