



STRATEGIC M&A REPORT 2021

LIFE SCIENCES AND HEALTHCARE

AEKLVYA ADVISORS, INC.
Investment Banking, New York



ABOUT AEKLVYA ADVISORS

Aeklvya Advisors is a boutique cross-border investment banking firm providing mergers and acquisitions, capital raising, business valuation, and strategic advisory services to small and mid-sized companies. We specialize in the life science and healthcare sectors, including diagnostics, research, medical devices, contract pharma and healthcare services.

We provide companies with an alternative to traditional investment banking services, typically available only to large-cap companies. Our clients also benefit from our hands-on experience in middle-market transactions. Small companies and entrepreneur-owned businesses often lack sufficient resources, requiring more guidance, support, and assistance. Therefore, we are always available by phone or email to assist our clients. In addition, through our expertise in M&A, capital raising, business valuation, and strategic advisory services, we help our clients through all phases of the business cycle.

While avoiding all conflicts of interest, we ensure complete confidentiality, transparency, and the best interests of our clients. We are proud of our client-focused culture, integrity, and unbiased strategic advice. We support our clients across a broad range of objectives:

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- Selling a company
- Buying a company
- Divestitures of corporate assets or divisions
- Acquisition Searches

Capital Raising

- Debt
- Equity

Business Valuation

- Planning, Strategy, and Formal Needs

Strategic Advisory

- Buy and Sale Preparedness
- Exit Planning

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STRATEGIC HIGHLIGHTS

The life sciences and healthcare industries witnessed strong mergers and acquisitions (“M&A”) and capital markets activities across the globe in 2021. In response to COVID-19, many companies immediately turned to M&A to safeguard their futures. However, many were drawn to digitalization, agile operating, and supply chain models, that inspired them to make transformative acquisitions to react quickly to irreversible changes in their businesses. According to Bloomberg, healthcare deal volume exceeds 3,000 in 2021. This magnitude of deals clearly demonstrates that M&A has become one of the most dominant forces for responding to the changes in this dynamic and innovative space.

M&A offers a much quicker route to expansion and liquidity for the small and mid-sized businesses. Strategic companies and Private Equity (“PE”) groups constantly acquire smaller companies for innovative capabilities, geographical expansion, sales growth, and other synergies. Researcher indicates PE groups accounted for about 31% of all the deals in the United States. The numbers will likely increase in 2022 since they have done record fundraising and hold over \$2 trillion in dry powder globally. On the other hand, public companies are experiencing soaring profits, sparking a spree of platform and bolt-on acquisitions.

Demand for life science and healthcare products and services will continue to grow, boosting opportunities for the investors. Large pharma acquiring biotech companies, and big-ticket deals in diagnostics, contract pharma, research, medical devices, and instruments have pushed the dealmaking to a new level. Within pharma, we are noticing significant investment in drugs, biologics, and new genetic therapies. With the pandemic, we are also noticing record-breaking M&A and investments in Healthcare IT / Information services, and digital health.

With investor demand and financial capacity on the rise again, we can expect to see a significant ramp up of activity across the life sciences sector, with new market players pushing valuations higher. The momentum is expected to stay, affecting both private and public markets.

Getting ready for the future: The pandemic highlighted the need to enhance digital capabilities, changed how patients expect to receive care, and accelerated the development of new vaccines. While the timing of when we will move past the pandemic is uncertain, what is certain is that life sciences companies need to continue re-evaluating their long-term strategy and investing in the assets and capabilities that will enable that strategy. This can be achieved more quickly by M&A or partnering than by building independently.

We expect vaccination and booster shot rates to increase in 2022, the pandemic to subside, and business conditions in COVID-affected sectors to improve, resulting in companies investing more in accelerating growth, scaling, and digitizing their operations.

In our 2021 Strategic M&A report, we explore the increased dealmaking within the life sciences and healthcare sectors. The report also highlights notable M&A and SPAC transactions in this sector, as well as the performance of major public companies across industry sub-segments that are transforming the overall industry.

PERFORMANCE OF LEADING PUBLIC COMPANIES

Key Trading Statistics

The COVID-19 pandemic has imposed many economic disruptions, social complexities, and public-health emergencies worldwide. These factors have prompted demands of analytical instruments and consumables, diagnostics, medical instruments, outsourced pharmaceutical services (research, manufacturing, packaging), and health information services besides other related products and services. A favorable demand environment will continue to drive sturdy growth for the businesses, leading to continued M&A deals across all the subsectors. To remain focused and innovative, larger companies will continue to diversify their portfolios through spinoffs and reinvest in adjacent areas. The following chart shows the performance of some of the leading public companies as of December 31, 2021.

| | Company | Ticker | Market Cap (\$B) | Enterprise Value "EV" (\$B) | 1-Year Performance | TTM Revenue (\$B) | EV/Revenue | EV/EBITDA |
|--------------------------|-----------------------------------|--------|------------------|-----------------------------|--------------------|-------------------|------------|-----------|
| BIOTECHNOLOGY | BioNTech SE | BNTX | 58.11 | 55.67 | 205.94% | 15.97 | 3.49x | 4.7x |
| | CSL Limited | CSLLY | 101.53 | 105.39 | -3.77% | 10.31 | 10.22x | 30.5x |
| | Moderna, Inc. | MRNA | 100.50 | 92.18 | 126.40% | 11.83 | 7.79x | 11.9x |
| | Novo Nordisk A/S | NVO | 254.96 | 251.67 | 58.76% | 20.97 | 12.00x | 26.7x |
| | Regeneron Pharmaceuticals, Inc. | REGN | 67.68 | 58.96 | 34.33% | 13.36 | 4.41x | 7.9x |
| | Bio-Techne Corporation | TECH | 19.75 | 19.90 | 60.51% | 0.98 | 20.21x | 63.1x |
| | | | | | | Average | 9.69x | 24.1x |
| | | | | | | Median | 9.01x | 19.3x |
| DIAGNOSTICS AND RESEARCH | Agilent Technologies, Inc. | A | 48.52 | 49.85 | 37.05% | 6.32 | 7.89x | 28.8x |
| | bioMérieux S.A. | BMXMF | 16.83 | 16.92 | -2.20% | 3.81 | 4.44x | 16.0x |
| | Charles River Laboratories | CRL | 18.84 | 21.84 | 51.20% | 3.43 | 6.37x | 26.2x |
| | Quest Diagnostics Incorporated | DGX | 20.87 | 24.65 | 44.80% | 11.05 | 2.23x | 7.9x |
| | Danaher Corporation | DHR | 233.37 | 258.72 | 48.84% | 28.06 | 9.22x | 26.8x |
| | Eurofins Scientific SE | ERFSF | 24.16 | 26.48 | 45.24% | 7.58 | 3.50x | 12.6x |
| | ICON Public Limited Company | ICLR | 25.07 | 30.24 | 59.71% | 4.36 | 6.93x | 45.7x |
| | IDEXX Laboratories, Inc. | IDXX | 55.60 | 56.42 | 33.07% | 3.14 | 17.99x | 55.3x |
| | Illumina, Inc. | ILMN | 59.06 | 60.33 | 5.53% | 4.28 | 14.10x | 65.7x |
| | IQVIA Holdings Inc. | IQV | 53.92 | 64.88 | 59.20% | 13.54 | 4.79x | 27.7x |
| | Laboratory Corporation of America | LH | 29.54 | 33.84 | 55.50% | 16.55 | 2.04x | 7.3x |
| | Lonza Group Ltd | LZAGF | 61.88 | 65.40 | 28.55% | 5.20 | 12.59x | 40.5x |
| | Mettler-Toledo International Inc. | MTD | 39.12 | 40.63 | 50.15% | 3.62 | 11.23x | 38.8x |
| | PerkinElmer, Inc. | PKI | 24.92 | 29.72 | 41.95% | 5.06 | 5.88x | 15.3x |
| | Siemens Healthineers AG | SMMNY | 83.57 | 98.21 | 45.12% | 20.84 | 4.71x | 25.7x |
| | Sysmex Corporation | SSMYX | 28.27 | 27.77 | 12.89% | 3.07 | 9.04x | 33.5x |
| | Thermo Fisher Scientific Inc. | TMO | 261.15 | 270.83 | 44.12% | 39.06 | 6.93x | 20.4x |
| Waters Corporation | WAT | 22.63 | 23.69 | 51.49% | 2.74 | 8.66x | 24.6x | |
| WuXi AppTec Co., Ltd. | WUXAY | 54.78 | 53.84 | - | 3.29 | 16.35x | 69.2x | |
| | | | | | | Average | 8.22x | 31.0x |
| | | | | | | Median | 7.41x | 26.8x |
| MEDICAL DEVICES | Abiomed, Inc. | ABMD | 16.46 | 15.61 | 11.77% | 0.97 | 16.03x | 54.2x |
| | Abbott Laboratories | ABT | 242.14 | 251.06 | 30.03% | 42.31 | 5.93x | 20.3x |
| | Align Technology, Inc. | ALGN | 51.52 | 50.38 | 26.30% | 3.76 | 13.41x | 47.0x |
| | Bio-Rad Laboratories, Inc. | BIO | 22.32 | 21.21 | 31.98% | 2.98 | 7.12x | 27.9x |
| | Bruker Corporation | BRKR | 12.70 | 12.89 | 58.81% | 2.36 | 5.46x | 25.4x |
| | Boston Scientific Corporation | BSX | 61.52 | 69.03 | 20.93% | 11.47 | 6.02x | 22.5x |
| | DexCom, Inc. | DXCM | 51.89 | 51.08 | 49.22% | 2.32 | 22.02x | 114.2x |
| | Edwards Lifesciences | EW | 81.56 | 80.45 | 45.78% | 5.09 | 15.79x | 46.8x |
| | Medtronic plc | MDT | 139.77 | 154.80 | -9.66% | 31.80 | 4.87x | 16.1x |
| | Koninklijke Philips N.V. | PHG | 33.36 | 41.13 | -31.73% | 22.78 | 1.81x | 15.1x |
| | Insulet Corporation | PODD | 18.63 | 19.06 | 3.46% | 1.04 | 18.38x | 138.9x |
| | Smith & Nephew plc | SNN | 15.27 | 17.40 | -18.20% | 5.12 | 3.40x | 15.1x |
| | STERIS plc | STE | 24.24 | 27.51 | 31.61% | 3.85 | 7.15x | 29.2x |
| | Stryker Corporation | SYK | 102.27 | 112.69 | 11.83% | 16.67 | 6.76x | 24.3x |
| | Zimmer Biomet Holdings | ZBH | 26.79 | 33.38 | -15.73% | 7.88 | 4.23x | 14.0x |
| | | | | | | Average | 9.23x | 40.7x |
| | | | | | | Median | 6.76x | 25.4x |

| | Company | Ticker | Market Cap (\$B) | Enterprise Value "EV" (\$B) | 1-Year Performance | TTM Revenue (\$B) | EV/Revenue | EV/EBITDA | |
|--|--------------------------------|--------|------------------|-----------------------------|--------------------|-------------------|------------|-----------|-------|
| MEDICAL INSTRUMENTS AND SUPPLIES | Alcon Inc. | ALC | 43.28 | 46.27 | 32.31% | 8.08 | 5.73x | 24.0x | |
| | Baxter International Inc. | BAX | 43.66 | 46.88 | 9.15% | 12.45 | 3.77x | 16.5x | |
| | Becton, Dickinson, and Company | BDX | 72.06 | 87.84 | 2.67% | 20.25 | 4.34x | 15.6x | |
| | Coloplast A/S | CLPB | 37.28 | 37.60 | 14.17% | 3.03 | 12.43x | 35.1x | |
| | The Cooper Companies, Inc. | COO | 20.78 | 22.44 | 18.96% | 2.92 | 7.68x | 24.6x | |
| | Carl Zeiss Meditec AG | CZMWY | 18.71 | 18.86 | 54.37% | 1.91 | 9.89x | 41.9x | |
| | EssilorLuxottica SA | ESLOY | 86.64 | 89.48 | 34.45% | 20.12 | 4.45x | 20.5x | |
| | HOYA Corporation | HOCPY | 54.85 | 51.50 | 7.56% | 5.56 | 9.26x | 25.1x | |
| | Hologic, Inc. | HOLX | 18.88 | 20.86 | 6.79% | 5.63 | 3.70x | 7.2x | |
| | Intuitive Surgical, Inc. | ISRG | 130.49 | 126.40 | 33.68% | 5.49 | 23.03x | 60.5x | |
| | Olympus Corporation | OCPNY | 29.60 | 30.84 | 5.09% | 7.43 | 4.15x | 16.4x | |
| | ResMed Inc. | RMD | 38.17 | 38.81 | 24.92% | 3.35 | 11.59x | 36.2x | |
| | Sartorius AG | SUVPF | 42.36 | 44.91 | 48.28% | 3.69 | 12.18x | 37.4x | |
| | Terumo Corporation | TRUMY | 31.94 | 32.34 | 1.55% | 6.07 | 5.33x | 20.3x | |
| | West Pharmaceutical Services | WST | 34.67 | 34.30 | 68.37% | 2.68 | 12.79x | 42.4x | |
| | | | | | | Average | 8.69x | 28.2x | |
| | | | | | | Median | 7.68x | 24.6x | |
| DRUG MANUFACTURER – GENERAL | AbbVie Inc. | ABBV | 239.30 | 307.82 | 29.13% | 55.17 | 5.58x | 10.7x | |
| | Amgen Inc. | AMGN | 128.20 | 152.86 | -0.31% | 25.77 | 5.93x | 12.5x | |
| | AstraZeneca PLC | AZN | 181.35 | 208.75 | 16.52% | 32.82 | 6.36x | 33.0x | |
| | Bristol-Myers Squibb Company | BMJ | 138.26 | 168.31 | 0.97% | 45.47 | 3.70x | 8.5x | |
| | Johnson & Johnson | JNJ | 451.62 | 451.98 | 10.42% | 91.45 | 4.94x | 14.3x | |
| | Eli Lilly and Company | LLY | 252.41 | 264.41 | 66.01% | 27.76 | 9.53x | 27.4x | |
| | Merck & Co., Inc. | MRK | 194.37 | 210.84 | 0.38% | 52.61 | 4.01x | 10.0x | |
| | Novartis AG | NVS | 196.44 | 223.37 | -7.31% | 52.39 | 4.26x | 11.1x | |
| | Pfizer Inc. | PFE | 323.19 | 333.64 | 58.95% | 69.34 | 4.81x | 12.2x | |
| | Roche Holding AG | RHHBF | 335.59 | 348.54 | 25.60% | 67.11 | 5.19x | 13.8x | |
| | Sanofi | SNYNF | 126.64 | 140.28 | 3.21% | 44.59 | 3.15x | 10.7x | |
| | | | | | | | Average | 5.22x | 14.9x |
| | | | | | | | Median | 4.94x | 12.2x |
| DRUG MANUFACTURERS - SPECIALTY & GENERIC | Catalent, Inc. | CTLT | 21.93 | 24.58 | 24.54% | 4.18 | 5.89x | 24.0x | |
| | Eisai Co., Ltd. | ESALY | 16.27 | 14.80 | -20.34% | 6.21 | 2.38x | 14.0x | |
| | MERCK KGaA | MKKG | 111.71 | 122.32 | 50.51% | 22.09 | 5.54x | 19.9x | |
| | Dr. Reddy's Laboratories | RDY | 10.93 | 11.01 | -7.52% | 2.74 | 4.02x | 18.3x | |
| | Takeda Pharmaceutical | TAK | 42.46 | 73.95 | -25.30% | 30.56 | 2.42x | 7.7x | |
| | Teva Pharmaceutical | TEVA | 9.30 | 32.41 | -17.71% | 16.23 | 2.00x | 7.5x | |
| | Zoetis Inc. | ZTS | 116.88 | 120.34 | 49.24% | 7.62 | 15.80x | 38.4x | |
| | | | | | | | Average | 5.43x | 18.5x |
| | | | | | | Median | 4.02x | 18.3x | |
| IT / IS | M3, Inc. | MTHRY | 34.17 | 33.22 | -47.83% | 1.72 | 19.28x | 51.5x | |
| | Veeva Systems Inc. | VEEV | 39.80 | 37.51 | -5.81% | 1.76 | 21.29x | 73.3x | |
| | | | | | | | Average | 20.28x | 62.4x |
| | | | | | | Median | 20.28x | 62.4x | |
| HEALTHCARE PLANS | Anthem, Inc. | ANTM | 113.51 | 131.82 | 48.75% | 133.88 | 0.98x | 15.1x | |
| | Cigna Corporation | CI | 76.78 | 108.28 | 13.09% | 170.40 | 0.64x | 10.7x | |
| | CVS Health Corporation | CVS | 136.99 | 203.11 | 53.03% | 283.98 | 0.72x | 11.4x | |
| | Humana Inc. | HUM | 60.29 | 68.50 | 14.82% | 82.20 | 0.83x | 16.3x | |
| | UnitedHealth Group | UNH | 476.18 | 506.42 | 46.22% | 279.32 | 1.81x | 20.9x | |
| | | | | | | | Average | 1.00x | 14.9x |
| | | | | | | Median | 0.83x | 15.1x | |
| CARE FACILITIES | DaVita Inc. | DVA | 11.56 | 24.13 | -1.92% | 11.58 | 2.08x | 9.9x | |
| | Fresenius Medical | FMS | 18.95 | 33.53 | -22.16% | 20.12 | 1.67x | 10.7x | |
| | HCA Healthcare, Inc. | HCA | 80.40 | 115.84 | 58.98% | 57.98 | 2.00x | 9.3x | |
| | | | | | | | Average | 1.92x | 10.0x |
| | | | | | | Median | 2.00x | 9.9x | |
| RETAIL | Rite Aid Corporation | RAD | 0.79 | 7.04 | -8.70% | 24.42 | 0.29x | 17.6x | |
| | Walgreens Boots Alliance | WBA | 45.14 | 79.10 | 32.16% | 132.51 | 0.60x | 14.8x | |
| | | | | | | | Average | 0.44x | 16.2x |
| | | | | | | Median | 0.44x | 16.2x | |
| MEDICAL DISTRIBUTION | AmerisourceBergen | ABC | 27.75 | 33.37 | 37.96% | 213.99 | 0.16x | 10.5x | |
| | Cardinal Health, Inc. | CAH | 14.67 | 17.86 | -2.47% | 167.37 | 0.11x | 6.6x | |
| | Henry Schein, Inc. | HSIC | 10.82 | 13.09 | 18.39% | 12.24 | 1.07x | 12.9x | |
| | McKesson Corporation | MCK | 37.94 | 44.32 | 43.52% | 250.99 | 0.18x | 10.8x | |
| | | | | | | | Average | 0.38x | 10.2x |
| | | | | | | Median | 0.17x | 10.7x | |

NOTABLE M&A TRANSACTIONS

Announced U.S. Healthcare and Life Sciences M&A

Globally, 2021 was an active year for M&A deals with some level of deferred M&A from 2020. We anticipate that it should continue in 2022. Deal valuations will continue to rise in 2022, and despite soaring valuations, tax, and interest rate issues both private and public markets players will continue to make deals in 2022.

Companies in the life sciences and healthcare industries will continue to evolve with and through this pandemic, using a wide array of strategies, tools, and technologies to adapt to the new environment. According to a report from PWC, 2022 will see the M&A investments to reach \$350 billion to \$400 billion from approximately \$ 270 billion in 2021. Big-ticket deals in biotech, pharma, contract pharma services and medical devices are expected to drive significant investment dollars in M&A. According to Datasite, PE groups are sitting on \$1.9 trillion in dry powder and are looking to invest at the same pace. PE groups accounted for a third of all deals in 2021.

There is a large amount of liquidity in the marketplace, and the underlying conditions driving dealmaking are continuing across all sub-sectors. The table below captures the notable M&A transactions over \$100 million in deal value as of December 31, 2021.

| DATE ANNOUNCED | TARGET | DESCRIPTION | ACQUIRER | ENTERPRISE VALUE ("EV") (\$M) | EV / LTM REVENUE | EV / LTM EBITDA |
|----------------------|---|---|--|-------------------------------|------------------|-----------------|
| BIOTECHNOLOGY | | | | | | |
| 2/23/2021 | Guide Therapeutics, Inc. | Developer of nonviral drug delivery vehicles for genetic medicines | Beam Therapeutics Inc. (Nasdaq: BEAM) | 120.00 | - | - |
| 2/25/2021 | Pandion Therapeutics, Inc. (Nasdaq: PAND) | Developer of therapeutics for inflammatory diseases | Merck (NYSE: MRK) | 1,850.0 | 209.20x | - |
| 3/19/2021 | Five Prime Therapeutics, Inc. | Innovative immuno-oncology protein therapeutics | Amgen Inc. (Nasdaq: AMGN) | 1,900.0 | - | - |
| 4/9/2021 | Tidal Therapeutics, Inc. | Preclinical biotech for oncology and immune treatment with mRNA tech | Sanofi (ENXTPA: SAN) | 160.0 | - | - |
| 6/2/2021 | Constellation Pharmaceuticals, Inc. | Therapies for cancer treatments associated with drug resistance | MorphoSys AG (XTRA:MOR) | 1,700.0 | - | - |
| 6/14/2021 | Novellus Therapeutics | Developer of engineered cellular medicines | Brooklyn ImmunoTherapeutics (Nasdaq: BTX) | 125.0 | - | - |
| 7/12/2021 | Prothena Corporation | Provider of expertise in protein dysregulation | Novo Nordisk (NYSE: NVO) | 1,200.0 | - | - |
| 7/14/2021 | Protomer Technologies | Developer of research for metabolic diseases | Eli Lilly and Company (NYSE: LLY) | 1,000.0 | - | - |
| 7/27/2021 | TeneoBio, Inc. | Developer of multi-specific biotherapeutic antibodies | Amgen Inc. (Nasdaq: AMGN) | 900.0 | - | - |
| 8/3/2021 | Translate Bio (NASDAQ: TBIO) | Clinical-stage mRNA therapeutics company | Sanofi (ENXTPA:SAN) | 3,200.0 | - | - |
| 8/23/2021 | Trillium Therapeutics Inc. (TSX:TRIL) | Clinical stage immuno-oncology therapeutics company | Pfizer Inc. (NYSE: PFE) | 2,260.0 | - | - |
| 9/8/2021 | Kadmon Holdings, Inc. (Nasdaq: KDMN) | Maker of T-cell immunotherapy products for cancers | Sanofi (ENXTPA:SAN) | 1,731.9 | 88.10x | - |
| 9/13/2021 | First Wave Bio, Inc. | Developer of gut-targeted small molecules for inflamm. bowel disease | First Wave BioPharma, Inc. (Nasdaq: FWBI) | 229.0 | - | - |
| 9/30/2021 | Accelaron Pharma Inc. (Nasdaq: XLRN) | Biopharmaceutical products | Merck (NYSE: MRK) | 11,500.0 | - | - |
| 10/6/2021 | Caelum, subsidiary of Fortress Biotech, Inc. (NASDAQ: FBIO) | Clinical-stage biotech, makes antibody for tx of light chain (AL) amyloidosis | Alexion, subsidiary of AstraZeneca | 500.0 | - | - |
| 11/18/2021 | Dicerna Pharmaceuticals, Inc. (Nasdaq: DRNA) | Ribonucleic acid interference (RNAi)-based pharmaceuticals | Novo Nordisk A/S (CPSE:NOVO B) | 3,300.0 | - | - |
| 11/29/2021 | Lengo Therapeutics, Inc. | Biopharmaceutical company focused on precision oncology | Blueprint Medicines Corporation (Nasdaq: BPMP) | 250.0 | - | - |
| 12/13/2021 | Arena Pharmaceuticals, Inc. (Nasdaq: ARNA) | Biopharmaceutical for treatment of GI, dermatology, and cardiology | Pfizer Inc. (NYSE:PFE) | 6,700.0 | - | - |
| 12/21/2021 | Amunix Pharmaceuticals, Inc. | Preclinical immuno-oncology for masked T Cell engager and cytokines | Sanofi (Nasdaq: SNY) | 1,000.0 | - | - |

| DATE ANNOUNCED | TARGET | DESCRIPTION | ACQUIRER | ENTERPRISE VALUE ("EV") (\$M) | EV / LTM REVENUE | EV / LTM EBITDA |
|---------------------------------|--|--|---|-------------------------------|------------------|-----------------|
| DIAGNOSTICS AND RESEARCH | | | | | | |
| 1/19/2021 | Mesa Biotech, Inc. | Develop of molecular diagnostic tests | Thermo Fisher (NYSE:TMO) | 450.0 | 10.00x | - |
| 2/3/2021 | Decipher Biosciences | Developer of genomic tests for prostate cancers | Veracyte, Inc. (Nasdaq: VCYT) | 600.0 | 15.00x | - |
| 2/17/2021 | Cognate BioServices | Cell and gene therapy CDMO | Charles River (NYSE:CRL) | 875.0 | 6.25x | - |
| 2/24/2021 | PRA Health Sciences | Full-service, global CRO | ICON plc (Nasdaq: ICLR) | 12,000.0 | 3.77x | 27.7x |
| 3/1/2021 | Allergan Biologics Limited | Branded pharmaceutical, biologic, and surgical medicines | Pharmaron | 118.7 | - | - |
| 3/2/2021 | Resolution Bioscience, Inc. | Non-invasive liquid biopsy platform for cancer diagnostics | Agilent Technologies, Inc. (NYSE: A) | 550.0 | - | - |
| 3/3/2021 | Genosity Inc. | Developer of tools used in genomics | Invitae (NYSE: NVTA) | 200.0 | - | - |
| 4/1/2021 | Kantar Health | Provider of data, analytics, and life science research | Cerner Corporation (Nasdaq: CERN) | 375.0 | - | - |
| 4/8/2021 | Velocity Clinical Research [PE-backed by NaviMed Capital] | NC-based research site organization focused on patient engagement | GHO Capital Private Equity | 500.0 | - | - |
| 4/11/2021 | Luminex Corporation | Developer of biological testing devices for diagnostics | DiaSorin S.p.A. (BIT:DIA) | 1,800.0 | - | - |
| 4/15/2021 | PPD, Inc. (Nasdaq: PPD) | Provider of drug development services to the biopharma | Thermo Fisher (NYSE:TMO) | 19,942.7 | 3.40x | 18.7x |
| 5/12/2021 | Nexcelom Bioscience | Image cytometry for cell analysis in life science research | PerkinElmer, Inc. (NYSE:PKI) | 260.0 | 6.50x | - |
| 5/17/2021 | Vigene Biosciences | Provider of viral vector-based gene delivery systems | Charles River (NYSE:CRL) | 292.5 | - | - |
| 6/2/2021 | Cantel Medical Corp. | Developer of diagnostic and therapeutic medical equipment | Steris plc (NYSE: STE) | 4,600.0 | - | - |
| 6/15/2021 | BBI Group | Immunoassay development and manufacturing services | Novo Holdings A/S | 563.0 | - | - |
| 6/17/2021 | Aldevron, LLC | Biologics CDMO | Danaher Corporation (NYSE: DHR) | 9,600.0 | - | - |
| 6/25/2021 | Alliance Healthcare Services | Provider of radiology and oncology solutions to hospitals and physicians | Akumin Corp. (NASDAQ/TSX: AKU) | 1,516.3 | - | - |
| 7/2/2021 | PAREXEL International Corporation | Clinical research, technology products, and consulting | EQT Partners, Goldman Sachs | 8,500.0 | - | - |
| 7/20/2021 | Omniome, Inc. | Developer of a DNA sequencing platform for clinical sequencing | Pacific Biosciences (Nasdaq: PACB) | 800.0 | - | - |
| 7/26/2021 | BioLegend, Inc. | Maker of antibodies and reagents for biomed research | PerkinElmer, Inc. (NYSE: PKI) | 5,250.0 | 13.80x | - |
| 8/2/2021 | BioVision, Inc. | Developer biochemical assay and cellular assay | Abcam US Group Holdings Inc. | 340.0 | 10.10x | - |
| 8/5/2021 | Pinnacle 21 | Software for clinical trial data for regulatory submission | Certara, Inc. (Nasdaq: CERT) | 310.0 | - | - |
| 9/14/2021 | Agena Bioscience, Inc. | Provider of dx service to track many diseases or mutations | Mesa Laboratories, Inc. (Nasdaq: MLAB) | 300.0 | 4.50x | - |
| 10/22/2021 | 23andMe, Inc. | Developer of direct-to-consumer DNA test kits, consumer genetics company | Lemonaid Health, Inc. | 400.0 | - | - |
| 11/9/2021 | Absorption Systems | Scientific, non-clinical CRO for small and large molecules | Pharmaron | 137.5 | - | - |
| 11/15/2021 | Genesis Research | NJ-based HEOR and Real-World Evidence research | GHO Capital Private Equity | 275.0 | - | - |
| 11/17/2021 | BioAgilytix [PE-backed by Cobepa and GHO capital] | CRO; assay dev, validation, sample analysis, QC testing, dx testing | Cinven Private Equity | 2,500.0 | - | 30.0x |
| 12/22/2021 | Abveris (Previously known as AbX Biologics, Inc.) | In vivo antibody discovery services | Twist Bioscience Corporation (Nasdaq: TWST) | 150.0 | - | - |
| 12/23/2021 | Personal Genome Diagnostics | Liquid biopsy and tissue-based genomic products and services | LabCorp (NYSE: LH) | 450.0 | 20.45x | - |
| 12/23/2021 | Ortho Clinical Diagnostics Holdings plc (NASDAQ: OCDX) | IVD dx company for acute care and STAT labs, and immunohematology | Quidel Corporation (NASDAQ: QDEL) | 6,000.0 | 2.94x | 14.4x |
| MEDICAL DEVICES | | | | | | |
| 1/21/2021 | Preventice Solutions | Mobile cardiac health solutions and services | Boston Scientific (NYSE:BSX) | 925.0 | 5.85x | - |
| 2/24/2021 | Simplify Medical | Developer of technology focused on cervical spinal disc arthroplasty | NuVasive (Nasdaq: NUVA) | 150.0 | - | - |
| 3/12/2021 | Cordis Corporation | Interventional medical devices for multiple diseases | Hellman & Friedman Private Equity | 1,000.0 | - | - |
| 4/26/2021 | MedShape, Inc. | Developer of technology that fixes soft tissue issues | Colfax Corporation (NYSE: CFX) | 125.0 | - | - |
| 5/10/2021 | Soliton, Inc. (Nasdaq: SOLY) | Rapid acoustic pulse device | Allergan plc | 421.4 | - | - |
| 7/29/2021 | Misonix, Inc. | Developer of minimally invasive surgical ultrasonic med dev | Bioventus Inc. (Nasdaq: BVS) | 518.0 | 6.50x | - |
| 8/6/2021 | Intersect ENT, Inc. (NasdaqGM: XENT) | Maker of ear, nose, and throat medical technologies | Medtronic plc (NYSE:MDT) | 1,100.0 | 13.60x | - |
| 9/1/2021 | Surgical biz of Lumenis Ltd. [PE-backed by Baring PE Asia] | Develops and commercializes energy-based medical solutions | Boston Scientific (NYSE:BSX) | 1,070.0 | 5.40x | - |
| 9/21/2021 | Devoro Medical, Inc. | Maker of medical device to restore blood flow | Boston Scientific (NYSE:BSX) | 320.0 | - | - |

| DATE ANNOUNCED | TARGET | DESCRIPTION | ACQUIRER | ENTERPRISE VALUE ("EV") (\$M) | EV / LTM REVENUE | EV / LTM EBITDA |
|--|---|--|---|-------------------------------|------------------|-----------------|
| 10/6/2021 | Baylis Medical Company Inc. | Cardiological, pain management, and radiology | Boston Scientific (NYSE: BSX) | 1,750.0 | 8.75x | - |
| 12/13/2021 | OrthogenRx, Inc. | Develops Class III generic orthopedic medical devices for osteoarthritis | Avent, Inc. subsidiary of Avanos Medical (NYSE: AVNS) | 130.0 | - | - |
| MEDICAL INSTRUMENTS AND SUPPLIES | | | | | | |
| 1/4/2021 | Straight Smile LLC ("Byte") | D2C, doctor-directed clear aligner/straighter teeth kits | Dentsply Sirona Inc. (Nasdaq: XRAY) | 1,040.0 | - | - |
| 1/19/2021 | Bardy Diagnostics | Developer of cardiac monitoring devices | Hill-Rom, Inc. | 375.0 | 12.50x | - |
| 1/20/2021 | Cardiva Medical, Inc. | Developer of vascular closure devices for multiple diseases | Haemonetics (NYSE:HAE) | 475.0 | - | - |
| 2/22/2021 | Biotheranostics, Inc. | Med tech; molecular tests for breast and metastatic cancers | Hologic, Inc. (Nasdaq: HOLX) | 230.0 | 6.96x | - |
| 3/1/2021 | Diagenode, Inc. | Epigenetics research, biological sample prep, and Dx assays | Hologic, Inc. (Nasdaq: HOLX) | 159.0 | 5.30x | - |
| 3/19/2021 | Northfield Medical | Maintenance and repairment for med and precision equip | Agiliti, Inc. (NYSE: AGTI) | 475.0 | - | - |
| 3/22/2021 | 7D Surgical, Inc. | Machine-vision Image Guided Surgery (MIGS) system for spine | SeaSpine Holdings (Nasdaq: SPNE) | 110.0 | - | - |
| 3/24/2021 | Mayfair Technology | Manufacturer of processing equipment for pharma | Mettler-Toledo LLC (NYSE: MTD) | 185.0 | - | - |
| 5/19/2021 | Respiratory biz. of Teleflex Incorporated (NYSE:TFX) | Provider of medical technology that improves people's lives | Medline Industries | 286.0 | - | - |
| 6/4/2021 | All Assets of Propel Orthodontics LLC | Maker of orthodontic devices | DENTSPLY SIRONA Inc. (Nasdaq: XRAY) | 131.0 | - | - |
| 6/5/2021 | Medline Industries Inc. | Medical and healthcare supplies manufacturing and distribution | Blackstone, Carlyle, and Hellman & Friedman | 34,000.0 | 1.94x | - |
| 6/23/2021 | Paramit Corporation | Maker of medical devices and life science instruments | Tecan Group Ltd. (SWX:TECN) | 1,000.0 | - | - |
| 6/24/2021 | Farapulse, Inc. | Developer of catheter-based tools used to treat anatomies | Boston Scientific Corporation (NYSE: BSX) | 295.0 | - | - |
| 7/19/2021 | ATI Industrial Automation | Developer of robotic accessories and arm tooling | Novanta, Inc. (Nasdaq: NOV) | 172.0 | - | - |
| 9/2/2021 | Hill-Rom Holdings, Inc. (NYSE:HRC) | Medical technology, beds, mobility, and non-invasive therapy products | Baxter International Inc. (NYSE:BAX) | 12,400.0 | 4.27x | 19.2x |
| 9/7/2021 | Masterflex bioprocessing biz of Antylia[PE:GTCR, Golden Gate] | Peristaltic pumps and aseptic single-use fluid transfer technology | Avantor, Inc. (NYSE: AVTR) | 2,700.0 | 9.00x | - |
| 9/8/2021 | Smith Medical biz of Smiths Group | Syringe and ambulatory infusion, vascular, and vital care products | ICU Medical, Inc. (Nasdaq: ICU) | 2,350.0 | - | - |
| 9/13/2021 | Farrar Scientific | Ultra-low temperature process and storage for biopharma | Trane Technologies (NYSE: TT) | 250.0 | - | - |
| 9/16/2021 | Avitide, Inc. | Maker of molecule-specific affinity purification solutions for biopharma | Repligen Corporation (Nasdaq: RGEN) | 150.0 | 15.00x | - |
| 9/23/2021 | BK Medical Holding Company | Intraoperative imaging and surgical navigation, advanced ultrasound tech | GE Healthcare, Inc. (NYSE: GE) | 1,450.0 | - | - |
| 10/14/2021 | Bolder Surgical, LLC | Maker of precision medical instruments | Hologic, Inc. (Nasdaq: HOLX) | 160.0 | 16.00x | - |
| 11/10/2021 | Generate Life Sciences | Provider of donor egg and sperm, cryopreservation, stem cell storage | CooperSurgical, Inc. | 1,600.0 | 6.40x | - |
| DRUG MANUFACTURING – GENERAL | | | | | | |
| 2/1/2021 | Viela Bio | Treatments for inflammation and autoimmune diseases | Horizon Therapeutics (Nasdaq: HZNP) | 3,050.0 | - | - |
| 2/26/2021 | Silicon Therapeutics | Data/statistics-based provider of drug discovery services | Roivant Sciences, Inc. (Nasdaq: ROIV) | 450.0 | - | - |
| 3/1/2021 | BPL Plasma Inc. | Developer of plasma-based technologies | Grifols, S.A. (Nasdaq: GRFS) | 370.0 | - | - |
| 3/30/2021 | Alydia Health | Developer of technology to prevent maternal morbidity | Organon (Nasdaq: OGN) | 215.0 | - | - |
| 8/5/2021 | Vividion Therapeutics, Inc. | Small molecules therapeutics for oncology and immunology | Bayer AG | 1,500.0 | - | - |
| 11/11/2021 | Abfero Pharmaceuticals, Inc. | Developer of iron as a therapeutic target | Pharmacosmos A/S | 225.0 | - | - |
| DRUG MANUFACTURING – SPECIALITY AND GENERIC | | | | | | |
| 3/1/2021 | Generic RX Pharmaceuticals | Manufacturer of generic drugs | Altaris Capital Private Equity | 1,550.0 | - | - |
| 3/9/2021 | Novitium Pharma LLC | Developer of niche generic products | ANI Pharmaceuticals, Inc. (Nasdaq: ANIP) | 163.5 | - | - |
| 5/27/2021 | Akorn's Consumer Health Biz | Manufacturers of specialty drugs for humans and animals | Prestige consumer Healthcare, Inc. | 230.0 | - | - |
| 6/16/2021 | Kindred Biosciences | Developer of therapies for pets | Elanco Animal Health (NYSE: ELAN) | 440.0 | 4.40x | - |
| 10/11/2021 | Flexion Therapeutics, Inc. (Nasdaq: FLXN) | Therapies for musculoskeletal conditions, osteoarthritis (OA) | Pacira BioSciences, Inc. (Nasdaq: PCRX) | 630.0 | - | - |
| 10/11/2021 | Adamas Pharma (Nasdaq: ADMS) | Maker of medicine for chronic neurologic disorders | Supernus Pharma (Nasdaq: SUPN) | 450.0 | - | - |
| 11/29/2021 | kaleo, Inc. | Drug and device dev. and human factors engineering (HFE) services | Marathon Asset Management Private Equity | 310.0 | - | - |

| DATE ANNOUNCED | TARGET | DESCRIPTION | ACQUIRER | ENTERPRISE VALUE ("EV") (\$M) | EV / LTM REVENUE | EV / LTM EBITDA |
|--|--|---|---|-------------------------------|------------------|-----------------|
| 12/2/2021 | OMIDIRA franchise of Omeros Corporation (Nasdaq: OMER) | FDA app. solution for cataract surgery or intraocular lens replacement | Rayner Surgical, UK-based maker of optical instruments | 125.0 | - | - |
| 12/29/2021 | Hydrofera | Advanced wound care products to shorten healing times, lower costs | Essity AB (OTCMKTS: ETTYF) | 116.0 | 4.93x | 25.2x |
| HEALTHCARE INFORMATION SERVICES | | | | | | |
| 1/6/2021 | Change Healthcare (Nasdaq: CHNG) | Software/analytics, network solutions, and tech-enabled serv | Optum / UnitedHealth (NYSE:UNH) | 13,000.0 | 4.00x | 16.3x |
| 1/14/2021 | Innovation Specialists (dba 2nd.MD) | Texas-based telehealth company for medical opinion and medical decision | Accolade, Inc. (Nasdaq: ACCD) | 360.00 | 10.28x | - |
| 1/16/2021 | Capsule Technologies [PE-backed: Francisco Partners] | Provider of streaming data from any medical devices | Koninklijke Philips N.V. / Royal Philips | 635.0 | - | - |
| 4/23/2021 | PlushCare, Inc. | Telemedicine provider using a virtual primary care application | Accolade, Inc. (Nasdaq: ACCD) | 435.0 | - | - |
| 5/4/2021 | Liberty IT Solutions LLC | Tech solutions for healthcare, defense, and government | Booz Allen Hamilton Inc. (NYSE: BAH) | 725.0 | - | - |
| 6/9/2021 | Ciox Health LLC | Provider of health information management services | Datavant, Inc. | 7,000.0 | - | - |
| 7/26/2021 | FDS Amlicare | Decision-automation platform for pharmacies and healthcare | Omnicell, Inc. (Nasdaq: OMCL) | 177.0 | 6.10x | - |
| 8/19/2021 | Inovalon Holdings, Inc. (Nasdaq: INOV) | Cloud-based platforms for data-driven healthcare systems | Insight Venture; Nordic Capital; 22C Capital | 7,300 | 10.90x | 31.6x |
| 9/1/2021 | Iora Health | Human-centered and tech-powered primary care group | 1Life Healthcare, Inc. (Nasdaq: ONEM) | 2,100.0 | - | - |
| 9/7/2021 | Ciitizen | Provider of digital medical records; genomic and clinical information | Invitae (NYSE: NVTA) | 325.0 | - | - |
| 9/27/2021 | Zebra Medical Vision | Deep-learning medical imaging analytics company | Nanox (Nasdaq: NNOX) | 100.0 | - | - |
| 12/2/2021 | ReCept Holdings, Inc. | Specialty pharmacy management services for health systems, clinics | Omnicell, Inc. (Nasdaq: OMCL) | 100.0 | 4.16x | - |
| 12/3/2021 | Provation Software, Inc. [PE-backed Clearlake Capital] | Software and SaaS-based clinical productivity, workflow automation | Fortive Corporation (NYSE: FTV) | 1,425.0 | 12.95x | - |
| 12/20/2021 | Cerner Corporation (Nasdaq: CERN) | Health care information technology solutions and tech-enabled services | Oracle Corporation (NYSE: ORCL) | 28,300.0 | 4.96x | 17.5x |
| 12/22/2021 | Carestream Dental's Intra-Oral Scanner (IOS) business | Scanning tech. business, dental cloud, and technology solutions | Envista Holdings Corporation (NYSE: NVST) | 600.0 | 10.0x | - |
| 12/22/2021 | athenahealth, Inc. [PE-backed Veritas and Evergreen Coast] | Cloud-based medical record, revenue cycle, patient engagement services | Hellman & Friedman; GIC; Abu Dhabi Inv. Auth.; Bain Capital | 17,000.0 | - | - |
| HEALTHCARE FACILITIES | | | | | | |
| 1/4/2021 | Magellan Health, Inc. (NASDAQ: MGLN) | Behavioral healthcare-focused managed care unit and PBM | Centene Corporation (NYSE: CNC) | 2,200.0 | 0.48x | 16.8x |
| 2/8/2021 | CRH Medical Corporation | Provider of anesthesia services to the GI community | WELL Health (TSX:WELL) | 369.2 | - | - |
| 5/13/2021 | Redmond Park Hospital, LLC | Operates a hospital for in/outpatient programs | AdventHealth, FL-based non-profit healthcare system | 635.0 | - | - |
| 6/15/2021 | Springstone, Inc. | Hospitals for mental illness and substance abuse | Medical Properties Trust, Inc. | 950.0 | - | - |
| 6/16/2021 | 5 hospitals of Tenet Healthcare Corp | Hospitals | Steward Health Care System LLC | 1,100.0 | - | - |
| 6/30/2021 | Contessa Health | Hospital-at-home and skilled nursing facility (SNF) at-home services | Amedisys, Inc. (NASDAQ: AMED) | 250.00 | 3.90x | - |
| 7/26/2021 | CareFinders Total Care LLC | NJ-based home care; non-emergency medical transportation (NEMT) space | ModivCare Inc. (NYSE: MODV) | 340.0 | 1.68x | - |
| 8/3/2021 | VRI Intermediate Holdings, LLC | Ohio-based remote patient monitoring ("RPM") solutions | ModivCare (Nasdaq: MODV) | 315.0 | 5.62x | 15.0x |
| 11/15/2021 | Dunn & Berger, Inc. d/b/a Accredited Nursing Services | CA-based nursing and home health services | Aveanna Healthcare Holdings, Inc. (NASDAQ: AVAH) | 180.00 | 1.57x | - |
| 11/30/2021 | A portfolio of medical offices in the US | Leased to Cleveland Clinic, Texas A&M Health, Novant Health, and others | GFH Financial Group BSC (KWSE:GFH) in Middle East | 200.0 | - | - |
| 12/8/2021 | Cancer Treatment Centers of America, Inc. | Cancer Care Hospitals | City Of Hope, CA-based not-for-profit cancer research org. | 390.0 | - | - |
| MEDICAL DISTRIBUTION | | | | | | |
| 1/6/2021 | Alliance Healthcare Biz. of Walgreens Boots | Healthcare and pharmaceutical services | AmerisourceBergen Corporation (NYSE: ABC) | 6,500.0 | 0.34x | 12.0x |

EV - Enterprise Value

LTM - Last Twelve Months

EBITDA - Earnings Before Interest, Taxes, Depreciation and Amortization

Source: Company's press releases, Capital IQ, and other publicly available data

Note: We used data from prior years when LTM was not available

Notable Healthcare and Life Sciences M&A in Europe and Middle East

European dealmaking has experienced its best year since 2007 and it will continue to grow in 2022. As per a Bloomberg report, the UK is western Europe's M&A hotbed, accounting for approximately one-third of all the deals in 2021. Suppressed valuation due to the impact of Brexit on the supply chain has attracted buyers. PE groups hold over \$900 billion in dry powder for potential deals and are raising funds. In addition to cheap UK stocks, cash-rich balance sheets of corporates and low-interest rates still support the extension of a new M&A wave in 2022.

This table lists transactions worth more than \$100 million in deal value as of December 31, 2021.

| DATE ANNOUNCED | TARGET | DESCRIPTION | ACQUIRER | ENTERPRISE VALUE ("EV") (\$M) | EV / LTM REVENUE | EV / LTM EBITDA |
|----------------|---|---|---|-------------------------------|------------------|-----------------|
| 1/5/2021 | Hindawi Limited | London-based open access (OA) and scientific research publisher | John Wiley & Sons, Inc. (NYSE:JWA) (NYSE:JWB) | 298.0 | 7.45x | - |
| 1/7/2021 | Oxford Immunotec Global PLC (NASDAQ: OXFD) | UK-based developer of test kits for latent tuberculosis | PerkinElmer (UK) Holdings Limited | 430.0 | 5.0x | - |
| 1/11/2021 | Kymab Limited | UK-based developer of mAb focus on immuno-oncology therapeutics | Sanofi Foreign Participations B.V. | 1,100.0 | - | - |
| 1/14/2021 | Arvelle Therapeutics GmbH | Swiss-based pharma for treatments for CNS AND mental health disorders | Angelini Pharma | 610.0 | - | - |
| 1/15/2021 | Henogen S.A. (CMO business of Novasep) | Viral vector, gene therapy CDMO | Thermo Fisher Scientific Inc. | 879.7 | 9.06x | - |
| 2/3/2021 | GW Pharmaceuticals plc (Nasdaq: GWPH) | Dublin-based developer of cannabinoid products for diseases | Jazz Pharmaceuticals plc (Nasdaq: JAZZ) | 6,700.0 | 10.60x | - |
| 4/8/2021 | Mobidiag Oy | Finnish-French developer of PCR tests for GI, respiratory, other infections | Hologic, Inc. (Nasdaq: HOLX) | 795.0 | 18.90x | - |
| 4/12/2021 | Ritter GmbH | Germany-based manufacturer of robotic and liq. handling consumables | Avantor, Inc. (NYSE:AVTR) | 1,050.0 | - | - |
| 5/12/2021 | UDG Healthcare plc | Healthcare advisory, communications, clinical, and packaging services | Clayton, Dubilier & Rice, LLC Private Equity | 3,900.0 | - | 17.2x |
| 5/17/2021 | Immunodiagnostic Systems Holdings PLC | UK-based developer of immunoassays and automated immunoanalyzer tech | PerkinElmer (UK) Holdings Limited | 124.0 | - | - |
| 6/1/2021 | HaliDX | France-based immuno-oncology diagnostics company | Veracyte, Inc. | 317.0 | - | - |
| 6/11/2021 | Elos Medtech AB (NASDAQ STOCKHOLM: ELOS B) | Sweden-based medical device CDMO | TA Associates Private Equity | 210.9 | - | - |
| 6/18/2021 | Inivata Ltd. | UK-based developer of liquid biopsy technology platform | NeoGenomics, Inc. (NASDAQ: NEO) | 390.0 | - | - |
| 7/1/2021 | Fertin Pharma A/S | Denmark-based CDMO for oral and intra-oral delivery technologies | Philip Morris International (PMI) | 820.0 | 5.10x | - |
| 7/2/2021 | Cellgenix GmbH | Germany-based producer of raw materials for cell and gene therapy | Sartorius Stedim Biotech GmbH | 118.0 | 5.00x | - |
| 8/14/2021 | Vectura Group plc | UK-based; inhaled medications for COPD, asthma, and other illnesses | Philip Morris International | 1,400.0 | - | 18.4x |
| 9/8/2021 | Strongbridge Biopharma plc (Nasdaq: SBBP) | UK-US developer of therapies for endocrinology and rare diseases | Xeris Pharmaceuticals, Inc. (Nasdaq: XERS) | 267.0 | - | - |
| 9/8/2021 | HRA Pharma, SA | UK-based OTC provider of consumer self-care and women's health | Perrigo Company plc (NYSE: PRGO) | 2,100.0 | - | - |
| 9/17/2021 | Biotest Aktiengesellschaft (XTRA: BIO3) | Germany-based developer of hematology and clin. immunology sol | Grifols, S.A. (BME:GRF) | 2,355.7 | 4.10x | 18.5x |
| 10/4/2021 | Cassiopea S.p.A. (SWX:SKIN) | Italy-based clinical stage sp. pharma for medical dermatology products | Cosmo Pharmaceuticals N.V. (SWX:COPN) | 403.1 | - | - |
| 11/22/2021 | Sanifit Therapeutics S.A. | Spain-based clinical-stage biopharma for vascular calcification disorders | Vifor Pharma AG (SWX:VIFN) | € 205.0 | - | - |
| 11/22/2021 | Sylphar International N.V. (PE-backed Vendis Capital) | Belgium-based OTC manufacturer | Karo Pharma AB (OM: KARO) | € 290.0 | 4.53x | - |
| 11/25/2021 | NewCo Pharma GmbH | Germany-based developer of compounded drugs for oncology | Medios AG (XTRA:ILM1) | € 125.0 | 0.81x | 9.5x |
| 12/08/2021 | Clinigen Group plc (AIM:CLIN) | UK-based pharmaceutical and services company | Triton Private Equity | £ 1,200.0 | 2.62x | - |
| 12/13/2021 | Elysium Healthcare Limited (PE-backed BC Partners) | UK-based chain of hospitals for mental health and wellbeing | Ramsay Health Care Limited (ASX:RHC) | £ 775.0 | 2.23x | - |
| 12/14/2021 | Vifor Pharma AG (SWX:VIFN) | Swiss pharma focused on treatment of iron deficiency and renal disease | CSL Limited (ASX:CSL) | A\$ 16,400.0 | - | - |
| 12/17/2021 | Health Business of Johnson Matthey Plc | UK-based asset, manufacturers specialist and complex APIs | Altaris Capital Private Equity | £ 325.0 | - | - |
| 12/22/2021 | Gyroscope Therapeutics Holdings plc | UK-based clinical stage ocular gene therapy company | Novartis AG (SWX:NOVN) | 800.0 | - | - |
| 12/22/2021 | MBA Incorporado S.L. (PE-backed Alantra Private Equity) | Spain-based distributor of diverse medical and surgical products | AddLife AB (OM:ALIF B) | € 111.0 | 1.65x | 9.7x |
| 12/24/2021 | E45 from Reckitt Benckiser | Skincare brand of Reckitt UK | Karo Pharma AB | £ 200.00 | 4.65x | - |

Notable Healthcare and Life Sciences M&A in Asia-Pacific

Compared to the USA and Europe, China and Japan have recovered faster from Covid. Mergermarket data shows that overall M&A reached record levels in 2021 in APAC, with deal value exceeding \$1.2 trillion. Despite this, Life sciences and healthcare are lagging Industrials & Chemicals (I&C) and Technology, Media & Telecommunications (TMT) sectors. Deal volumes in India were at an all-time high, with first-time buyers driving the trend. Also, M&A deals in healthcare and diagnostics services were concentrated within the local players, but there was a strong cross-border investment, particularly in contract pharma services. We did not include China and HK deals for this report. It appears that China will no longer be the dominant force behind cross-border deals in the coming years, which could stimulate activity in other areas, such as India, Japan, and Southeast Asia.

| DATE ANNOUNCED | TARGET | DESCRIPTION | ACQUIRER / INVESTOR | ENTERPRISE VALUE ("EV") (MILLION) | EV / LTM REVENUE | EV / LTM EBITDA |
|----------------|---|---|---|-----------------------------------|------------------|-----------------|
| 1/29/2021 | Japan Tissue Engineering Co., Ltd. (JASDAQ:7774) | Japan-based regenerative medicine unit of Fujifilm Japan | Teijin Limited (TSE:3401) | ¥ 21,600 | 8.80x | - |
| 3/31/2021 | Hemmo Pharmaceuticals Pvt Ltd | India-based peptide manufacturer | CDMO division of Piramal Pharma Ltd | ₹ 7,750.0 | 9.12x | - |
| 3/31/2021 | Amoun Pharmaceutical Company S.A.E. | Egypt-based pharmaceutical and animal health products of Bausch | Abu Dhabi Developmental Holding Company PJSC (ADQ) | Dh. 17,300 | 3.04x | - |
| 3/31/2021 | GlaxoSmithKline Pharm's mfg. facility in Karnataka, India | Manufacturer of Zinetac, a heartburn medicine sold as Ranitidine | Hetero Labs | ₹ 1,800.0 | - | - |
| 4/8/2021 | Leixir Dental Group | India/US-based full-service, dental lab services and digital dentistry provider | Comvest Partners Private Equity (US) | ₹ 11,000.0 | - | - |
| 5/12/2021 | Animal health business OF Zydus Cadila | India-based therapeutic and nutritional products for animals | Multiples Alternate Asset Management Private Equity | ₹ 29,210.0 | - | - |
| 5/16/2021 | HyTest Ltd., portfolio of Summa Equity | Finland-based manufacturer of mAB and antigens for the dx industry | Shenzhen Mindray Bio-Medical Electronics Co., Ltd. | € 545.0 | - | - |
| 5/19/2021 | Vardhman Health Specialties | India-based distribution of specialty pharmaceutical products | Akna Medical Pvt Ltd (Aknamed) | ₹ 2,550.0 | - | - |
| 5/19/2021 | Aragen Life Sciences | India-based biologics and small molecule CDMO | Goldman Sachs Private Equity | ₹ 73,000.0 | 7.68x | 26.5x |
| 6/3/2021 | Vikram Hospital | India-based 200-bed tertiary care facility | Manipal Hospitals | ₹ 3,500.0 | - | - |
| 6/25/2021 | Thyrocare Technologies Ltd. (NSE: THYROCARE) | Diagnostic testing services to patients, laboratories, and hospitals | PharmEasy's subsidiary Docon Technologies | ₹ 45,460.0 | - | - |
| 7/22/2021 | Acme Formulation Pvt. Ltd. | India-based CDMO for sterile inject., hormones, and other oral solids | PAG Private Equity | ₹ 10,540.0 | - | - |
| 7/28/2021 | Sanofi India's nutraceuticals business | Portfolio of sixteen nutraceutical brands | Universal Nutriscience Pvt. Ltd. | ₹ 5,870.0 | - | - |
| 8/6/2021 | Endo pharma's mfg. facility and a portfolio ANDAs | New York-based semi-solids, liquids, nasal sprays along with oral solids | Strides Pharma Science Ltd. | ₹ 1770.0 | - | - |
| 8/6/2021 | Navitas Life Sciences from TAKE Solutions | US-HQ CRO and FSP in data sciences and reg. and safety solutions | HIG Capital Private Equity | ₹10,213.4 | - | - |
| 8/13/2021 | Cronus Pharma Specialties India Pvt. Ltd. | India/US-based generic veterinary pharma | Aurobindo Pharma Ltd. | ₹ 8,235.2 | 72.20x | - |
| 8/10/2021 | Zebra Medical Vision | Israel-based AI and deep-learning medical imaging analytics company | Nano-X Imaging Ltd. (NasdaqGM: NNOX) | \$ 110.0 | - | - |
| 9/4/2021 | Strand Life Sciences Pvt. Ltd. | India-based provider of genomic testing with bioinformatics | Reliance Strategic Business Ventures (RSBVL) | ₹ 6,890.0 | 7.80x | - |
| 9/13/2021 | Itamar Medical Ltd. (Nasdaq and TASE: ITMR) | Israel-based non-invasive med dev for the respiratory sleep disorders | ZOLL Medical / Asahi Kasei | \$ 538.0 | 8.60x | - |
| 9/14/2021 | Akna Medical Pvt Ltd (Aknamed) | India-based healthcare supply chain startup | PharmEasy | ₹ 10,000 | - | - |
| 10/26/2021 | Suburban Diagnostics | India-based Operator of diagnostics and testing centers | Dr. Lal PathLabs Limited | ₹ 9,250.0 | 3.14x | 16.1x |
| 11/22/2021 | Suchirayu Healthcare Solutions | India-based oncology-focused private hospital group | HealthCare Global Enterprises Limited (HCG) | ₹ 540.0 | 9.75x | - |
| 11/30/2021 | Synergia Life Sciences Pte. Ltd. | India-based producer of spore probiotics and K2-7 vitamin | Novozymes | DKK 1,000.0 | - | - |
| 11/30/2021 | ARTham Therapeutics Inc | Japan-based clinical stage biopharmaceutical company | Kaken Pharmaceutical Co., Ltd. (TSE:4521) | ¥ 5,500.0 | - | - |
| 12/02/2021 | Australian Pharmaceutical Industries Limited (ASX:API) | Wholesale/retail distribution of pharma and beauty products | Woolworths Group Limited (ASX:WOW) | A\$ 872.0 | 0.28x | 8.4x |
| 12/14/2021 | Virtus Health Limited (ASX:VRT) | Healthcare services including fertility, pathology, GI, and diagnostics servc. | BGH Capital Private Equity | A\$ 607.3 | 2.31x | 8.5x |
| 12/17/2021 | Agilex Biolabs Pty Ltd | Bioanalysis of small mol and biologics using LC-MS/MS and immunoassay | Healius Limited (ASX:HLS) | A\$ 301.3 | - | - |
| 12/17/2021 | Allity | Personal, respite, nursing, and dementia care services | RSL Care RDNS Limited | A\$ 700.0 | - | - |
| 12/17/2021 | Sunsho Pharmaceutical Co., Ltd. | Japan-based contract manufacturing services for pharma / food products | Towa Pharmaceutical Co., Ltd. (TSE:4553) | ¥ 47,700.0 | - | - |

SPAC TRANSACTIONS

A couple of years ago, before the pandemic hit us, Special Purpose Acquisition Company or “SPAC” deals again became a hot topic in the healthcare and life sciences industry. It is growing in popularity among the companies looking to go public because some of the features of a SPAC transaction are negotiable compared to the traditional IPO process. Even though it is not as easy as an IPO, it offers some benefits, such as a faster listing process.

SPACs should continue to grow in popularity in the future, mainly among therapeutic companies that want to gain access to public markets before even beginning clinical trials.

Here are some of the notable life sciences SPAC merger announcements in 2021.

| DATE ANNOUNCED | TARGET | DESCRIPTION | SPAC |
|----------------|-----------------------------|---|---|
| 2/4/2021 | 23AndMe | Consumer genetics and research | VG Acquisition Corp. |
| 2/8/2021 | Nautilus Biotechnology | Single molecule protein analysis | Arya Sciences Acquisition Corp. |
| 3/29/2021 | SomaLogic | AI-data driven proteomics platform | CM Life Sciences II, Inc. |
| 3/31/2021 | Procaps Group | Develops pharmaceutical and nutraceutical solutions, medicines, and hospital supplies | Union Acquisition Corp. II. |
| 4/7/2021 | Better Therapeutics, Inc. | Prescription digital therapeutics company delivering cognitive behavioral therapy | Mountain Crest Acquisition Corp. II. |
| 4/14/2021 | Tango Therapeutics | Biotechnology company discovering drug targets | BCTG Acquisition Corp. |
| 4/27/2021 | Clarus Therapeutics, Inc. | Advancing androgen and metabolic therapies | Blue Water Acquisition Corp. |
| 5/7/2021 | Science 37 | Decentralized clinical trials | LifeSci Acquisition II Corp. |
| 5/11/2021 | Ginkgo Bioworks | Cell programming | Soaring Eagle Acquisition Corp. |
| 6/9/2021 | Valo Health | Fully integrated end-to-end human-centric AI-driven drug discovery platform | Khosla Ventures Acquisition Co. |
| 6/22/2021 | Pear Therapeutics | Prescription digital therapeutics (PDT) | Thimble Point Acquisition Corp. |
| 6/30/2021 | Pardes Biosciences | Developing direct-acting oral antiviral drug | FS Development Corp. II. |
| 7/8/2021 | Hyperfine, Inc. and Liminal | Portable MRI and brain imaging and monitoring | HealthCor Catalio Acquisition Corp. |
| 7/16/2021 | HeartFlow | Non-invasive AI-based s/w tool for treatment of heart disease | Longview Acquisition Corp. II. |
| 7/20/2021 | Gelesis | Consumer-focused biotherapeutics for weight management | Capstar Special Purpose Acquisition Corp. |
| 8/6/2021 | EQRx | Pharma company for developing affordable drugs | CM Life Sciences III, Inc. |
| 8/10/2021 | GreenLight Biosciences | Biotech company for RNA-based products for human health, agriculture, and environment | Environmental Impact Acquisition Corp. |
| 8/27/2021 | Humacyte | Universally implantable bioengineered human tissue at commercial scale | Alpha Healthcare Acquisition Corp. |
| 8/30/2021 | Revelation Biosciences | Develops therapies for respiratory infections | Petra Acquisition |
| 9/29/2021 | Amicus Therapeutics | Develops medicines for rare diseases | ARYA Sciences Acquisition Corp. IV. |
| 11/8/2021 | Blade Therapeutics | Develops treatments for incurable fibrotic and neurodegenerative diseases | Biotech Acquisition Company |
| 12/20/2021 | Senti Biosciences, Inc. | Gene Circuit platform to program cell and gene therapies | Dynamics Special Purpose Corp. |



FUTURE OUTLOOK

M&A activity continues to gain momentum, and research shows that most dealmakers in the private and public markets will aim to meet or surpass their 2021 numbers in 2022. However, some are concerned about potential tax increases, loftier valuations, and raising the cost of capital. Top executives are also worried about the labor supply due to the hybrid work culture and rampant resignations across all the verticals. In addition, recent surveys from Datasite, a global software provider for managing financial transactions, show dealmakers are concerned about inflation and ESG issues.

Both PE funds and strategic players continue to make acquisitions in the mid-market. In 2021, PE-backed deals accounted for about one-third of all deals, and the trend will continue in 2022. During a challenging economic environment last year, traditional private equity funds provided companies with cash by investing across the capital structure. Also, for now, PE groups are less concerned about ESG issues due to their focus on mid-market investments and looking forward to a record-breaking year.

M&A will remain a top priority for biopharmaceutical companies to accelerate scientific progress and prepare for the upcoming expiration of patents. As a result, we expect to see significant investments in the new therapeutic technologies, such as cell and gene therapies, antibody-drug conjugates, and RNA and DNA therapies. Despite these efforts by leading biopharmaceutical companies to bring these technologies in-house, research indicates they are a minority among the current pipeline of drugs across all therapies.

The healthcare information technology / information services segment alone accounted for over 50% of total deal volume in 2021. The digital transformation trend of business operations is expected to continue as businesses have been focusing on it for quite some time, with the pandemic fueling the pace. As per an EY survey, more CEOs will prioritize investment in existing businesses, digital transformation, and sustainability. In 2022, we will see more companies investing in digital transformation, supply chain, cybersecurity, data, and artificial intelligence.



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