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M&As make their mark

M&A activity in the biopharma industry continued to boom last year, with more than 200 deals collectively worth over \$200 billion.

BioPharma Dealmakers and DealForma

2019 started with not only the highest-value biopharma merger and acquisition (M&A) of the year, but the second highest-value deal ever when Bristol-Myers Squibb (BMS) announced its plan to acquire Celgene for \$74 billion in January. Another hefty M&A announced in June—AbbVie’s \$63 billion acquisition of Allergan—added further momentum. With multiple further billion-dollar-plus M&As over the year (Fig. 1a), the upfront payments for M&As during the year totalled a record \$224 billion, and the second highest number of deals in the past decade—228 overall—were signed (Fig. 1b).

Considering the drivers for the two mega-mergers, both could help the companies involved deal with pressures from imminent generic competition. The BMS–Celgene merger brings together BMS’s checkpoint inhibitors with Celgene’s cell therapies—two areas set for growth—while Celgene’s leading blood cancer product, Revlimid (lenalidomide) is expected to face generic competition in 2022. And with its acquisition of Allergan to create a company covering a wide range of therapeutic areas, AbbVie gained the blockbuster Botox, which could come in useful as revenues from AbbVie’s bestseller Humira begin to decline when it faces biosimilar competition in 2023.

Oncology at the top again

Oncology was the most popular therapeutic area for M&As overall (Fig. 2a), with 45 deals collectively worth \$30.8 billion in upfront payments—a similar level to recent years (Fig. 2b), reflecting the extent to which immuno-oncology continues to dominate pharma R&D overall. The combination of BMS and Celgene has created a

major oncology presence, with BMS’s immuno-oncology pipeline and Celgene’s blood cancer portfolio, but also encompasses various other therapeutic areas. Beyond the two mega-mergers, the next highest-value deal was Pfizer’s purchase of Array Biopharma in a deal worth \$11.4 billion. Through this acquisition Pfizer gained access to Array’s small-molecule kinase inhibitor portfolio, including the BRAF kinase inhibitor Braftovi (encorafenib) and the MEK inhibitor Mektovi (binimetinib), which are approved for use in combination for the treatment of BRAF-mutant melanoma.

Kinase inhibitors for cancer therapy were also the focus of Lilly’s \$8 billion takeover of Loxo Oncology—a pioneering developer of cancer therapeutics for tissue-agnostic indications—in February. Loxo recently gained approval for its first drug, Vitrakvi (larotrectinib), an inhibitor of NTRKs, and has further kinase inhibitors in development, including a promising BTK inhibitor LOXO-305. Continuing the trend, Merck & Co. announced in December that it would acquire ArQule for \$2.7 billion, including its lead candidate ARQ 531, which is also a BTK inhibitor that has generated positive results for treating B cell malignancies in early-phase trials.

Platform shifts

Small-molecule drugs such as kinase inhibitors are still the most popular technology platform in those of last year’s M&As for which it is possible to define a focus (Fig. 3a). However, the recent growth in popularity of gene therapy is reflected in the sharp increase in the number of M&As in this area from 2015 (Fig. 3c). Last year saw several M&As that highlighted the increased commitment to the field from large biopharma companies.

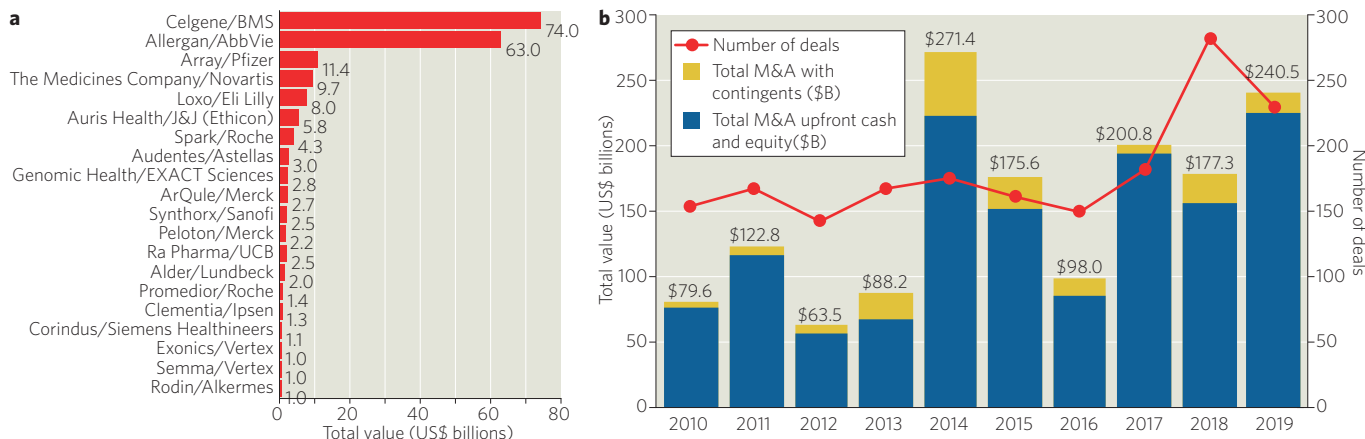


Fig. 1 | Overall M&A data in 2019 and trends. a | The top 20 biopharma, medtech and diagnostics M&As by total deal value in 2019. **b** | The total number of M&As from 2010–2019 by deal value with contingents and upfront cash. See Box 1 for details of the data and analysis methods.

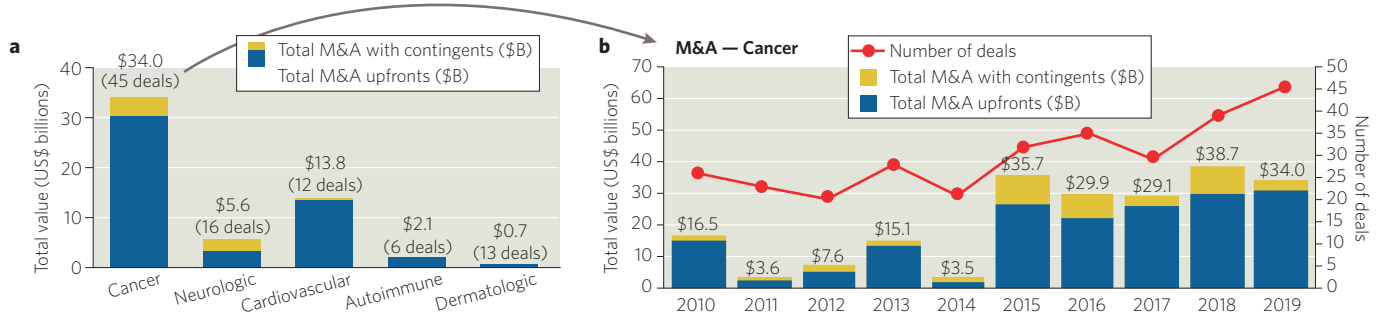


Fig. 2 | Therapeutic area trends. a | Value and number of M&As by therapeutic area in 2019. **b** | Value and number of M&As with a cancer focus from 2010-2019. See Box 1 for details of the data and analysis methods.

In February, Roche announced that it would acquire gene therapy company Spark Therapeutics, which developed Luxturna (voretigene neparvovec), the first FDA-approved in vivo gene therapy for a rare eye disease. Spark Therapeutics also has a portfolio of other gene therapies based on the adeno-associated virus (AAV) platform. Then in March, in another deal focused on AAV-based gene therapies for eye disorders, Biogen announced its \$877 million acquisition of Nightstar Therapeutics, which has a lead candidate NSR-REP1 in phase 3 trials. And capping the year, Astellas bought Audentes Therapeutics for \$3 billion. Audentes has a pipeline of AAV-based therapies for rare neuromuscular diseases, including AT132 for X-linked myotubular myopathy (XLMTM).

Another platform that has recently come to the fore is RNA interference (RNAi), with the pioneering approval of Alnylam's Onpatro (patisiran) in 2018. Reflecting the increasing maturity of the field, Novartis paid \$9.7 billion to acquire The Medicines Company, including its promising RNAi-based therapeutic inclisiran, which targets PCSK9 to treat patients with atherosclerotic heart disease and familial hypercholesterolemia.

Asset-driven deals

A number of major M&As with a strong emphasis on particular clinical assets were announced over the year. In May, Merck & Co. announced it would acquire Peloton Therapeutics—which has an oral HIF2α inhibitor for metastatic renal cell carcinoma (RCC) that is about to enter phase 3 trials—for \$1.05 billion upfront and a potential \$1.15 billion in milestones.

In September, eptinezumab, a calcitonin gene-related peptide (CGRP)-targeted antibody in development for the prevention of migraine, enticed Lundbeck to buy Alder for almost \$2 billion. And in October, UCB bought Ra Pharmaceuticals for \$2.1 billion and its

Box 1 | Data and analysis

The DealForma database was used to analyze mergers and acquisitions of biopharma, medical device, and diagnostics companies announced between 1 January 2019 and 31 December 2019. Whole company acquisitions, mergers, reverse mergers, exercised acquisition options, and exercised partnerships which had an option to acquire were selected. Business unit and program asset purchases were excluded, as were terminated acquisitions.

The list of top M&A deals was generated by filtering for biopharma therapeutics, platform/discovery technologies, medical devices, and diagnostic technologies among the target's core assets, then sorted by the announced total deal value.

Data for the top 5 technologies and top 5 therapeutic areas were generated by filtering for therapeutic asset deals and relevant technology categories. DealForma analysts assign the M&A primary therapy area and technology based on the target company's leading asset at the time. All financials are based on publicly disclosed figures.

The total number of M&A deals tracked by DealForma for the 1 January 2019 and 31 December 2019 period among all healthcare and life sciences categories was 228 deals for a total announced value of over \$240 billion.

Feel free to contact analysts@dealforma.com for any questions.

complement C5 protein peptide inhibitor under development for the neuromuscular autoimmune disease myasthenia.

Other notable asset-focused deals included Roche's \$1.4 billion acquisition of Promedior, including PRM-151 for idiopathic pulmonary fibrosis, and Ipsen's purchase of Clementia Pharmaceuticals and its late-stage retinoic acid receptor-γ agonist palovarotene for the rare bone disorder fibrodysplasia ossificans progressiva.

Finally, ending the year with an oncology-focused, asset-driven M&A, Sanofi aimed to strengthen its presence in the immunoncology space with its \$2.5 billion acquisition of Synthorx. The company's lead candidate, THOR-707, is a variant of interleukin-2 (IL-2) that is in clinical development for multiple solid tumors.

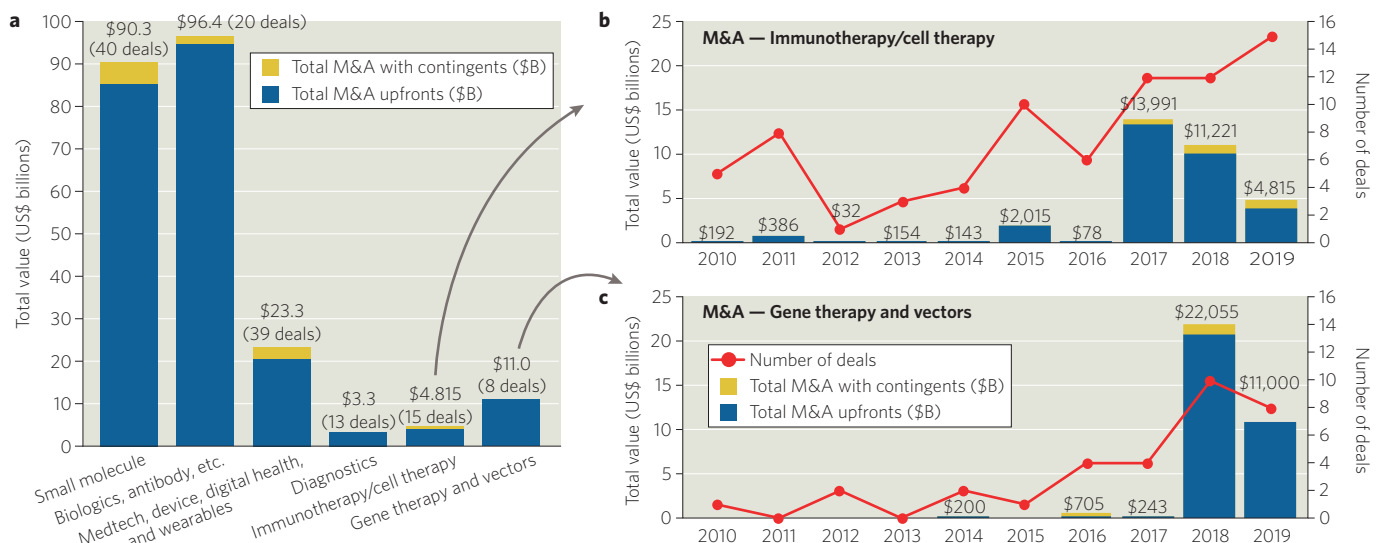


Fig. 3 | Technology platform trends. a | Value and number of M&As by technology type in 2019. **b** | Value and number of M&As with an immunotherapy/cell therapy focus from 2010-2019. **c** | Value and number of M&As with a focus on gene therapy and vectors from 2010-2019. See Box 1 for details of the data and analysis methods.