

Biopharma deals in review

A look back at an energetic H1 and what to expect next



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Science financing offers investors a relative safe harbor amid uncertainty

The biopharma sector has always been seen as a safe harbor in times of economic uncertainty — the need for medical innovations to improve human health persists equally through bull and bear markets. In the COVID-19 pandemic, capital has flowed into the industry not just because of its counter-cyclical nature but also in recognition of its role in developing vaccines and treatments that offer hope against the disease.

The result has been an extraordinary windfall of investment in the sector — one that only accelerated through the first half of 2021.

This surge of deal-making and financing activity has had a corresponding suppressant effect on mergers and acquisitions (M&As). Innovative smaller biopharmas awash in capital have little incentive to put out a “For Sale” sign, and amid the uncertainty, the sector’s bigger fish are more risk-averse, loathe to spend heavily on acquisitions until the healthcare landscape stabilizes.

While financing and deals around COVID-19 treatments and vaccines have likely peaked, investment in companies developing cell and gene treatments or diagnostics is booming. In addition, investors are getting in earlier, increasingly at the discovery and preclinical phase of development.

At midyear, the pace of financing and deal-making shows no sign of slowing, and that bodes well for future medical innovation.

“The capital markets have been very generous to biotechs, so there isn’t really a push for biotech companies to be acquired. It is more of a seller’s market at the moment, so acquisitions are at premium valuations. Jazz Pharmaceuticals acquired GW Pharmaceuticals for \$220 per American depositary share, a 50% premium to the share price the day before the announcement.”

Mike Ward, Global Head of Thought Leadership, Life Sciences and Healthcare, Clarivate

Our data and expertise

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We have combined our data and expertise to provide you with this analysis, including:

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Cortellis Deals Intelligence™, which combines the industry's largest source of deals intelligence with enhanced visualizations of the highest quality data, to quickly find the optimal deal without compromising due diligence. The Cortellis Deals Intelligence predictive analytics dashboard uses data science techniques, including a combination of automated machine learning and human intelligence, to accurately predict deal valuation and probability of success for partnered assets. Our proprietary, predictive analytics algorithm draws on more than 20 traits from across the entire body of Cortellis data, including 110,000+ life sciences deals, 36,000+ contracts (including unredacted versions) and 9,500+ unredacted contracts.

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First half of 2021 sets records for investments

Overall, the first half of 2021 is currently leading in the volume and value of financings and deals over every other year in the past decade. The amount of money being raised is impressive, and there is no sign of investment activity dropping off. Although none of the deals during H1 2021 met the \$3.9 billion threshold to rank within the biopharma top 20 list, there were 30 deals that reached at least \$1 billion.¹ This is nearly four times as many as H1 2016 (eight deals) and continues the incremental increase we've observed since then: 11 in 2017, 12 in 2018, 18 in 2019 and 27 in 2020.¹

The three top deals for the first half of 2021 were those between:

- Eisai Co. Ltd. and Bristol-Myers Squibb in June for \$3.1 billion to develop and commercialize MORAb-202 for advanced solid tumors,²
- NeurMedix and Biovie Inc. in June for \$3.0 billion for Biovie Inc. to acquire NE-3107 for neurodegenerative diseases and cancers,³ and
- Anima Biotech and Takeda Pharmaceutical Co. Ltd. in March for \$2.4 billion for Anima's mRNA translation modulator against neurological diseases.⁴

COVID-19 dominated the biopharma deals scene in 2020, during which large amounts of capital were raised to develop therapeutics and vaccines to address the pandemic. While that activity has slowed so far this year, oncology remained strong throughout 2020 and continues to dominate financings and deals. Of the 30 deals that reached at least \$1B in H1 2021, 20 specifically targeted oncology indications.¹

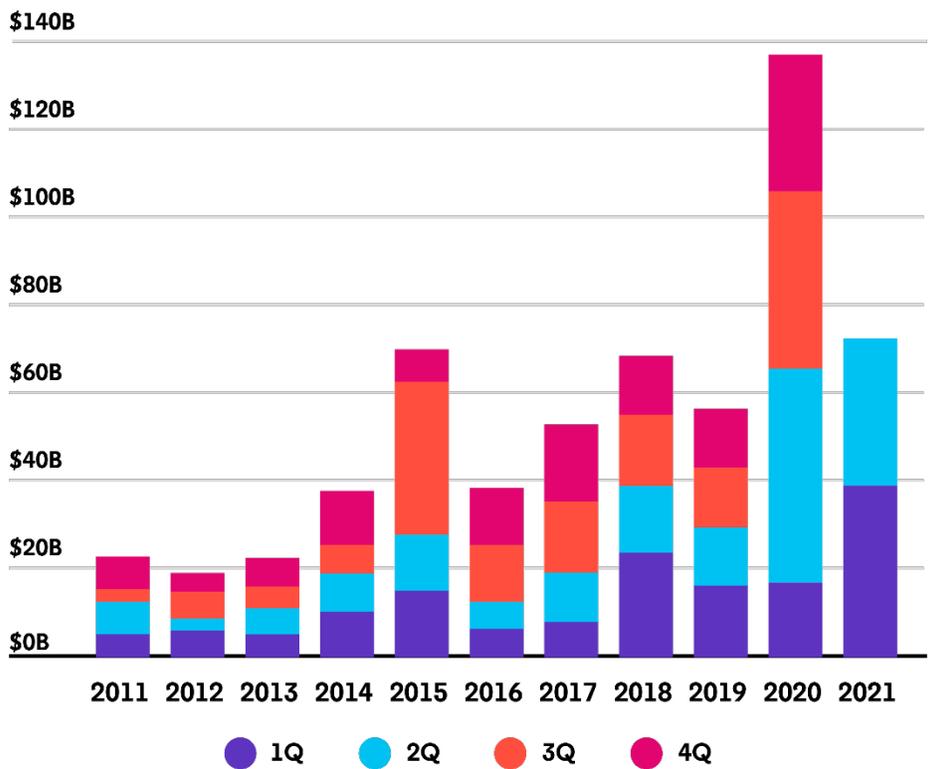
We detail the contributions of public financings, private financings and deals to the H1 2021 trends in the following sections, based on data sourced from BioWorld.^{1,5}

Overall, financings continue their upward trend

If financings follow the same track for the next two quarters, 2021 will likely surpass last year’s record of \$134.5 billion raised.

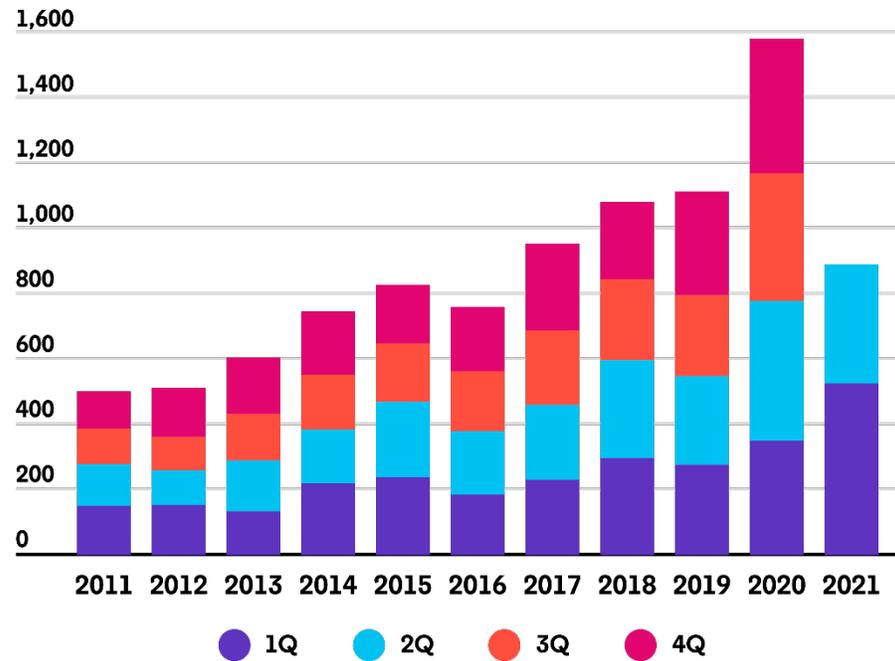
- Biopharma has raised nearly 10% more in the first half of 2021 (\$71 billion; Figure 1) than in the first half of 2020 (\$64.7 billion).
- The number of financings is also up by 15%, from 775 in the first half of 2020 to 892 so far this year (Figure 2).

Figure 1. Biopharma financings value by year



Source: BioWorld

Figure 2. Biopharma financings volume by year



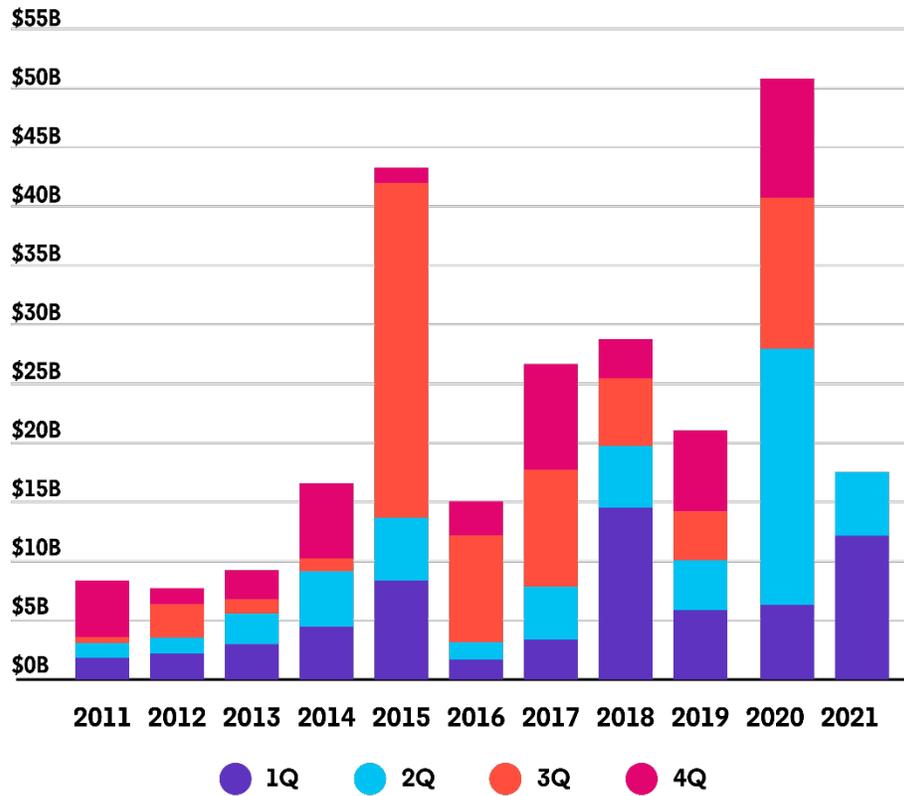
Source: BioWorld

For public financings, follow-on offerings have been slow, while IPOs continued to show strong activity

Follow-on offerings is the only area of financing that is significantly down from last year.

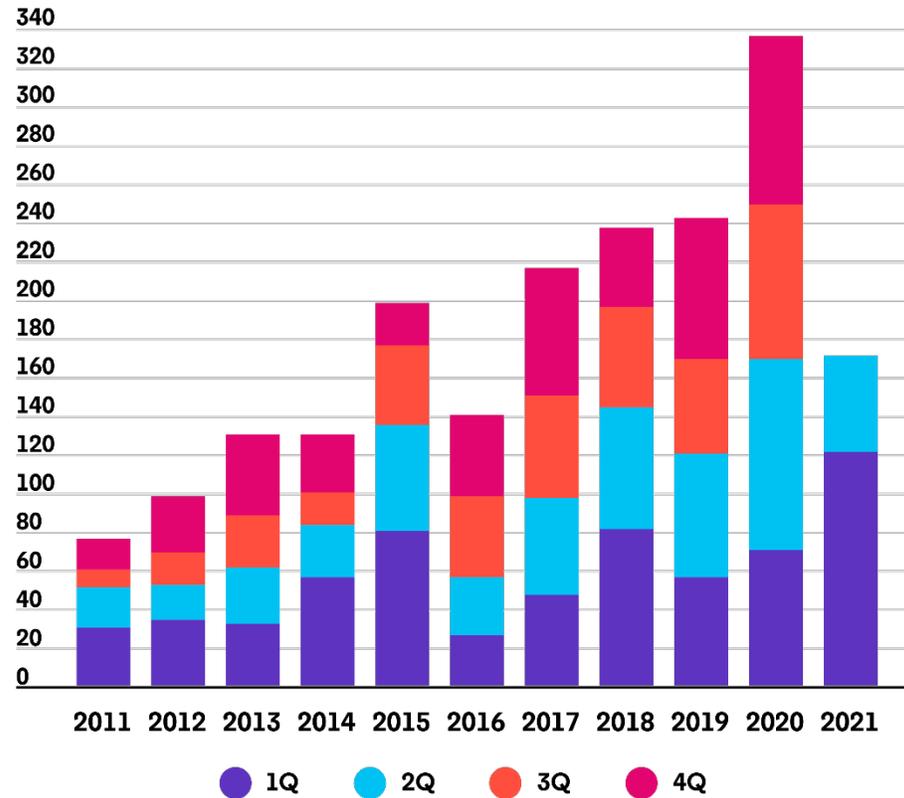
- The \$17.66 billion raised in H1 2021 is much lower than the \$28.2 billion in H1 2020 (Figure 3), despite a similar number of transactions (172 and 169, respectively; Figure 4).
- Q2 2021 had less than half the number of transactions as in Q1 2021, which raised \$11.7 billion, second only to the \$14.6 billion raised in Q1 2018.
- The largest transaction in Q2 was the \$690 million follow-on for Intellia Therapeutics Inc.

Figure 3. Follow-on offerings value by year



Source: BioWorld

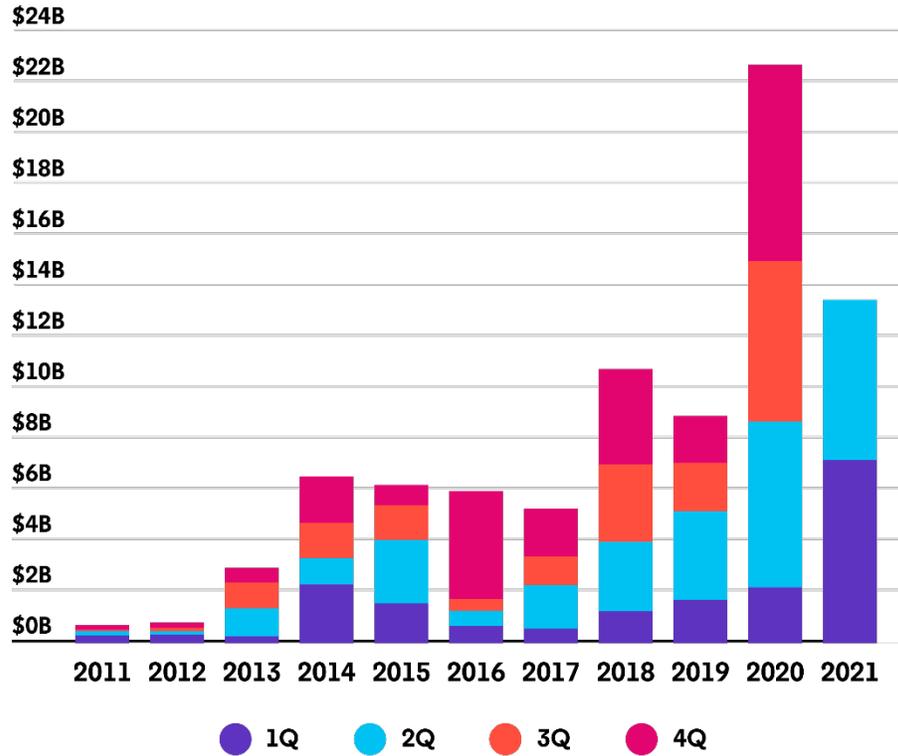
Figure 4. Follow-on offerings volume by year



Source: BioWorld

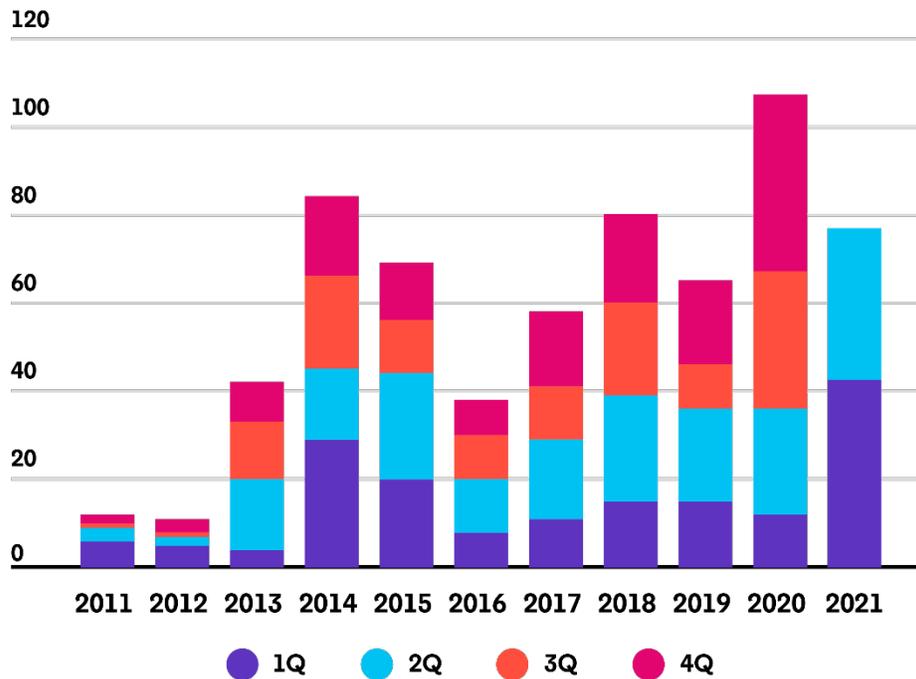
Initial public offerings (IPOs) accounted for a considerable part of the H1 activity. In H1 2021, 76 transactions raised \$13.4 billion, compared to the \$8.7 billion for 36 transactions in H1 2020 (Figures 5 and 6).

Figure 5. IPO value by year



Source: BioWorld

Figure 6. IPO volume by year



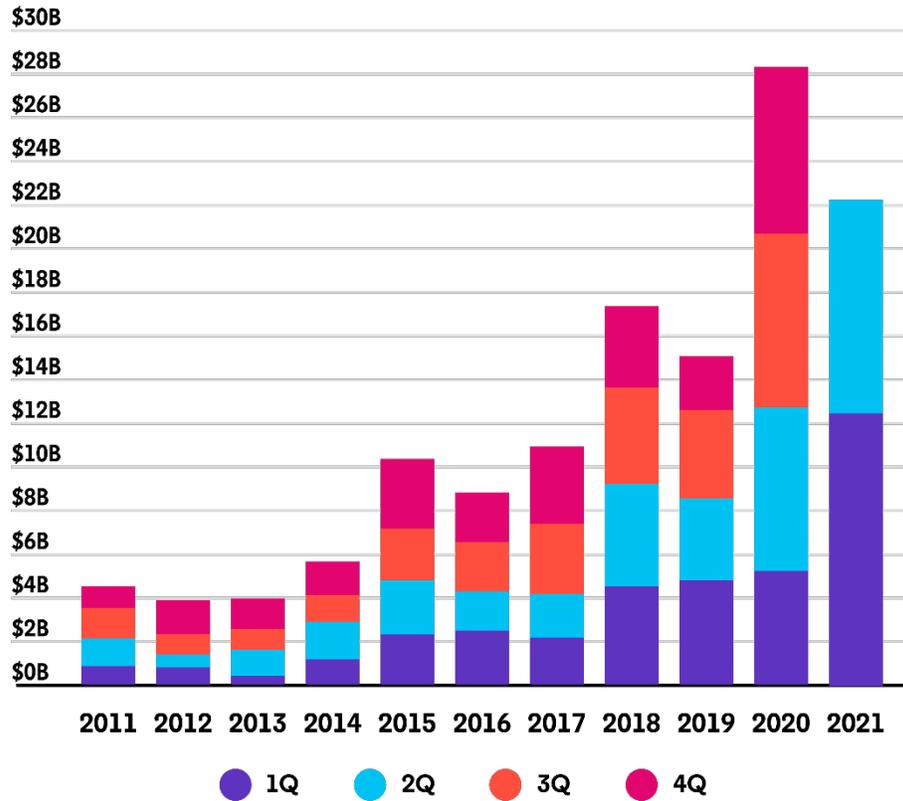
Source: BioWorld

Private financings broke records in the first half of 2021

Venture capital (VC) financings also contributed substantially to the H1 total.

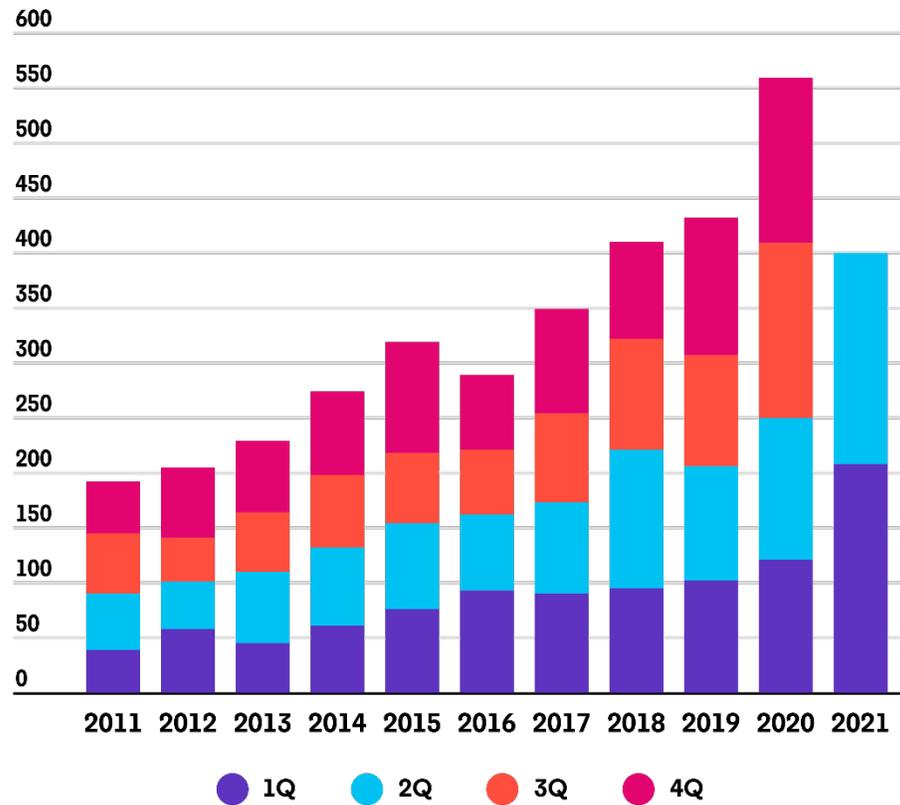
- A record \$22.1 billion was raised through a record volume of 400 transactions (Figures 7 and 8).
- This is nearly double the \$12.7 billion raised in the first half of 2020, through 250 transactions.

Figure 7. Private financings value by year



Source: BioWorld

Figure 8. Private financings volume by year



Source: BioWorld

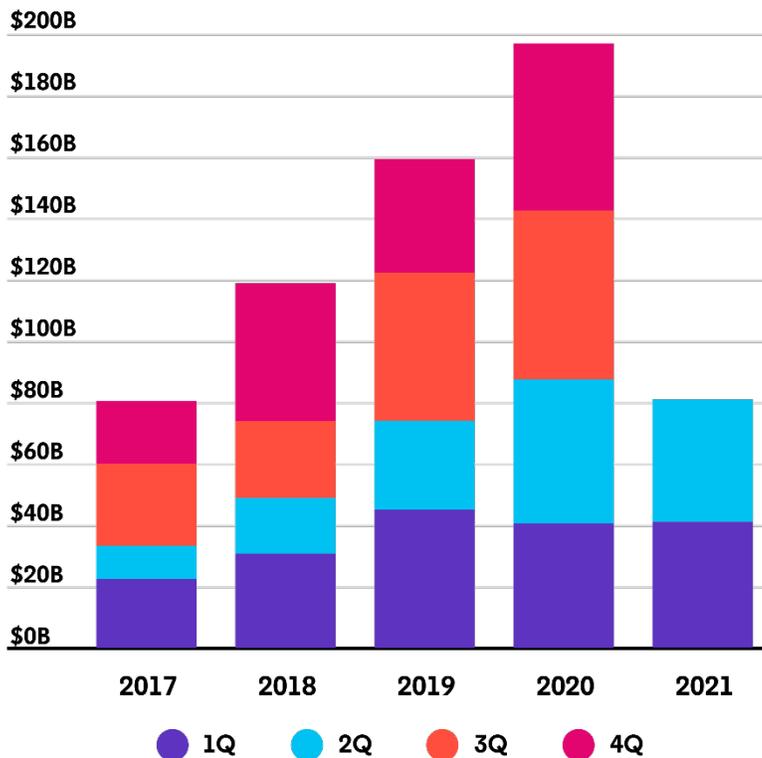
Global financing dominated by U.S.-based biotechs

A deep dive into the BioWorld data showed that biotech companies based in the United States raised the majority from private and venture sources — accounting for 67% of all monies raised worldwide. In the first half of 2021, Massachusetts-based companies accounted for 28.4% of all VC financing. Companies from Mainland China took a 14.2% share of the global total, nudging ahead of the San Francisco Bay area and San Diego clusters, with shares of 12.3% and 9.5%, respectively. Companies based in the United Kingdom had an 8.5% share of the global take, accounting for just over half the sums raised by European biotechs.

Records for deal volume and value were set in H1 2021

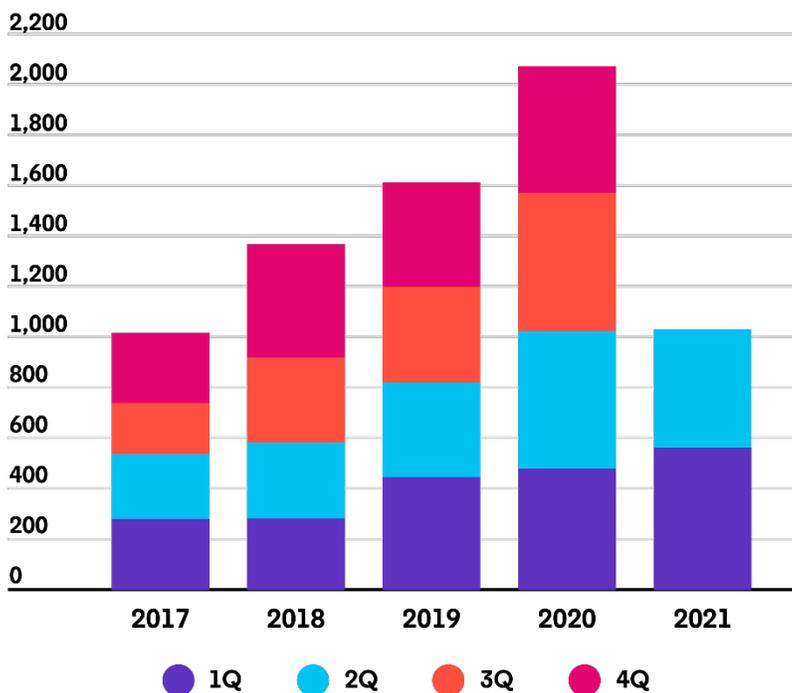
H1 2021 saw 1,027 deals valued at \$82.7 billion, slightly higher than H1 2020 and more than the volume and value (1,015 and \$81.0 billion, respectively) for the full year of 2017 (Figures 9 and 10).

Figure 9. Deal value by year



Source: BioWorld

Figure 10. Deal volume by year



Source: BioWorld

COVID-19-related deals are declining, while cell and gene therapies continue to dominate

In H1 2021, there were 125 deals related to COVID-19 therapeutics and vaccines.

- This represents about 12% of overall deals, down from nearly one-fifth of all deals during 2020.
- The 10 deals that disclosed their terms total approximately \$1.8 billion.
- The \$1.1 billion partnership signed in February between South Korea's Genexine, Inc. and Kalbe Genexine Biologics represented the bulk of that amount. The companies agreed to develop and commercialize GX-17 (efineptakin alfa) for both cancer and COVID-19 throughout the Middle East and Asia.
- In addition, there were 122 partnerships between industry and nonprofit or government entities, worth \$6.8 billion so far this year.
- The largest VC round of Q2 2021 brought \$336 million in series C funds to Adagio Therapeutics Inc., which is developing the monoclonal antibody ADG-20 for COVID-19.

Cell and gene therapies represent another hot deal-making area, with the first half of 2021 recording 105 deals valued at \$13.0 billion that represent about 16% of the overall total and include five of the largest deals so far this year:

- Shoreline Biosciences Inc. and Kite, a Gilead Company, for \$2.3 billion to develop allogeneic cell therapies for cancer,⁶
- Cancer partnership between Artiva Biotherapeutics Inc. and Merck KGaA for \$1.9 billion,⁷
- Ensoma and Takeda Pharmaceutical Co. Ltd. for rare diseases valued at \$1.3 billion,⁸
- Vertex Pharmaceuticals Inc. and Obsidian Therapeutics Inc. for \$1.3 billion to discover gene therapies using the Cytodrive technology platform,⁹ and
- Vertex Pharmaceuticals Inc. and CRISPR Therapeutics worth \$1.1 billion focused on CTX-001 for sickle cell disease and beta thalassemia.¹⁰

M&As continue a slow pace in the wake of soaring deals

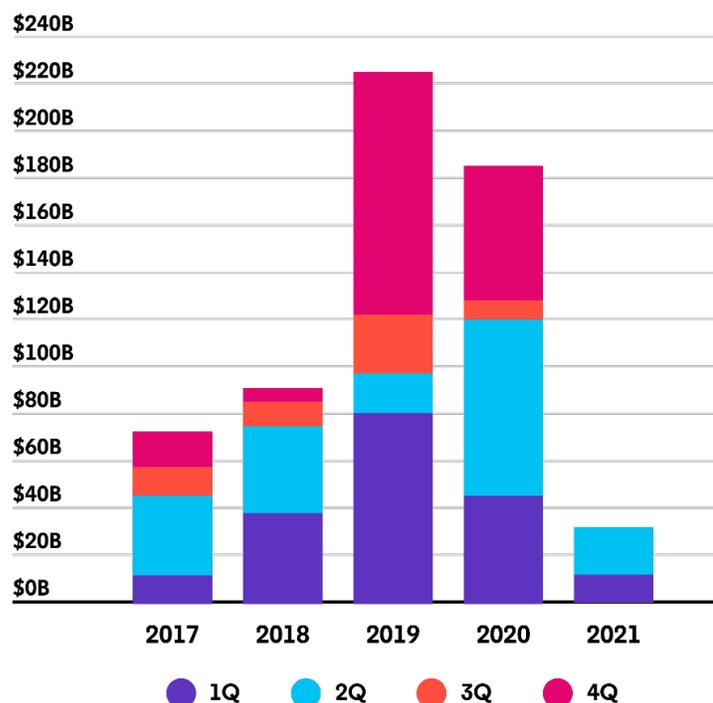
M&As in H1 2021 (\$31.7 billion) are at their lowest levels since 2016 (Figure 11), representing only 27% of what was recorded by this point in 2020 (\$119.6 billion) and only 33% of the 2019 figure (\$96.9 billion).¹ This is not wholly surprising given the large amounts of capital being invested in biotech companies, decreasing their motivation to be acquired.

“The number and value of financings are phenomenal right now. The industry has raised more than any full year on record in terms of IPOs, private placements and VC financings (except 2020, which was an extraordinary year). When companies have easy access to capital, they tend to shy away from M&As.”

Karen Carey, BioWorld Senior Analyst¹¹

Furthermore, many pharma companies opted to conserve cash in the face of a global pandemic. As shown in Figure 11, although the value of M&As in H1 2020 were significantly higher than in previous years, many of those M&As were already in progress before the pandemic hit, and M&A spending slowed during the second half of the year.

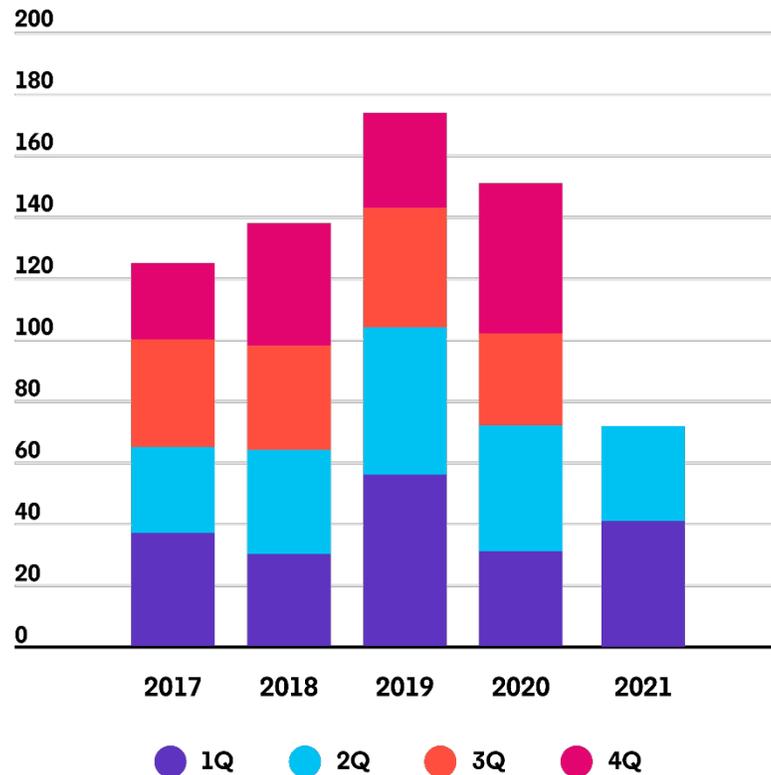
Figure 11. Biopharma M&A value by year



Source: BioWorld

Interestingly, the number of M&As is similar between H1 2020 and H1 2021 (Figure 12), demonstrating that high-value M&As have skewed the value for 2020. For example, AbbVie’s \$63.0 billion purchase of Allergan in May 2020 contributed the majority of the total \$74.2 billion raised in Q2 2020 (from 41 M&As).

Figure 12. Biopharma M&A volume by year



Source: BioWorld

“We may not see many more of these really large M&As, such as AbbVie’s \$63 billion purchase of Allergan last year. Those mega-mergers skew the numbers for other years. As these companies are bought, there are fewer of them that can demand that high of a price.”

Karen Carey, BioWorld Senior Analyst¹¹

However, in H1 2021, none of the M&As reached the value needed to make the BioWorld top 20 list for acquisitions of biotech developers (>\$8.7 billion). Instead, the highest value was \$7.2 billion for Jazz Pharmaceuticals plc’s purchase of GW Pharmaceuticals plc (Table 1).

Table 1. Biopharma M&As worth \$1B+ in H1 2021, listed in descending order by projected value

Principal company	Partner company	Projected value (\$M)	Date
GW Pharmaceuticals plc	Jazz Pharmaceuticals plc	7,200	5/5/2021
China Biologic Products Holdings Inc.	CBPO Group Ltd.	4,760	4/21/2021
Viela Bio Inc.	Horizon Therapeutics plc	3,050	3/15/2021
Five Prime Therapeutics	Amgen	1,900	4/16/2021
Pandion Therapeutics Inc.	Merck	1,850	4/1/2021
MYR GmbH	Gilead Sciences Inc.	1,729	3/4/2021
Kymab Group Ltd.	Sanofi	1,450	4/9/2021
Prevail Therapeutics Inc.	Eli Lilly and Company	1,040	1/22/2021

Source: BioWorld; Cortellis Deals Intelligence

Besides this acquisition, which could prove to be transformational for Jazz Pharmaceutical plc, the remaining M&As in the list are more likely to be bolt-on acquisitions that complement the companies’ existing priorities. In addition, the recent history of consolidation has left few companies that can command the same high prices as we saw in prior years.

“Pharma companies have not been going on a spending spree because it’s been important to conserve their cash, as for the rest of the world. So, the main M&A activity we have seen has been either to access new technologies to further growth or to bolt-on potential new revenue streams.”

Mike Ward, Global Head of Thought Leadership, Life Sciences and Healthcare, Clarivate

Diagnostics grow in importance

A follow-on of the COVID-19 pandemic is the increased interest in establishing or growing diagnostic capabilities, including companion diagnostics. For example, QIAGEN N.V. is collaborating to develop and commercialize companion diagnostic tests for drug candidates of more than 25 companies.

There was considerable money raised by diagnostic companies in 2020, and they are now acquisition targets in 2021. Liquid biopsy companies are of particular interest owing to the advantages of liquid biopsy over solid tumor biopsy, including non-invasiveness and ability to detect biomarkers in blood, urine and sputum.

Exact Sciences, provider of cancer screening and diagnostic tests, completed its acquisition of Thrive Earlier Detection Corp., developer of the early-stage screening test CancerSEEK, in January 2021,¹² the intent of which was announced in October 2020 for cash and stock consideration of up to \$2.15 billion.

Following a \$25 million minority equity investment in Inivata Ltd, a commercial-stage, liquid biopsy platform company, in May 2020, NeoGenomics Inc. announced its intent to acquire the company at a fixed price option of \$390 million prior to the end of 2021.¹³

Early-stage assets raise substantial funds

Another growing trend is investment in discovery and preclinical companies, which represented a record 62% of VC investment value in 2020 and 23% of deal value in 2021.^{1,5} The public markets are also seeing more early-stage firms, such as Sana Biotechnology Inc., which focuses on in vivo and ex vivo cell engineering platforms to develop therapies for cancer, diabetes, cardiovascular disease, CNS disorders and genetic diseases. Despite its first Investigational New Drug (IND) applications not being submitted until 2022 and 2023, the company debuted at \$676 million in Q1 2021. The cell and gene therapy deals discussed earlier also fall into this category.

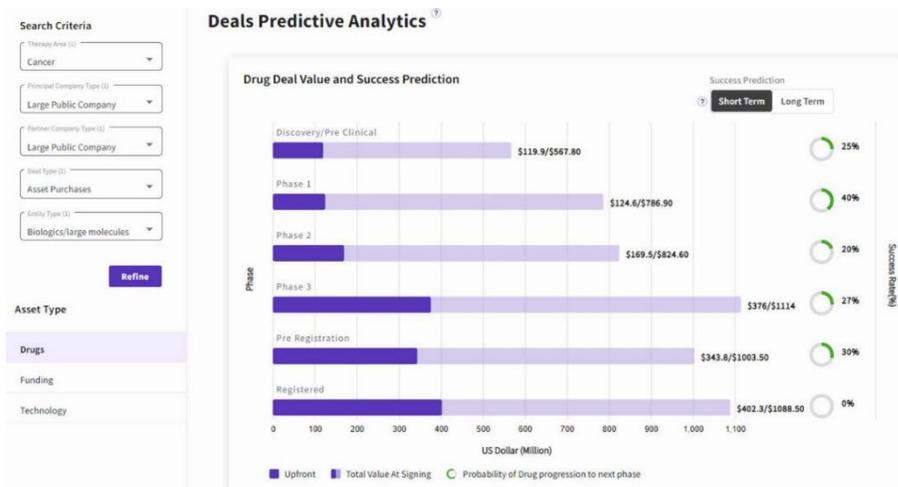
Companies are leveraging optionality in many of these early-stage deals. Bristol Myers Squibb will be granted a global exclusive license to Agenus Inc.'s proprietary bispecific antibody program AGEN1777, which is in late pre-clinical development, for \$200 million upfront and up to \$1.36 billion in development, regulatory and commercial milestones. In another oncology-related deal, GlaxoSmithKline plc will pay iTeo Therapeutics Inc. \$625 million up-front to develop EOS-448, a monoclonal antibody, and up to \$1.45 billion more in development and commercial milestones.

Valuing early-stage deals remains challenging

The limited information available for many pre-clinical or discovery companies and assets creates challenges around valuations, particularly for first-in-class therapies. Many companies rely on benchmarking against previous deals or other companies' similar deals. Widely dissimilar values from both sides, especially if not grounded in objective data, can lengthen the negotiation process. It's not unheard of for the process from ideation to deal announcement to take 6 to 12 months, and some deals simply do not survive.

Leveling the playing field and expediting deals negotiations are possible with robust, objective and neutral predictions of the value and probability of success of an asset (for an example, see Figure 13). This is achievable using artificial intelligence methods, such as automated machine learning, complemented by expert insights into the data points that are relevant for the prediction model.

Figure 13. Deal value and success prediction by phase for the oncology therapeutic area



Source: Cortellis Deals Intelligence

By going beyond standard benchmarking methodology and datasets, prediction capabilities can achieve an accuracy two times higher than conventional benchmark averaging.¹⁴ When generated by neutral third parties, these predictions provide an objective, reliable guide for all stakeholders to:

- identify deal opportunities that might have otherwise been missed,
- evaluate whether deals are a good fit before dedicating resources to negotiations,
- determine the best time to enter a deal within the asset's lifecycle and
- enter negotiations with an objective valuation starting point.

Looking forward

What should companies expect in the second half of the year and beyond? For now, likely more of the same — with many life science-centered funds trained on the industry and the medical innovation activity high, capital is likely to remain readily accessible.

M&A activity will likely remain muted as a result, with some notable exceptions, such as AstraZeneca’s \$39 billion acquisition of Alexion Pharmaceuticals,¹⁵ the third-largest acquisition of a biotech yet, which closed on July 21.

Investment in cell therapy and immuno-oncology is likely to continue apace as companies continue to develop new treatments in this space and find new applications for existing treatments. Gene therapies, on the other hand, may see slowing investment on the back of a recent run of disappointing results — a reminder that these treatment pathways are in their infancy and may take many years to develop fully, as did monoclonal antibodies.

While investment in COVID-related assets appears to be winding down, some of these technologies — most notably mRNA vaccines — are likely to find applications in other categories. BioNTech, notably, has established a manufacturing footprint in the United States. Chief Business and Commercial Officer Sean Marett told Mike Ward of Clarivate recently: “We now have a path to the market, and the CMC section is known to the regulators. So, producing another mRNA vaccine addressing other therapeutic applications such as oncology or infectious diseases will not be foreign to the regulators, and they’ve gotten to know us as people, which helps too. And the fact that we now have this infrastructure allows us to look at other opportunities.”¹⁶

Neuroscience could be the next big thing. The approval of Aduhelm, while controversial, is likely to boost neurologics development, prompting renewed efforts in the category by the likes of Roche, GlaxoSmithKline plc and Takeda Pharmaceutical Company Ltd. The global burden of diseases like Alzheimer’s disease and Parkinson’s disease or major depressive disorder is enormous, both in societal and economic terms. The opportunity for life science companies is correspondingly substantial and is likely to fuel investment and deal-making around molecules and companies targeting these diseases.

Regardless, the flurry of activity around life sciences companies is likely to make 2021 a banner year for financing and deal-making — and to contribute to exciting medical innovation that promises to advance human health down the line.

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