

Healthcare Investment Banking Q4 2022 Update



**Ira Z. Leiderman**Managing Director,
Healthcare

ileiderman@cs-ib.com 305-438-7813 Mr. Leiderman has successfully led numerous transactions, as well as conducted strategic advisory work for companies in the healthcare and life sciences sectors.

Previous Experience: Founder & MD, Long Trail Advisors, LLC; Co-Head – Healthcare Group, Ladenburg Thalmann & Co. Inc.; Head of IB, Punk Ziegal & Co.

Former Board Involvement: Apthera, Inc. – Executive Chairman, Collplant Ltd., Marinesurgical, Inc., and Camp Ramah.



**Deborah F. Aghib, Ph.D.**Managing Director,
Healthcare

daghib@cs-ib.com 305-438-7817 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&A.

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 & Managing Director, DFA Advisors; Consultant, CRG, LP.

Board Involvement: Neuro-Zone, CellPly, ImmunGene, OpenWorm Foundation, SF Art and Film, Stellar Biotechnologies – Strategic Investment, M&A, Audit, and Corporate Governance Committees (Prior).

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.



Margery Fischbein Managing Director, Healthcare

mfischbein@cs-ib.com 305-438-7816

Ms. Fischbein has a long track record of successfully advising clients in the healthcare industry on M&A and licensing transactions and public and private equity and debt financings, as well as providing strategic advisory services.

Previous Experience: Managing Director and Head of Healthcare Investment Banking, Seaport Global and FBR & 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.

Board Involvement: Cytodel, Harvard Business School Club of New York, and Harvard Business School Club of South Florida.

M.B.A, Harvard Business School; B.A. Harvard University.

 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



Margery Fischbein Managing Director



Charles Davis Associate



Joseph Smith Director



Francisco Belliard Analyst

1	WE'RE TIRED
II	M&A & PRIVATE PLACEMENTS REVIEW
III	PUBLIC MARKETS REVIEW

We are all tired of COVID: even Tony Fauci has said he's tired.<sup>1</sup> But more than COVID, we are probably even more tired of hearing about the vaccine and boosters. As you would expect, people just start to ignore the ongoing chatter. It all becomes background noise. But this lack of attention and ensuing malaise is leading to another public health crisis. And it will be a crisis of our own making. Not only are a large number of Americans not rolling up their sleeves to receive COVID boosters, but they are also falling behind in "routine" vaccinations. Paradoxically, after three years of seeing family and friends succumb to COVID, people are just not looking after their own and their children's health. But, think about it, even when we are exhausted, we still brush our teeth and take out the trash.

Data published by the U.S. Centers for Disease Control and Prevention ("CDC") and the New England Journal of Medicine demonstrate the lower rate of severe infection and hospitalization in people who received at least two doses of the bivalent vaccine.<sup>2,3</sup> Now that the daily death rate attributed to COVID in the United States is under 500 deaths per day, which is approximately 25% of the daily death rate of 2,000 per day from heart disease, many people have become complacent.<sup>4,5</sup> However, with a COVID death rate of approximately 175,000 lives lost per year, which is approximately three times the number of lives lost in the Vietnam War over twenty years, you would think that this number would shake people out of their complacency as it did in the 1960s in the case of Vietnam.

<sup>&</sup>lt;sup>1</sup> Interview by Judy Woodruff of Dr. Anthony Fauci; PBS NewsHour, 9 December 2022

<sup>&</sup>lt;sup>2</sup> MMWR, 2 December 2022

<sup>&</sup>lt;sup>3</sup> Lin D-Y et al., NEJM, 25 January 2023

<sup>&</sup>lt;sup>4</sup> New York Times, Daily Covid Tracker, 12 February 2022

<sup>&</sup>lt;sup>5</sup> Virani SS et al., Heart Disease and Stroke Statistics, Circulation, 23 February 2022; Vol. 143;8

So, what has changed? Is it that the message is going unheeded because it has just become background noise? Is it a lack of trust in the system? Or just disbelief in science? In truth, the overall decline in vaccination rates predates the COVID pandemic. The decline was first seen in the vaccination rates of children as an anti-vaccine, anti-medicine movement took hold among some parents.<sup>6,7</sup> As a result, measles outbreaks have been reported around the country and polio has been reappearing around the world.<sup>8,9</sup> Childhood diseases long since nearly eradicated are now reappearing, forcing pediatricians who have never seen these diseases to now become acquainted with them. But as evident during the pandemic, the anti-vaccine movement has grown not just with conspiracy theorists and some fundamentalist religious leaders but also with celebrities and social media influencers. They are espousing nonsensical or indeed incorrect information which has a negative impact on the rate of vaccinations.<sup>10</sup> Over the past few years, the percentage of children fully vaccinated against childhood diseases has been dropping. Experience has taught us that for childhood diseases, herd immunity is achieved at a 95% vaccination rate. But over the past three years, the rate has dropped to 93% and it appears that this decline may continue.<sup>11,12,13,14</sup> The decline in vaccinations may be due to a myriad of factors, but complacency is surely one of them. People are becoming less fearful of disease, COVID included, and are beginning to think that they are omnipotent. But they are also playing with the long-term health and well-being of their children, as well as of the general public.

With regard to the COVID bivalent booster, less than 20% of those under the age of 65 who are eligible to receive the bivalent booster have received it. The numbers are a bit better in the over 65-year-old population where the bivalent booster rate is approximately 40%. But the rates in both populations are abysmal.<sup>15</sup>

<sup>&</sup>lt;sup>6</sup> Hussain A et al., The Anti-vaccination Movement: A Regression in Modern Medicine, Cureus, 10 July 2018,

<sup>&</sup>lt;sup>7</sup> How distrust of childhood vaccines could lead to more breakouts of preventable diseases. AAMC News, 2 August 2022

<sup>&</sup>lt;sup>8</sup> Ledford H, Spate of polio outbreaks worldwide puts scientists on alert, Nature, 22 August 2022

<sup>&</sup>lt;sup>9</sup> Boyd R et al. Reducing the threat of vaccine – preventable diseases starts with kids, Stat, 20 December 2022

<sup>&</sup>lt;sup>10</sup> Loomba S et al. Measuring the impact of Covid-19 vaccine misinformation on vaccination intent in the UK and USA, Nature Human Behavior, 5 February 2021

<sup>&</sup>lt;sup>11</sup> Stat News, 12 January 2023

<sup>&</sup>lt;sup>12</sup> Child Vaccination Rates, Already Down Because of COVID, Fall Again, Pew; Stateline, 12 January 2023

<sup>&</sup>lt;sup>13</sup> Routine Vaccinations Continue to Decline Among Kindergartners, Medpage Today, 12 January 2023

<sup>&</sup>lt;sup>14</sup> Pandemic drives largest drop in childhood vaccinations in 30 years. Nature, 26 July 2022

Why Aren't People Getting the Bivalent COVID Booster?, Medpage Today, 20 January 2023

Vaccines and boosters are needed throughout your life but at least three out of every four adults are missing one or more recommended vaccines.<sup>16</sup> Less than half of those 60 years of age and older have been immunized for shingles even though the efficacy of the two licensed vaccines is beyond doubt.<sup>17</sup> Flu vaccination rates are somewhat better, with over 70% of those older than 65 being vaccinated, but the numbers drop to about 37% in those younger than 50.<sup>18</sup> Vaccination to prevent pneumococcal pneumonia has been around for some years but only approximately two-thirds of adults over 65 have received a vaccine.<sup>19</sup> We are not even discussing the fact that many adults do not seek out vaccination for tetanus and pertussis (whooping cough), just to name another safe and effective combination vaccine.

So, let's face it, as a nation we are starting to slack off on our overall health as evidenced by the declining vaccination rate of our children and the mediocre rate in adults. The reappearance of easily preventable diseases will only increase the health burden being shouldered by an already stressed healthcare system and the economy in general. It is estimated that greater than 27% of healthcare costs in the United States are due to preventable diseases, which in dollar terms is north of \$700 billion.<sup>20</sup> This is a staggering amount of money. The U.S. Bureau of Labor Statistics estimates that as of last month, over 100,000 people per day missed at least one day of work due to a child's illness.<sup>21</sup>

Handling this growing problem is a challenge. Education is a must, and popular and trusted figures and influencers must be identified who can become advocates for vaccination and disease prevention. This must take place on a scale greater than we are seeing now with the occasional 30-second commercials that are currently being run by the government. Money must be invested in education, starting with the youngest children. In years past, children were taught the importance of polio and diphtheria prevention vaccination programs in schools.<sup>22</sup> Maybe in some form we should do that again. Most importantly, the government must ensure that no one goes without a vaccine because of cost, whether they have health insurance or not. Vaccines should be readily available for all. We owe that to our communities and to the world.

<sup>&</sup>lt;sup>16</sup> CDC Adult Vaccine Resources, 23 August 2021

<sup>&</sup>lt;sup>17</sup> The untapped potential of herpes zoster vaccination. The Lancet Healthy Longevity, April 2022

<sup>&</sup>lt;sup>18</sup> Kff.org 12 February 2023

<sup>&</sup>lt;sup>19</sup> CDC – Vaccination Coverage among Adults in the United States, 17 February 2022

<sup>&</sup>lt;sup>20</sup> Galea S, Maani N. The cost of preventable disease in the USA. The Lancet Public Health, October 2020, Vol 5;10

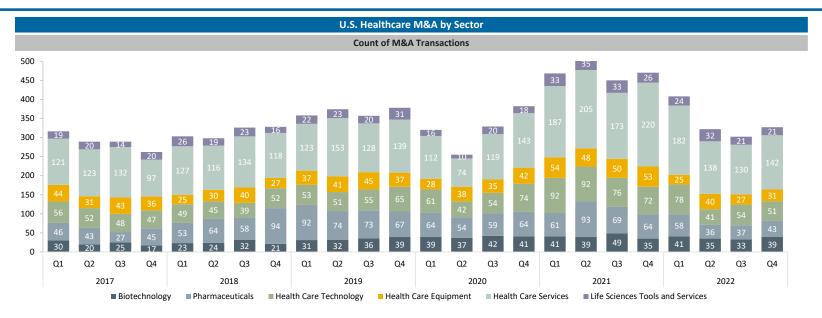
<sup>&</sup>lt;sup>21</sup> US Bureau of Labor Statistics, Productivity and Employment Research, 10 February 2023

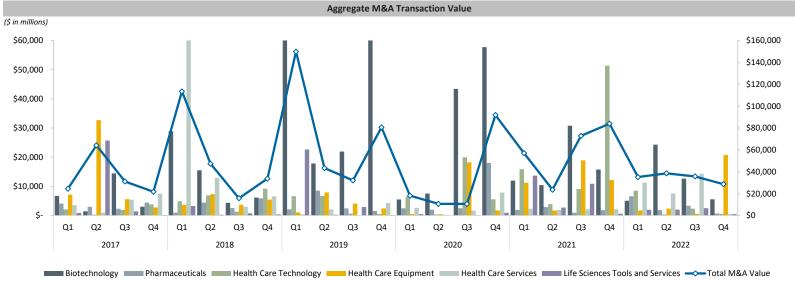
<sup>&</sup>lt;sup>22</sup> Schools Helped Defeat Polio and Diphtheria with Vaccine Efforts. EducationWeek, 8 October 2021

WE'RE TIRED...

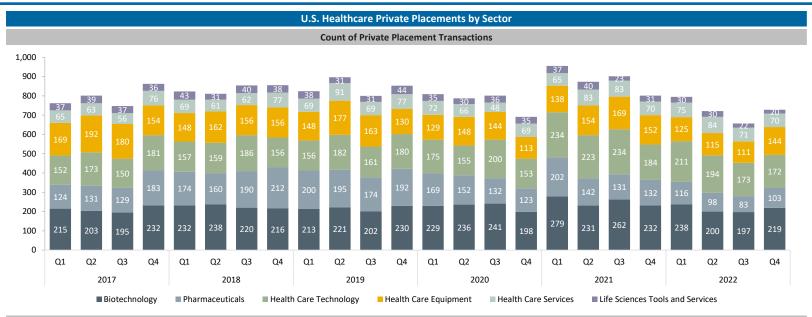
II M&A & PRIVATE PLACEMENTS REVIEW

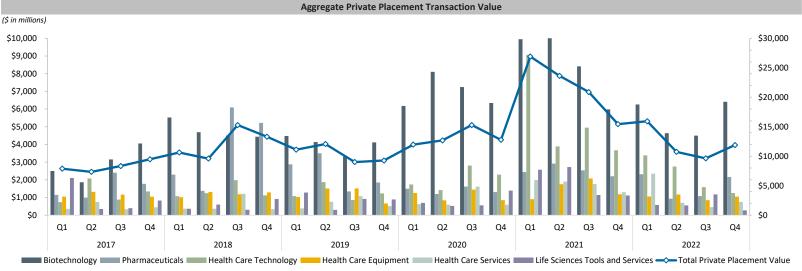
III PUBLIC MARKETS REVIEW



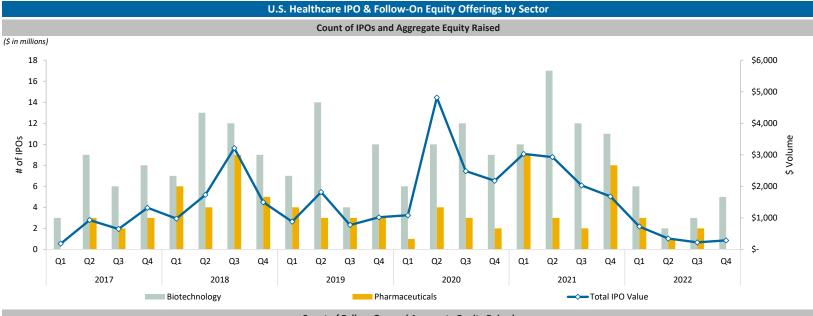


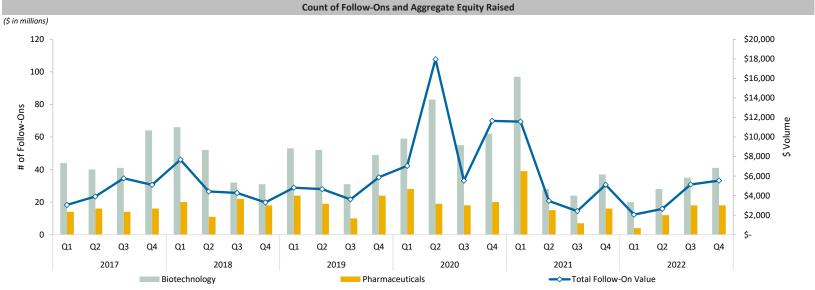
Note: Q1 2018 total transaction value for Health Care Services was \$71,655 and Q1 2019 total transaction value for Biotechnology was \$116,936. Sources of information: S&P Capital IQ.

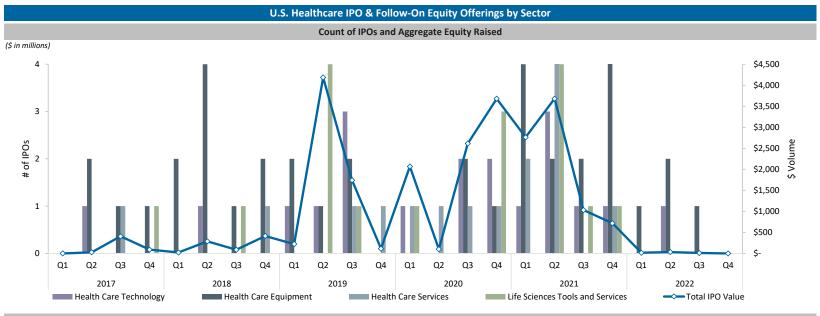


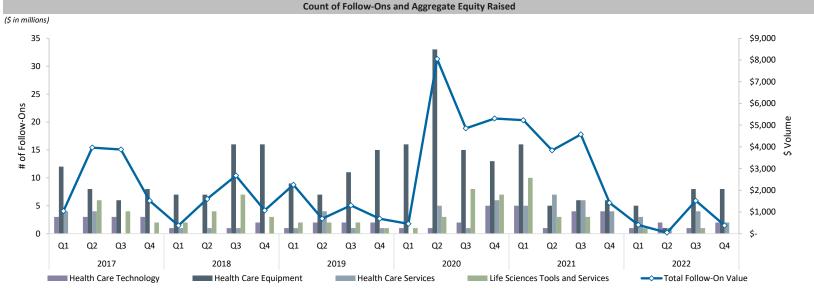


I	WE'RE TIRED
П	M&A & PRIVATE PLACEMENTS REVIEW
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Note: Q2 2021 total count of IPOs for Health Care Services was 5 and Q4 2021 total count of IPOs for Health Care Equipment was 8.



## **Selected Companies Review**

(\$ in thousands, except per security)

		Market Statistics Metrics											Valuation Benchmarks					
		Clos	ing Price	% of 52-week	Enterprise	Rever	nue	El	BITDA	EBITDA	EBITDA	EV / Re	venue	EV / EI	BITDA			
Company	Ticker	31	-Dec-22	High-Low	Value	LTM		LTM		LTM Margin 2022 E Growth		LTM	2021 E	LTM	2021 E			
Vaccines																		
AstraZeneca PLC	LSE:AZN	\$	135.16	97.2% - 136.6%	\$ 238,391.4	\$ 45,1	55.0	\$ :	13,648.0	30.2%	30.0%	5.28x	6.58x	17.5x	22.0			
Bavarian Nordic A/S	CPSE:BAVA	\$	30.66	51.9% - 185.2%	1,837.3	3	16.8		(1.4)	-0.4%	-76.9%	5.80x	6.32x	na	nm			
BioNTech SE	NasdaqGS:BNTX	\$	150.22	58.6% - 128.3%	23,607.2	18,2	204.4	:	12,484.3	68.6%	-17.6%	1.30x	1.21x	1.9x	1.5>			
CSL Limited	ASX:CSL	\$	195.58	94.4% - 119.9%	93,545.1	10,5	61.9		3,324.9	31.5%	16.6%	8.86x	8.95x	28.1x	27.3			
CureVac N.V.	NasdaqGM:CVAC	\$	6.03	16.5% - 107.1%	657.3		95.1		(675.7)	-710.7%	-71.5%	6.91x	7.74x	na	na			
Dynavax Technologies Corporation	NasdaqGS:DVAX	\$	10.64	60.9% - 146.6%	1,062.7	7	32.1		313.2	42.8%	177.8%	1.45x	2.36x	3.4x	10.4			
GSK plc	LSE:GSK	\$	17.32	42.2% - 112.2%	87,836.5	42,8	35.7	:	13,055.1	30.5%	-17.2%	2.05x	1.91x	6.7x	6.5			
Inovio Pharmaceuticals, Inc.	NasdaqGS:INO	\$	1.56	29.6% - 113.0%	139.8		11.0		(312.9)	-2850.7%	-5.0%	12.73x	nm	na	na			
Johnson & Johnson	NYSE:JNJ	\$	176.65	94.6% - 113.4%	464,328.1	96,0	041.0	:	32,015.0	33.3%	-1.7%	4.83x	4.92x	14.5x	14.0			
Merck & Co., Inc.	NYSE:MRK	\$	110.95	98.3% - 152.2%	301,151.5	58,9	74.0	:	24,074.0	40.8%	24.6%	5.11x	6.23x	12.5x	15.2			
Moderna, Inc.	NasdaqGS:MRNA	\$	179.62	72.0% - 156.2%	56,148.0	21,3	90.0	:	13,596.0	63.6%	-17.9%	2.62x	3.13x	4.1x	4.4>			
Novavax, Inc.	NasdaqGS:NVAX	\$	10.28	7.1% - 117.5%	300.4	1,8	346.7		(1,200.3)	-65.0%	na	0.16x	0.24x	na	na			
Pfizer Inc.	NYSE:PFE	\$	50.77	86.7% - 122.5%	289,643.4	99,8	378.0		44,754.0	44.8%	50.6%	2.90x	3.54x	6.5x	9.8			
Sanofi	ENXTPA:SAN	\$	96.01	84.2% - 117.5%	136,128.7	43,4	187.0		12,912.6	29.7%	17.1%	3.13x	3.17x	10.5x	10.2			
		Мес	an	63.9% - 130.6%	\$ 121,055.5	\$ 31,3	394.9	\$ .	11,999.0	-229.4%	8.4%	4.51x	4.33x	10.6x	12.1x			
		Мес	dian	66.4% - 121.2%	\$ 71,992.3	\$ 19,7	797.2	\$ :	12,698.4	31.0%	-1.7%	3.98x	3.54x	8.6x	10.3x			

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.)

### **Selected Companies Review** (\$ in thousands, except per security) **Market Statistics** Metrics Valuation Benchmarks **Closing Price** % of 52-week Revenue **EBITDA EBITDA EBITDA** EV / Revenue **EV / EBITDA Enterprise** Ticker 31-Dec-22 LTM LTM LTM Margin 2022 E Growth LTM 2021 E LTM 2021 E Company High-Low Value Neurology AbbVie Inc. \$ NYSE:ABBV 160.09 91.0% - 124.8% \$ 344,645.8 \$ 57,819.0 \$ 29,801.0 51.5% 7.5% 5.96x 6.13x 11.6x 11.8x NASDAQ:BIIB \$ 276.92 3,490.6 33.7% -11.9% 3.93x 3.75x Biogen Inc. 88.8% - 148.0% 40,730.8 10,363.2 11.7x 9.4x Eli Lilly and Company NYSE:LLY Ś 365.84 97.5% - 157.8% 360.377.6 29.239.5 10.380.4 35.5% -2.2% 12.33x 12.78x 34.7x 36.9x NYSE:JNJ 464,328.1 96.041.0 32,015.0 33.3% -1.7% 4.83x 4.92x 14.5x Johnson & Johnson 176.65 94.6% - 113.4% 14.0x Pfizer Inc. NYSE:PFE \$ 50.77 86.7% - 122.5% 289,643.4 99,878.0 44,754.0 44.8% 50.6% 2.90x 3.54x 6.5x 9.8x \$ 70,413.4 13,710.2 Regeneron Pharmaceuticals, Inc. NasdaqGS:REGN 721.49 92.6% - 134.1% 6,772.7 49.4% -35.8% 5.14x 4.49x 10.4x 7.3x Roche Holding AG SWX:ROG Ś 314.17 71.9% - 100.0% 309.041.3 71.166.0 26,700.7 37.5% -3.1% 4.34x 4.53x 11.6x 11.0x Sanofi **ENXTPA:SAN** 96.01 84.2% - 117.5% 136,128.7 43,487.0 12,912.6 29.7% 17.1% 3.13x 3.17x 10.5x 10.2x Takeda Pharmaceutical Company Limited TSE:4502 \$ 31.17 82,491.6 25,913.6 7,248.6 28.0% 97.8% - 129.6% -6.8% 3.18x 2.78x 11.4x 8.4x Tonix Pharmaceuticals Holding Corp. NASDAQ:TNXP 0.39 2.9% - 134.9% (116.7)na (108.4)na na na na na na Mean 80.8% - 128.3% \$ 209,768.4 \$ 49,735.3 \$ 17,396.7 38.2% 1.5% 5.08x 5.12x 13.6x 13.2x Median 89.9% - 127.2% \$ 212,886.0 \$ 43,487.0 \$ 11,646.5 35.5% -2.2% 4.34x 4.49x 11.6x 10.2x Anti-Infectives \$ 45.030.0 **Abbott Laboratories** NYSE:ABT Ś 109.30 78.2% - 117.2% \$ 199,476.8 \$ 13.688.0 30.4% -0.9% 4.43x 4.73x 14.6x 15.9x NSEI:CIPLA Cipla Limited 13.00 90.8% - 125.1% 10,153.7 2,689.7 530.0 19.7% -5.0% 3.77x 3.59x 19.2x 16.6x \$ Hikma Pharmaceuticals PLC LSE:HIK 18.70 69.6% - 132.1% 5,281.4 2,550.0 762.0 29.9% -7.5% 2.07x 6.9x 2.11x 7.2x 464,328.1 -1.7% Johnson & Johnson NYSE:JNJ 176.65 94.6% - 113.4% 96,041.0 32,015.0 33.3% 4.83x 4.92x 14.5x 14.0x Merck & Co., Inc. NYSE:MRK \$ 110.95 58,974.0 24,074.0 40.8% 24.6% 6.23x 12.5x 98.3% - 152.2% 301,151.5 5.11x 15.2x Viatris Inc. NasdaqGS:VTRS 11.13 71.3% - 132.2% 33.020.6 16.728.3 5.998.5 35.9% -9.2% 1.97x 1.85x 5.5x 5.1x Novartis AG \$ 3.92x SWX:NOVN 90.40 94.5% - 114.8% 204,793.6 52,263.0 19,400.0 37.1% -7.0% 3.95x 10.6x 11.2x Pfizer Inc. NYSE:PFE 50.77 86.7% - 122.5% 289,643.4 99,878.0 44,754.0 44.8% 50.6% 2.90x 3.54x 6.5x 9.8x \$ 0.4% Sun Pharmaceutical Industries Limited NSEI:SUNPHARMA 12.01 92.8% - 126.6% 28,280.0 5,041.4 1,306.8 25.9% 5.61x 5.62x 21.6x 21.0x Teva Pharmaceutical Industries Limited NYSE:TEVA Ś 9.12 80.4% - 134.5% 30.275.1 15.141.0 4.182.0 27.6% -3.1% 2.00x 1.88x 7.2x 6.2x

\$ 156,640.4

\$ 116,248.7

\$ 39,433.6

\$ 30,879.2

Ś

\$

14.671.0

9,843.3

32.5%

31.9%

4.1%

-2.4%

3.66x

3.85x

3.84x

3.77x

88.7% - 125.9% 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.

85.7% - 127.1%

Mean

Median

Sources of information: S&P Capital IQ.

11.9x

11.5x

12.2x

12.6x

## SELECTED PUBLIC COMPANIES - PHARMA (CONT.)

### **Selected Companies Review** (\$ in thousands, except per security) **Market Statistics** Metrics Valuation Benchmarks **Closing Price** % of 52-week **EBITDA EBITDA EBITDA** EV / Revenue Enterprise Revenue EV / EBITDA Company Ticker 31-Dec-22 High-Low Value LTM LTM LTM Margin 2022 E Growth LTM 2021 E LTM 2021 E Cancer Immunotherapy NasdagGS:AMGN \$ 262.64 88.5% - 122.5% \$ 167,559.6 \$ 26,330.0 \$ 13,425.0 51.0% -0.6% 6.36x 6.45x 12.5x 10.5x Amgen Inc. BioNTech SE NasdaqGS:BNTX \$ 23,607.2 18,204.4 68.6% 150.22 58.6% - 128.3% 12,484.3 -17.6% 1.30x 1.21x 1.9x 1.5x NYSE:BMY \$ 71.39 191,752.4 44.3% -6.7% Bristol-Myers Squibb Company 87.7% - 117.3% 46,738.0 20,728.0 4.10x 4.14x 9.3x 8.8x bluebird bio, Inc. NasdagGS:BLUE \$ 6.92 64.4% - 241.5% 710.9 5.1 (446.4)-8684.5% -59.3% 14.82x nm na na NasdaqCM:CLDX \$ Celldex Therapeutics, Inc. 44.57 96.8% - 224.5% 1,785.4 1.1 (96.8)-8979.2% na nm nm na na Cellectis S.A. ENXTPA:ALCLS \$ 2.12 74.8 22.2 (122.7)-553.1% -10.3% 3.37x 24.5% - 109.1% 1.19x na Gilead Sciences. Inc. NasdagGS:GILD Ś 85.85 95.7% - 150.2% 125,506.1 27,136.0 12,775.0 47.1% -11.2% 4.63x 4.71x 9.8x 8.1x **Incyte Corporation** NasdagGS:INCY \$ 80.32 94.7% - 123.4% 14,961.8 3,330.8 678.5 20.4% -2.4% 4.49x 5.11x 22.1x 19.9x \$ 12.5x Merck & Co., Inc. NYSE:MRK 110.95 98.3% - 152.2% 301,151.5 58,974.0 24,074.0 40.8% 24.6% 5.11x 6.23x 15.2x Novartis AG SWX:NOVN \$ 90.40 204,793.6 52,263.0 19,400.0 37.1% 3.92x 3.95x 10.6x 94.5% - 114.8% -7.0% 11.2x NasdaqGS:REGN \$ Regeneron Pharmaceuticals, Inc. 721.49 92.6% - 134.1% 70.413.4 13,710.2 6,772.7 49.4% -35.8% 5.14x 4.49x 10.4x 7.3x Mean 81.5% - 147.1% \$ 100,210.6 \$ 22,428.6 \$ 9,970.1 -1623.5% -12.6% 4.27x 5.23x 11.1x 10.3x \$ 12.484.3 Median 92.6% - 128.3% \$ 70,413.4 \$ 18,204.4 40.8% -8.7% 4.49x 4.60x 10.5x 9.6x Cardiovascular AstraZeneca PLC \$ \$ 13,648.0 LSE:AZN 135.16 97.2% - 136.6% \$ 238.391.4 \$ 45,155.0 30.2% 30.0% 5.28x 6.58x 17.5x 22.0x Bayer Aktiengesellschaft 48,889.0 13,783.1 28.2% XTRA:BAYN 51.65 71.1% - 103.5% 89,117.9 13.1% 1.82x 1.81x 6.5x 7.0x Bristol-Myers Squibb Company NYSE:BMY Ś 71.39 87.7% - 117.3% 191.752.4 46,738.0 20,728.0 44.3% -6.7% 4.10x 4.14x 9.3x 8.8x \$ 27,136.0 12,775.0 Gilead Sciences, Inc. NasdagGS:GILD 85.85 95.7% - 150.2% 125,506.1 47.1% -11.2% 4.63x 4.71x 9.8x 8.1x Johnson & Johnson NYSE:JNJ Ś 176.65 94.6% - 113.4% 464,328.1 96,041.0 32,015.0 33.3% -1.7% 4.83x 4.92x 14.5x 14.0x Novartis AG SWX:NOVN \$ 90.40 94.5% - 114.8% 204,793.6 52,263.0 19,400.0 37.1% -7.0% 3.92x 3.95x 10.6x 11.2x Pfizer Inc. NYSE:PFE \$ 50.77 86.7% - 122.5% 289,643.4 99,878.0 44,754.0 44.8% 50.6% 2.90x 3.54x 6.5x 9.8x **ENXTPA:SAN** \$ 96.01 Sanofi 84.2% - 117.5% 136,128.7 43,487.0 12,912.6 29.7% 17.1% 3.13x 3.17x 10.5x 10.2x **United Therapeutics Corporation** NasdagGS:UTHR \$ 278.09 98.2% - 175.6% 10,279.3 1.860.0 1,031.0 55.4% 69.9% 5.53x 6.04x 10.0x 15.5x Mean 90.0% - 127.9% \$ 194,437.9 51,271.9 \$ 19,005.2 38.9% 17.1% 4.02x 4.32x 10.6x 11.8x Median 94.5% - 117.5% \$ 191,752.4 \$ 46,738.0 \$ 13,783.1 37.1% 13.1% 4.10x 4.14x 10.0x 10.2x

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.

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(\$ in thousands, except per security)

				Market Statistics					Me	trics	Valuation Benchmarks					
		Closing Price 31-Dec-22		% of 52-week	E	nterprise	П	Revenue		EBITDA	EBITDA	EBITDA	EV / Re	venue	EV / E	BITDA
Company	Ticker			High-Low		Value		LTM		LTM	LTM Margin 2	2022 E Growth	LTM	2021 E	LTM	2021 E
Imaging																
FUJIFILM Holdings Corporation	TSE:4901	\$	50.24	75.1% - 101.7%	\$	21,650.0	\$	18,457.6	\$	2,636.5	14.3%	-4.6%	1.17x	1.01x	8.2x	7.1
General Electric Company	NYSE:GE	\$	65.38	63.0% - 109.1%		109,555.7		75,072.0		7,414.0	9.9%	14.5%	1.46x	1.46x	14.8x	14.3
Hitachi, Ltd.	TSE:6501	\$	50.74	89.7% - 140.9%		64,811.6		74,980.6		6,919.2	9.2%	-4.1%	0.86x	0.75x	9.4x	6.3
Hologic, Inc.	NasdaqGS:HOLX	\$	74.81	92.9% - 125.1%		19,034.1		4,862.8		2,078.3	42.7%	-30.3%	3.91x	3.64x	9.2x	8.0
Intelligent Ultrasound Group plc	AIM:IUG	\$	0.10	49.5% - 101.8%		28.5		12.0		(3.4)	-28.2%	-27.2%	2.38x	2.76x	na	na
Koninklijke Philips N.V.	ENXTAM:PHIA	\$	14.97	41.3% - 115.4%		20,489.9		17,012.2		668.3	3.9%	-38.5%	1.20x	1.04x	30.7x	5.83
Shenzhen Mindray Bio-Medical Electronics	SZSE:300760	\$	45.81	83.6% - 124.7%		53,204.0		4,100.7		1,497.5	36.5%	12.2%	12.97x	13.24x	35.5x	36.3
Siemens Healthineers AG	XTRA:SHL	\$	49.94	69.4% - 115.9%		72,183.7		21,292.4		3,864.5	18.1%	6.4%	3.39x	3.33x	18.7x	16.8
Toshiba Corporation	TSE:6502	\$	34.90	77.5% - 115.4%		17,282.9		23,751.3		902.9	3.8%	-18.8%	0.73x	0.61x	19.1x	8.0
		Мес	n	71.3% - 116.7%	\$	42,026.7	\$	26,615.7	\$	2,886.4	12.3%	-10.1%	3.12x	3.09x	18.2x	12.8x
		Med	dian	75.1% - 115.4%	\$	21,650.0	\$	18,457.6	\$	2,078.3	9.9%	-4.6%	1.46x	1.46x	16.7x	8.0x
Robotic Surgery																
Accuray Incorporated	NasdaqGS:ARAY	\$	2.09	42.9% - 122.9%	\$	320.3	\$	419.0	\$	8.8	2.1%	-38.0%	0.76x	0.76x	36.3x	11.4
Globus Medical, Inc.	NYSE:GMED	\$	74.27	90.8% - 141.2%		6,674.6		998.4		268.7	26.9%	5.4%	6.69x	7.01x	24.8x	20.3
Intuitive Surgical, Inc.	NasdaqGS:ISRG	\$	265.35	73.3% - 147.4%		90,871.7		6,117.9		1,992.7	32.6%	-3.4%	14.85x	15.88x	45.6x	34.9
Smith & Nephew plc	LSE:SN.	\$	13.37	81.7% - 115.7%		14,004.4		5,213.0		1,196.0	22.9%	-0.3%	2.69x	2.68x	11.7x	10.5
Stereotaxis, Inc.	NYSEAM:STXS	\$	2.07	28.7% - 133.5%		136.0		29.1		(17.3)	-59.6%	51.0%	4.68x	4.01x	na	na
Stryker Corporation	NYSE:SYK	\$	244.49	87.2% - 129.5%		105,178.9		17,948.0		4,454.0	24.8%	-2.8%	5.86x	6.17x	23.6x	21.7
Zimmer Biomet Holdings, Inc.	NYSE:ZBH	\$	127.50	94.4% - 127.0%		32,197.6		7,900.9		2,393.4	30.3%	-9.5%	4.08x	4.09x	13.5x	12.8
		Мес	an	71.3% - 131.0%	\$	35,626.2	\$	5,518.0	\$	1,470.9	11.4%	0.4%	5.66x	5.80x	25.9x	18.6x
		Мес	dian	81.7% - 129.5%	\$	14,004.4	\$	5,213.0	\$	1,196.0	24.8%	-2.8%	4.68x	4.09x	24.2x	16.5x

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 (CONT.)**

					S	elected Com	pa	nies Revi	ew							
(\$ in thousands, except per security)																
		Market Sta	tistics					Me	etrics	Valuation Benchmarks						
		Clos	ing Price	% of 52-w	/eek	Enterprise	e Revenue EBITDA <i>EBITDA</i>		EBITDA	EV / Re	evenue	EV / EBITDA				
Company	Ticker	31-Dec-22		High-Low		Value	LTM		LTM		LTM Margin 2	022 E Growth	LTM	2021 E	LTM	2021 E
Orthopedics																
CONMED Corporation	NYSE:CNMD	\$	88.64	57.0% - 12	24.7%	\$ 3,742.8	\$	1,068.6	\$	184.3	17.2%	1.6%	3.50x	3.70x	20.3x	18.7x
Enovis Corporation	NYSE:ENOV	\$	53.52	37.5% - 12	22.0%	3,169.5		3,981.6		557.3	14.0%	-61.3%	0.80x	0.83x	5.7x	5.2x
Medtronic plc	NYSE:MDT	\$	77.72	68.0% - 10	02.6%	118,726.6		30,806.0		8,948.0	29.0%	-6.7%	3.85x	3.72x	13.3x	12.0x
NuVasive, Inc.	NasdaqGS:NUVA	\$	41.24	68.2% - 11	17.3%	2,916.1		1,198.6		219.3	18.3%	6.5%	2.43x	2.57x	13.3x	11.1x
Orthofix Medical Inc.	NasdaqGS:OFIX	\$	20.53	56.8% - 14	19.2%	386.1		463.5		14.0	3.0%	-8.7%	0.83x	0.83x	27.6x	6.7x
Smith & Nephew plc	LSE:SN.	\$	13.37	81.7% - 11	15.7%	14,004.4		5,213.0		1,196.0	22.9%	-0.3%	2.69x	2.68x	11.7x	10.5x
Stryker Corporation	NYSE:SYK	\$	244.49	87.2% - 12	29.5%	105,178.9		17,948.0		4,454.0	24.8%	-2.8%	5.86x	6.17x	23.6x	21.7x
Zimmer Biomet Holdings, Inc.	NYSE:ZBH	\$	127.50	94.4% - 12	27.0%	32,197.6		7,900.9		2,393.4	30.3%	-9.5%	4.08x	4.09x	13.5x	12.8x
		Мес	an	68.9% - 12	23.5%	\$ 35,040.3	\$	8,572.5	\$	2,245.8	20.0%	-10.2%	3.01x	3.07x	16.1x	12.3x
		Мес	dian	68.1% - 12	23.3%	\$ 8,873.6	\$ 4,597.3		4,597.3 \$		20.6%	20.6% -4.8%		3.19x	13.4x	11.6x
Cardiovascular																
Abbott Laboratories	NYSE:ABT	\$	109.30	78.2% - 11	17.2%	\$ 199,476.8	\$	45,030.0	\$	13,688.0	30.4%	-0.9%	4.43x	4.73x	14.6x	15.9x
Baxter International Inc.	NYSE:BAX	\$	50.97	56.8% - 10	04.0%	41,024.0		14,740.0		2,956.0	20.1%	13.0%	2.78x	3.25x	13.9x	13.6x
Becton, Dickinson and Company	NYSE:BDX	\$	254.30	90.6% - 11	17.8%	88,130.6		18,870.0		4,864.0	25.8%	-2.9%	4.67x	4.47x	18.1x	16.9x
Boston Scientific Corporation	NYSE:BSX	\$	46.27	96.5% - 13	32.3%	75,177.3		12,567.0		3,303.0	26.3%	5.4%	5.98x	6.33x	22.8x	21.8x
Edwards Lifesciences Corporation	NYSE:EW	\$	74.61	56.9% - 11	11.1%	45,345.2		5,363.8		1,843.9	34.4%	9.9%	8.45x	8.63x	24.6x	25.7x
Medtronic plc	NYSE:MDT	\$	77.72	68.0% - 10	02.6%	118,726.6		30,806.0		8,948.0	29.0%	-6.7%	3.85x	3.72x	13.3x	12.0x
		Мес	an	74.5% - 11	14.2%	\$ 94,646.8	\$	21,229.5	\$	5,933.8	27.7%	2.9%	5.03x	5.19x	17.9x	17.6x
		Мес	dian	73.1% - 11	14.2%	\$ 81,654.0	\$	16,805.0	\$	4,083.5	27.7%	2.2%	4.55x	4.60x	16.3x	16.4x

73.1% - 114.2% 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.

NasdaqGS:ONEM

NasdaqGM:CCLD

NasdaqGM:OTRK

NasdagGS:MDRX

SWX:SHLTN

NYSE:TDOC

NYSE:WELL

\$

\$

\$

\$

\$

\$

Mean

Median

16.71

2.81

0.37

16.01

23.65

17.64

65.55

				Market	Statistics						Me	trics		Valuation Benchmarks			
		Closing Price 31-Dec-22		% of 52-week High-Low		Enterprise Value		Revenue LTM		EBITDA LTM		EBITDA EBITDA LTM Margin 2022 E Growth		EV / Re	venue	EV / EBITDA	
Company	Ticker													LTM	2021 E	LTM	2021 E
Diagnostics/Lab Testing																	
Enzo Biochem, Inc.	NYSE:ENZ	\$	1.43	40.7%	- 128.8%	\$	77.3	\$	98.8	\$	(20.3)	-20.5%	na	0.78x	na	na	na
Exact Sciences Corporation	NASDAQ:EXAS	\$	49.51	58.6%	- 169.1%		10,602.2		2,005.1		(413.9)	-20.6%	-46.3%	5.29x	6.08x	na	na
Laboratory Corporation of America Holdings	NYSE:LH	\$	235.48	75.0%	- 117.6%		26,850.8		15,258.7		3,156.1	20.7%	-27.6%	1.76x	1.68x	8.5x	6.5
Myriad Genetics, Inc.	NASDAQ:MYGN	\$	14.51	51.0%	- 104.2%		1,053.9		661.4		(6.5)	-1.0%	-127.5%	1.59x	1.53x	na	14.2
NeoGenomics, Inc.	NASDAQ:NEO	\$	9.24	26.1%	- 154.0%		1,335.1		496.8		(95.4)	-19.2%	2809.1%	2.69x	2.75x	na	na
Quest Diagnostics Incorporated	NYSE:DGX	\$	155.74	90.3%	- 129.4%		22,119.5		10,294.0		2,304.0	22.4%	-27.4%	2.15x	2.07x	9.6x	7.73
		Me	an	57.0%	- 133.9%	\$	10,339.8	\$	4,802.5	\$	820.7	-3.0%	516.1%	2.38x	2.82x	9.1x	9.5x
		Me	dian	54.8%	- 129.1%	\$	5,968.7	\$	1,333.2	\$	(13.4)	-10.1%	-27.6%	1.95x	2.07x	9.1x	7.7x

\$ 3,914.8

44.9

13.8

242.0

4,543.1

1,710.9

47,489.7

8,279.9

1,710.9

\$

\$

\$

1,001.5

143.8

22.3

59.5

2,323.4

1.529.0

5,651.3

1,533.0

1,001.5

\$

(288.6)

16.2

(44.1)

2.6

3.8

115.4

278.9

3.8

2,147.3

-28.8%

11.3%

-197.3%

4.3%

0.2%

7.5%

38.0%

-23.5%

4.3%

314.3%

816.2%

-4.8%

-7.7%

-42.1%

15.4%

181.9%

5.3%

na

3.91x

0.31x

0.62x

4.07x

1.96x

1.12x

8.40x

2.91x

1.96x

6.40x

0.32x

0.16x

2.24x

1.14x

10.27x

3.42x

1.69x

na

na

2.8x

na

nm

nm

14.8x

22.1x

13.2x

14.8x

na

1.9x

na

na

17.3x

5.8x

26.2x

12.8x

11.6x

**Selected Companies Review** 

65.9% - 108.8% 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.

90.7% - 281.3%

40.2% - 103.3%

5.6% - 107.5%

76.7% - 108.8%

24.7% - 105.8%

75.9% - 129.8%

65.9% - 116.0%

54.2% - 136.1%

Sources of information: S&P Capital IQ.

1Life Healthcare, Inc.

SHL Telemedicine Ltd.

Teladoc Health, Inc.

CareCloud, Inc.

Veradigm Inc.

Welltower Inc.

Ontrak, Inc.

# SELECTED PUBLIC COMPANIES - SERVICES (CONT.)

## **Selected Companies Review**

(\$ in thousands, except per security)

				<b>Market Statistics</b>					Me	trics			Valuation	Benchmark	ımarks						
		Closing Price Ticker 31-Dec-22		% of 52-week	Enterprise	Rev	enue	E	BITDA	EBITDA	EBITDA	EV / Re	venue	EV / E	BITDA						
Company	Ticker			High-Low	Value	LTM		LTM		LTM Margin 2022 E Growt		LTM	2021 E	LTM	2021 E						
Facilities-Based & Practices																					
Acadia Healthcare Company, Inc.	NasdaqGS:ACHC	\$	82.32	91.6% - 164.4%	\$ 9,070.7	\$ 2	2,528.6	\$	551.9	21.8%	10.8%	3.59x	3.91x	16.4x	16.5>						
Amedisys, Inc.	NasdaqGS:AMED	\$	83.54	46.4% - 105.1%	3,312.3	2	2,220.5		234.5	10.6%	-14.2%	1.49x	1.50x	14.1x	11.2>						
Brookdale Senior Living Inc.	NYSE:BKD	\$	2.73	35.9% - 104.6%	5,228.2	2	2,546.1		191.7	7.5%	79.4%	2.05x	1.89x	27.3x	37.5>						
Community Health Systems, Inc.	NYSE:CYH	\$	4.32	29.3% - 229.8%	13,544.0	12	2,302.0		1,275.0	10.4%	-25.8%	1.10x	1.10x	10.6x	7.2>						
DaVita Inc.	NYSE:DVA	\$	74.67	59.8% - 114.4%	19,878.9	11	1,637.0		2,157.7	18.5%	-16.2%	1.71x	1.71x	9.2x	8.0x						
Encompass Health Corporation	NYSE:EHC	\$	59.81	80.2% - 134.9%	9,397.8	5	5,360.5		1,022.7	19.1%	-18.9%	1.75x	1.84x	9.2x	9.12						
Fresenius Medical Care AG & Co. KGaA	XTRA:FME	\$	32.67	48.0% - 117.8%	27,181.4	18	3,678.4		2,363.4	12.7%	-8.5%	1.46x	1.35x	11.5x	7.0>						
HCA Healthcare, Inc.	NYSE:HCA	\$	239.96	86.0% - 145.9%	108,782.7	59	9,800.0		11,973.0	20.0%	-4.7%	1.82x	1.84x	9.1x	8.6						
Pediatrix Medical Group, Inc.	NYSE:MD	\$	14.86	53.0% - 103.2%	1,931.5	1	1,956.7		249.8	12.8%	-3.8%	0.99x	1.02x	7.7x	7.7>						
National HealthCare Corporation	NYSEAM:NHC	\$	59.50	79.0% - 103.3%	873.8	1	1,078.6		76.6	7.1%	na	0.81x	na	11.4x	na						
Oak Street Health, Inc.	NYSE:OSH	\$	21.51	62.1% - 161.9%	6,029.6	1	1,977.3		(424.4)	-21.5%	25.0%	3.05x	4.23x	na	na						
RadNet, Inc.	NasdaqGM:RDNT	\$	18.83	61.9% - 156.5%	2,572.9	1	1,382.2		162.7	11.8%	-8.3%	1.86x	1.93x	15.8x	12.0>						
Select Medical Holdings Corporation	NYSE:SEM	\$	24.83	80.6% - 131.7%	8,273.5	6	5,311.9		566.1	9.0%	-30.6%	1.31x	1.34x	14.6x	8.6						
Sonida Senior Living, Inc.	NYSE:SNDA	\$	12.50	34.3% - 111.1%	760.9		207.2		8.5	4.1%	na	3.67x	na	nm	na						
Surgery Partners, Inc.	NasdaqGS:SGRY	\$	27.86	43.6% - 136.2%	8,055.7	2	2,442.4		456.5	18.7%	15.6%	3.30x	3.60x	17.6x	24.8						
Tenet Healthcare Corporation	NYSE:THC	\$	48.79	52.7% - 133.0%	22,512.1	19	9,040.0		3,341.0	17.5%	2.9%	1.18x	1.15x	6.7x	6.8						
The Ensign Group, Inc.	NasdaqGS:ENSG	\$	94.61	97.1% - 134.6%	6,501.3	2	2,909.1		346.2	11.9%	14.1%	2.23x	2.47x	18.8x	19.2>						
Universal Health Services, Inc.	NYSE:UHS	\$	140.89	89.0% - 170.8%	15,272.2	13	3,227.6		1,653.9	12.5%	-14.2%	1.15x	1.22x	9.2x	8.0						
		Мес	ın	62.8% - 136.6%	\$ 14,954.4	\$ 9	9,200.3	\$	1,455.9	11.4%	0.2%	1.92x	2.01x	13.1x	12.8x						
		Med	lian	60.9% - 133.8%	\$ 8,164.6		2,727.6	, \$	504.2	12.2%	-6.5%	1.73x	1.78x	11.5x	8.6x						

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.

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