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REPORT

Pharmaceutical Innovation and the Inflation Reduction Act: 2025 Year in Review

MARCH 31, 2026

A Note on Authorship
This report was researched and published by the authors during their tenure at ATI Advisory from 2023 to 2025. With continued support from Arnold Ventures, the authors carry forward this work under Verdant Research.

ATI Advisory

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Overview

We follow 19 biopharma companies that have had or are likely to have a drug selected for Medicare negotiation as a result of the Inflation Reduction Act (IRA) of 2022. As other macro-level uncertainties influenced decision-making and investment throughout much of 2025, attention on the IRA has diminished and it featured far less frequently in commentary and questions on the year-end conference calls.

Sentiment around the industry improved toward the end of the year and there was a refocusing on the core fundamentals that more typically drive strategy and investment decisions: losses of exclusivity (LOEs), changes in executive ranks, and executing to meet the financial objectives that catalyzed restructuring and pipeline prioritizations at numerous companies. 2026 is being characterized as a catalyst-rich year in terms of pipeline progress and clinical data, with many companies emphasizing the industry is entering a period of significant innovation.

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Executive Orders on drug pricing in 2025.

Policy activity was high—but clarity and impact remained limited.

KEY FINDINGS

In our previously published wrap-up of 2024, we concluded that the IRA continued to have a relatively limited impact on investment behavior, while other political, regulatory, and economic uncertainties had encouraged companies to take a "wait and see" approach. That uncertainty carried into 2025.

With fewer external distractions by Q4, the strategic priority is now on progressing key products through the pipeline and executing on new product launches that will drive the next phase of growth.

Companies are trying to boost productivity by focusing on where they think they can have the greatest impact scientifically and commercially. Since 2023, the number of pipeline programs for our companies has increased 6%. However, this has not been linear growth, as a number of companies have been cutting assets and then rebuilding with a greater percentage of "higher conviction" assets. Pipeline candidates are held to a higher bar before progressing and capital is allocated to prospects with the greatest probability of success. Research and development (R&D) teams partner with commercial colleagues to prioritize prospects, and exercise discipline in culling candidates they view as less differentiated or competitive. This qualitative upgrade is good for innovation and for patients.

While these are steady state activities rather than active restructuring programs, some companies are nevertheless undergoing change. Several are in the midst of CEO transitions, which could prompt further shifts in R&D strategy or direction. GSK, NovoNordisk and Sanofi have all recently named new CEOs, who will be responsible for navigating the next phase of growth amidst intense competition for their highly concentrated revenue base.

The patent cliff continues to shape investment and strategic priorities for companies. In early 2025, Johnson & Johnson's Stelara lost its exclusivity resulting in a decline of over 40% in US sales. Novartis' annual sales suffered a 15 percentage point hit due to the expirations of Entresto, Promacta and Tasigna in the second half, with this multi-product impact continuing through 2026.

We saw a pickup in R&D investment in the second half, but the year-over-year (YOY) increase was lower than what was recorded the last couple of years. For full-year 2025, R&D increased 5.1%. With 2026 being highlighted as a key year for late-stage clinical programs, many companies suggest R&D could accelerate in 2026 coming off of a nearly 7% increase in the second half of 2025.

Licensing deals and development collaborations with Chinese companies remain an important theme, making up 38% of our companies' largest product transactions. Compared with 2024, last year's deal flow was characterized by investments in a broader range of therapeutic areas, more complex modalities, and a higher ceiling on potential deal value. More significantly, China is increasingly viewed as a source of innovation and competition, with some stakeholders showing concern that China is benefiting from regulatory and clinical advantages conferred by Chinese government support.

+6%
increase in pipeline programs since 2023.

5.1%
R&D growth in 2025 (year-over-year).

7%
R&D growth in the second half of 2025.

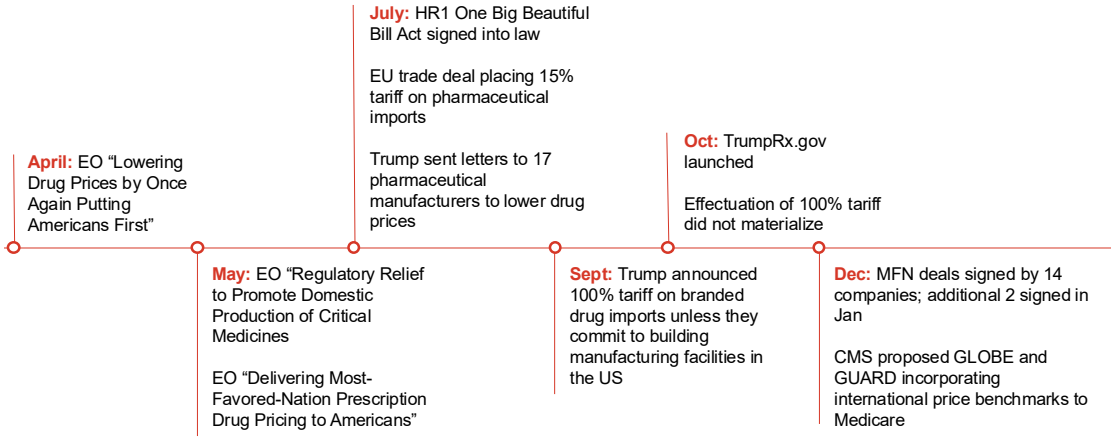
38%
of major product deals involve Chinese Partnerships.

Regulatory, Economic, and Policy Developments

Overall market performance was characterized by a series of regulatory, economic, and political upheavals. Uncertainties weighed heavily on the first three quarters of 2025—first from funding and regulatory and agency leadership losses, followed by announcements about policy initiatives that carried little detail, including three Executive Orders on lowering prescription drug costs, proposed tariffs on pharmaceuticals, and letters to manufacturers asking for voluntary price reductions.

Though "Most-Favored-Nation" (MFN) pricing and tariffs were central points of discussion in the first three quarters, they received little airtime in Q4 calls. Instead, instability and unpredictability at the Food and Drug Administration (FDA), including the influence of politics in regulatory decision-making, became the main macro-level concern toward the end of the year.

Figure 1. 2025 Timeline of key policy events related to prescription drug pricing



THREAT OF TARIFFS AND MOST-FAVORED-NATION PRICING

Leading into the 4th quarter, the sector experienced a significant improvement in sentiment and stock market performance, catalyzed by the first MFN agreement with Pfizer on September 30. Thirteen more companies followed in the fourth quarter. The agreements provided a reprieve from tariffs—a key overhang—and the DRG, the large pharmaceutical index, rallied 34% from its trough in April through the end of 2025 and appreciated 21% for the full year. BTK, a key biotechnology index, staged a similar recovery from its low, and recorded a 25% annual gain after several weak years. Perhaps more importantly, there was optimism that the biopharma industry was in the early stages of a longer-term recovery fueled by a strong product cycle, fewer macro-level headwinds, and a better funding environment due to declining interest in rates. All these factors contributed to a positive cycle of investment, including dealmaking.

Tariffs on imports were central to Trump's campaign, with "reciprocal tariffs" announced on April 2, 2025. Though pharmaceuticals were initially spared, they were later included in an EU trade deal capping tariffs at 15% and a subsequent 100% tariff on branded imports from countries without deals—all aimed at forcing MFN pricing, onshoring manufacturing, and bypassing middlemen. When companies failed to voluntarily lower prices, the White House sent letters to 17 CEOs in July demanding MFN prices for Medicaid, a commitment not to offer other developed nations better prices, and a direct-to-patient sales channel, offering three years of tariff relief and trade support for raising international prices in exchange.

As of the writing of this report, all companies but Regeneron have responded and reached MFN agreements with the administration. However, even before these demands, most companies expressed confidence in their ability to mitigate the impact of tariffs by managing the supply chain and shifting inventory to the US. Some also already made broader commitments to expand US manufacturing—Merck and AstraZeneca paused or cancelled planned investments in the UK.

Once the deals were struck, attention to administration actions targeting the sector declined in Q4 earnings calls. The impact of MFN deals was viewed as relatively contained given its narrow scope: the agreed-to MFN discounts only apply to Medicaid, which already receives the deepest discounts of all payer channels and in some cases may not differ much from current levels. Moreover, the MFN deals appear to exempt companies from CMMI demonstration models GLOBE and GUARD, announced in December, which seek to apply MFN pricing to Medicare. Most companies acknowledged MFN as a headwind, but absorbed it into guidance without explicitly quantifying the expected impact, suggesting that they did not expect major changes in earnings going forward.

From tariff risk to recovery cycle.

MFN agreements help shift biopharma into a new phase of investment and growth.

TRUMP RX AND DIRECT-TO-PATIENT SALES PLATFORMS

The letters to manufacturers also required manufacturers to provide "an avenue to cut out middlemen and sell medicines directly to patients, provided they do so at a price no higher than the best price available in developed nations". In October, TrumpRx.gov was launched as a clearinghouse to connect patients to cheaper brand drugs. The site itself fell short of bold headlines, due to the relatively small number of drugs included and the fact that many were already generically available or already offered discounts through copay coupons.

Several companies had established or launched direct-to-patient platforms well before TrumpRx was announced. LillyDirect (Eli Lilly) officially went live January 2024, NovoCare (Novo Nordisk) launched March 2025, and Eliquis 360 (Pfizer/Bristol Myers Squibb) launched September 2025. Companies see direct-to-patient (DTC) as a way to expand the market for uninsured or under-insured patients who might otherwise switch to generics, while also managing the political optics around drug pricing. Novo Nordisk is also experimenting with different direct channels such as HIMS, Ro, Weight Watchers, Amazon and Costco to increase access and expand the market, though there are costs to leveraging these partnerships.

Whether through TrumpRx or companies' platforms, it seems unlikely that a large share of utilization will flow through DTC channels. Cash-paying patients are the only group expected to realize any benefit, as copayments for insured patients are still lower in most cases. Obesity drugs, which behave more like a consumer product, may be an important exception. Because people are willing to pay out of pocket without insurance coverage, Eli Lilly and Novo Nordisk have begun to compete on list prices, particularly for entry doses, with volume increases showing up within months of price cuts. Notably, comments from both manufacturers indicate that approximately 30% of sales for anti-obesity drugs are flowing through self-paying consumer channels.

Direct-to-patient expands access—but impact remains limited.

Adoption is modest overall, with traction mainly in cash-pay segments like obesity drugs.

DEEP CUTS TO SCIENTIFIC LEADERSHIP AND FUNDING

The most pressing remaining concern during 2025 earnings calls and recent investor events was staffing cuts and leadership losses at the key public health agencies, including FDA, NIH, and CDC. A number of senior agency leaders chose to exit before Trump took office in January rather than serve under RFK Jr., and replacing them has proven challenging due to high turnover and personal and political controversies. There were five individuals who held the role of director or acting director at CDER last year, and another three directors and three deputy directors at CBER, and four in the Office of Therapeutic Products (OTP), a key CBER office. Although changes at the FDA have created uncertainty due to politicization of decision-making and shifts in evidence standards, there is also a concern about the risk of lengthening review times and missed deadlines with the loss of scientific expertise at the agency.

Longer term, the loss of expertise and key personnel at other agencies and institutes could directly alter the scientific ecosystem that populates our companies' pipelines. More than half of NIH's 27 institutes and centers are now without permanent directors, representing an extraordinary hollowing out of federal public health leadership in under a year. Combined with the cuts in funding and disruptions to grants during the year, the ramifications may be felt for many years to come.

More than half of NIH institutes now lack permanent leadership.

An unprecedented erosion of public health expertise threatens long-term innovation and pipeline development.

IRA-SPECIFIC COMMENTARY AND UPDATES

The dominance of other macro-level uncertainties meant the IRA was not a significant consideration for management or investors throughout 2025. The industry continues to advocate against Medicare negotiation to mixed success. The One Big Beautiful Bill Act, passed in July 2025, exempted or delayed the selection of drugs with orphan indications from negotiation and was considered a win for industry. Blockbusters such as Keytruda, Opzelura/Jakafi, and Opdivo gain more time on the market from this amendment. However, industry did not succeed in extending time to selection of small molecules to that of biologics to address the "pill penalty" nor have their legal challenges to Medicare negotiation stopped or hampered the program. CMS has largely continued implementation under rules developed during the Biden administration.

IRA fades as a priority—but remains structurally intact.

Industry wins targeted exemptions, but core Medicare negotiation rules continue unchanged.

MEDICARE NEGOTIATION

CMS announced 15 Part D drugs for the second cycle of the Medicare Drug Price Negotiation Program (MDPNP) on January 17 (IPAY 2027), two weeks ahead of schedule. Having been on the market for an average of 11 years, these drugs are a mature presence in their respective companies' portfolios. In 2023 they collectively generated $277 bn in global sales, 67% of which came from the US market. Several drugs are major drivers of their company's earnings: Ofev accounts for over 20% of Boehringer Ingelheim's US sales and the semaglutide product line (Ozempic, Wegovy, and Rybelsus) comprises of over 75% of Novo Nordisk's. The maximum fair price (MFP) for these drugs was published on November 25, 2025. Price discounts ranged from 38% to 84% of the 2024 list price.

Identifying a clear impact from MDPNP is difficult in most cases. A number of drugs were already expecting generic or biosimilar competition by the time negotiated prices apply. FDA has approved generics for Xtandi, Tradjenta, Pomalyst, and Janumet, with Pomalyst and Janumet expected to face generic competition early 2026. (CMS releases the originator drug from MDPNP once a generic or biosimilar shows enough uptake in Medicare.) While not facing a generic, Novo Nordisk's semaglutide line is also seeing slower than expected growth due to competition from Lilly's tirzepatide products (Mounjaro, Zepbound). Others have fared relatively well even under MDPNP. Eliquis, for example, took a 40% list price cut that Bristol Myers Squibb expects to produce an increase in sales due to increased volume.

Table 1. Drug-specific updates and commentary for products under MDPNP

Company	Selected Drug	Commentary
AstraZeneca	Farxiga (IPAY 2026)	Company expects US LOE in April 2026; expects sales declines in the US.
	Calquence (IPAY 2027)	AZN filed lawsuit challenging interpretation the applicability of "qualifying single source drug" to Calquence.
Bristol Myers Squibb	Pomalyst (IPAY 2027)	Company does not expect a negative impact since the drug will have lost exclusivity in the US by the time the negotiated price goes into effect.
	Eliquis (IPAY 2026)	Finalized a "zero-dollar" Medicaid agreement and instituted a 40% list price decrease, which eliminates statutory inflation rebates that had been accumulating over the year. From 2026 guidance, BMS expects a 10-15% increase in global sales from increased volume, despite a stepdown in US sales.
J&J	Xarelto (IPAY 2026)	Patent expired in 2025, generic available.
Novartis	Entresto (IPAY 2026)	Patent expired in 2025, generic available.
Novo Nordisk	Semaglutide (IPAY 2027)	Lowered 2026 sales outlook to a decline of 5% to 13% vs 2025 following slower than expected growth (10%) in 2025 and steep market losses to Eli Lilly's tirzepatide franchise, deep pricing pressure from cash channels, and near-term generic competition in some international markets even before negotiated prices go into effect in 2027.

PART D REDESIGN

The impact of redesign on 2025 financials came in-line with companies' projections of a "manageable" effect, in which lower net prices would be offset in part by improved volume and adherence. Bristol Myers' and Pfizer's Eliquis' US sales were down 1% in the first half, which BMS attributed to a lower net price in the US due to higher manufacturer discounts under the Part D Redesign. However, sales rebounded in the second half of the year as volume improved due to the $2,000 out-of-pocket spending cap. For the full year, US sales of Eliquis increased 6%. Similarly, AstraZeneca noted that Part D redesign had a negative impact on its oncology franchise, including Tagrisso, but found that volume increases still drove net growth of key products.

Meanwhile, Gilead disclosed a 4% negative impact on product sales in their base business (mainly the HIV business, which accounted for $900 mn of the headwind out of an estimated total $1.1 bn impact to sales). Pfizer experienced ~$1 bn impact due to lower net realized prices for Eliquis, Xeljanz, Vyndaquel and Ibrance, in line with expectations. Johnson & Johnson highlighted several affected products across therapeutic areas, with immunology drugs Stelara and Tremfya facing more significant pricing headwinds.

Company and Portfolio-level Developments

R&D SPENDING

Spending on R&D across the 16 companies that reported fiscal year results increased 5.1% in 2025, with an acceleration in the second half compared with the first (3.4%). While Novo Nordisk's swing from market-leading 48% growth to just 8% was a contributor to lower growth in the last year, other factors include a broader slowdown in discretionary spending, diversion to manufacturing due to macro developments, and more concentrated investment in a narrowing set of therapeutic areas. Notably, median growth for our cohort remained consistent at ~9%, and several companies highlighted higher investment per program. Five manufacturers (Biogen, Bristol Myers Squibb, Johnson & Johnson, Merck, and Pfizer) recorded YOY declines. Johnson & Johnson already experienced losses of exclusivity for key products, such as Stelara.

More spend per program. Fewer programs overall.

R&D strategy is shifting toward depth over breadth.

Table 2. Change in R&D spending from 2023 to 2025

Company	2023-2024	2024-2025
AbbVie	15%	12%
Amgen	25%	22%
Astellas Pharma	6%	n/a
AstraZeneca	19%	13%
Biogen	-17%	-7%
Boehringer Ingelheim	9%	n/a
Bristol Myers Squibb	7%	-3%
Eli Lilly	18%	21%
Gilead Sciences	0%	-1%
GSK	8%	13%
Johnson & Johnson	14%	-11%
Merck & Co	-40%	-13%
Novartis	8%	11%
Novo Nordisk	28%	22%
Pfizer	1%	-4%
Regeneron	16%	12%
Roche	0%	0%
Sanofi	14%	11%
Takeda	-5%	n/a

Companies without 2025 fiscal year results have n/a

R&D STRATEGY AND STRUCTURE

As mentioned in our previous reports, years of anticipating and planning for LOEs led many of these companies to implement significant R&D restructuring and pipeline prioritizations in recent years. Other factors that drove strategy and cost rationalization included changes in executive ranks and loss of revenues related to COVID vaccines and treatments.

R&D productivity remained a top strategic priority and "selectivity" a key theme. As GSK's new CEO, Luke Miels, said "accelerating R&D is our biggest opportunity to create value as a company". We continue to hear about concentration of investment behind higher-conviction assets with the goal of accelerating development and optimizing the value of these key programs. In some cases, the pruning of less competitive and lower-priority programs is resulting in smaller pipelines. Importantly, the general pattern is still to raise R&D investment, but to incorporate stronger commercial filters in decision-making and ensure the capital is directed toward the most differentiated and strategically important programs.

While a few companies have narrowed the number of therapeutic areas on which they focus, others have actively diversified to balance the risk in their portfolio and pipelines. For example, in September 2022, Novartis launched its strategy to transform to a focus on five core therapeutic areas "with the aim to increase value per new molecular entity from our deep pipeline". Under CEO Paul Hudson, Sanofi refocused on immunology and specialty care while reducing exposure to diabetes. Its explicit goal was to build its pipeline around fewer, high-impact franchises similar to its success with Dupixent.

In contrast, a few have actively diversified their pipelines. Biogen's pipeline has historically been dominated by multiple sclerosis and high-risk central nervous system (CNS) assets (including Aduhelm). New CEO Chris Viehbacher has restructured the pipeline strategy to include more de-risked CNS programs, rare disease and immunology. As Merck prepares for the LOE of Keytruda, it is taking big bets in therapeutic areas such as cardiovascular, infectious disease and immunology. Given the company's historic strength in some of these disease areas, this can be viewed as a deliberate rebalancing away from an overdependence on oncology but is not a wholesale opportunistic grab for assets or a retreat from oncology.

After contracting in 2024, 17 of the 19 companies increased or held flat the size of their pipeline in 2025, with only Amgen and Takeda continuing to cut. The rebound is not evenly distributed, with five companies accounting for nearly 80% of the increase. Takeda's continued decline is the starkest outlier and reflects its ongoing structural retrenchment—a 54% reduction over four years driven by the Vyvanse LOE and deliberate focus on five core therapeutic areas.

Despite the strong emphasis on "differentiated assets", a herd mentality remains around a handful of therapeutic areas: obesity, which has led to a burgeoning focus on other cardiovascular and metabolic comorbidities (such as hyperlipidemia and MASH); and next-generation cancer platforms such as bispecific antibodies and novel cell therapies. We have also observed some "clustering" of deals centered on newly validated targets within immunology (TI1A) and emerging pathways to treat schizophrenia and CNS diseases. Notably, these trends seem to be driven by the evolution of science in disease areas that are broad enough to accommodate more than just one player.

Smaller pipelines. Bigger bets.

Companies are concentrating capital behind high-conviction programs to drive impact.

17
companies rebuilt or stabilized pipelines.

80%
of the growth is driven by just 5 of those companies.

The patent cliff is expected to steepen over the next several years (Table 3). Beginning in 2026, notable products expected to face LOEs include AstraZeneca's Farxiga in April ($8.4 bn in 2025 sales), Merck's Januvia and Janumet ($1.3 bn), Bristol Myers Squibb's Pomalyst ($2.3 bn) and Roche's Xolair ($3.7 bn). Johnson & Johnson has now annualized the biosimilar entry for Stelara but continues to expect competition for Opsumit ($1.6bn) and potentially Simponi ($1.2 bn) in the second half of 2026. IRA negotiated prices also go into effect this year for Farxiga, Januvia and Stelara.

Table 3. Share of companies' 2024 US drug sales for key products with an expected patent expiration between 2025 to 2032

Company	Products	Expected patent expirations	Share of company's US drug sales, 2024
AbbVie	Vraylar, Imbruvica	2026, 2029	13%
Amgen	Repatha, Krystexxa, Blincyto, Prolia, Xgeva, Otezla	2025, 2028, 2030	39%
Astellas Pharma	Xtandi	2027	56%
AstraZeneca	Tagrisso, Farxiga, Lynparza	2027, 2030, 2032	27%
Boehringer Ingelheim	Jardiance, Ofev	2025, 2028	104%
Bristol Myers Squibb	Opdivo, Orencia SC, Eliquis, Pomalyst, Yervoy	2025, 2026, 2028	60%
Eli Lilly	Taltz, Trulicity	2027, 2030	19%
GSK	Shingrix, Tivicay, Dovato, Trelegy, Ellipta, Benlysta	2025, 2027, 2028, 2029	41%
Johnson & Johnson	Erleada, Darzalex, Opsumit, Xarelto	2025, 2029, 2030	35%
Merck & Co	Keytruda, Bridion	2026, 2028	64%
Novartis	Cosentyx SC, Promacta, Entresto	2025, 2027, 2029	41%
Pfizer	Vyndaqel, Ibrance	2027, 2028	17%
Roche	Ocrevus, Xolair, Perjeta	2025, 2029	35%
Takeda	Entyvio	2032	26%

Source: Authors' analysis from Evaluate Pharma data

Several executives characterized their evolving pipelines on recent calls:

⇢ **Pfizer** – CEO Albert Bourla stated that its portfolio and pipeline pruning are largely complete as it goes into 2026. While the prioritization efforts led to about $500 mn in R&D savings, the funds have been reinvested in R&D. As they begin to increase the number of programs, they aim to "refresh, improve the productivity across [our] R&D platform to invest those dollars back into R&D" to further advance their pivotal programs.

⇢ **Biogen** – The company's pipeline reset has deliberately focused on diversifying and derisking its CNS-heavy pipeline and portfolio while right-sizing its R&D budget. In addition to discontinuing lower-value and low-conviction programs, it has bolstered the late-stage pipeline to fill revenue gaps from LOEs and a lower revenue base. Over the last 3 years since (then) incoming CEO Chris Viehbacher initiated the "Fit for Growth" program, Biogen has reduced R&D spending by 22.4% and decreased the size of its pipeline by 36.4% while reducing the degree of binary risk for the company, given the high failure rates in certain segments of neurology, including MS programs.

⇢ **Bristol Myers Squibb** – Following a CEO transition in 2023, the company emphasized the importance of execution in both its R&D and commercialization of new products as it prepares for several key upcoming LOEs (Eliquis, Opdivo and Pomalyst) Management has been prioritizing and pruning its pipeline for differentiation, commercial relevance, and strategic position, rather than just cutting costs. As part of this effort, it has discontinued some assets because "it is also important to know when to stop investing in something.

⇢ **AstraZeneca** – The company stands out as having increased the size of its pipeline, pointing to diversity as a benefit. In its first quarter call, CEO Pascal Soriot emphasized, "We now have more than 100 phase 3 trials that are ongoing….It's an enormous momentum going through the pipeline." While it also emphasizes discipline and prioritization, the company has actively expanded into more complex modalities and mechanisms, particularly within cancer.

⇢ **Merck** – On February 23, the company announced plans to divide its human health business into two distinct business units, with one division focused solely on oncology and the other encompassing specialty, pharma and infectious diseases. This reorganization is intended to improve transparency and focus on its execution of key product launches.

⇢ **Sanofi** – The company announced in February 2026 that its CEO Paul Hudson will be leaving the company. During his tenure, he was highly focused on transforming the pipeline by increasing R&D investment and refocusing the portfolio on fewer therapeutic areas in an effort to build a pipeline that could replace its blockbuster Dupixent. His departure seems at least partially related to several recent clinical setbacks and concern that the pipeline transformation is taking longer than anticipated.

Pipelines are evolving along three strategic paths:

- Optimize and reinvest for productivity
- Reduce risk and rebuild with stronger assets
- Expand scale and diversify for growth

INVESTMENTS IN TECHNOLOGY AND AI

Companies have increased their investments in AI over the last few years and anticipate improvements in R&D productivity as a result. Most comments thus far suggest optimism about the future impact of scaling AI rather than concrete results, and the use cases are diverse. For example, AstraZeneca claims that AI is already improving its probability of success, including helping to identify the right patient populations for clinical trials, particularly where biology is more complicated. Novartis is using AI for target identification and optimization and hopes to compress time from target identification to clinic through its partnership with Amorphic Labs. Sanofi is using AI to "dynamically allocate resources…that means there will be some programs that stop…and we will double down on some programs". Meanwhile, Amgen announced a partnership with Generate Biomedicines, and Eli Lilly and Nvdia entered into a far-reaching partnership to invest up to $1 bn over five years to create a joint AI co-innovation lab for drug discovery in January.

AI adoption is accelerating across the value chain.

Use cases span discovery, trials, and portfolio optimization.

DEALMAKING

M&A

After taking a pause amidst tariff uncertainty during the second quarter, the number of M&A transactions in 2025 caught up to 2024 levels, and the total deal value increased significantly. The year counted 21 acquisitions (+1 from 2024) with total potential deal value of at least $1 bn, and an aggregate total value of $94.9 bn (+$57.0 bn) and an average of $4.5bn (+$2.9 bn). The average was skewed by seven deals over $5 bn, of which 3 were $10 bn or more. The first transaction of 2025 was the largest: Johnson & Johnson's $14.6 bn acquisition of Intra-Cellular Therapeutics.

The remaining 14 deals were in the $1 to $5bn range. By all measures, average deal size in 2025 was sharply higher than 2024, when the total deal values averaged just $1.6bn.

To mitigate risk and address the impact of LOEs, more deals were for late-stage and relatively de-risked assets. Notably, four of the deals involved lead assets already on the market, including Johnson & Johnson's acquisition of Intra-Cellular Therapeutics, as well as Merck/Verona and Sanofi/Blueprint. Another four were in phase 3. As such, the total value of these transactions was significantly higher than in 2024 despite a relatively stable number of acquisitions (21 vs. 20 in 2024). In 2024, deals skewed toward less expensive earlier stage deals, with total deal value of $38.0 bn, just 40% of 2025.

Acquisitions in 2025 were spread more evenly among immunology, oncology, metabolic, and cardiovascular-focused companies than in 2024, which concentrated in immunology and oncology. This gradual shift towards certain large, less specialized therapeutic areas is driven by several factors, including the prominence of the GLP-1 obesity market and an increased interest in related or comorbid cardiometabolic diseases, and the emergence of novel targets and modalities to treat CNS and immune disorders.

$94.9B
in deal value—**up $57B** YoY.

Same number of deals but at **2.5x** the value.

Small molecules continued to attract strong interest and were heavily represented in several of the largest transactions. Of the 21 largest deals, those centered on small molecules represented about $48.7 bn in potential transaction value compared with $42.4 bn for biologics. Notably, oncology deals, of which three of four were small molecules, were centered on phases 1 and 2 with an average of $1.9 billion in total values, a contrast with the overall increase in deals focused on later-stage assets.

Looking ahead, companies vary in their appetite for near-term deals. Some companies, such as Merck, Bristol Myers, and Roche, have communicated that they remain interested in business development and are prepared to execute if they find the right opportunity, though any transactions will be subject to strict financial and clinical scrutiny. Biogen indicated they would like to find one more "near-term growth asset – at least into phase 3 or commercial phase".

Others, namely Gilead and Regeneron, are more focused on executing existing pipeline candidates that are reaching maturity and signaling less urgency on the business development front. Regeneron stands out for their commitment to internal candidates, which comprise 95% of their R&D resources, while the industry average is closer to a 50/50 split between organic and externally sourced programs. Roche, on the other hand, has noted that 60% of their pipeline and total pharmaceutical sales involve a partnership.

Table 4. Select M&A transactions over $1bn in total deal value

Company	Target	Key asset(s)	Therapeutic profile	Indication	SM or Bio	Announcement Date 2025	Total ($mn)
Abbvie	Capstan	CPTX2309	Immunology	auto-immune diseases	Bio	6/30	$2,100
AstraZeneca	EsoBiotec	NanoBody Lentiviral platform	Oncology; immunology		Bio	3/17	$1,000
Bristol Myers Squibb	Orbital	OTX-201	Immunology	auto-immune diseases	Bio*	10/10	$1,500
Eli Lilly	Scorpion	STX-478	Oncology	breast cancer; gynecological and H&N cancers	SM	1/13	$2,500
	Verve	VERVE-102	Cardiovascular	atherosclerotic CV disease	Bio	6/17	$1,300
	SiteOne	STC-004	Neurology; pain	pain	SM	5/27	$1,000

Company	Target	Key asset(s)	Therapeutic profile	Indication	SM or Bio	Announcement Date 2025	Total ($mn)
GSK	IDRx	IDRX-42	Oncology	GIST	SM	1/13	$1,150
JNJ	Intra-Cellular	Caplyta	Neuroscience	schizophrenia; bipolar depression	SM	1/13	$14,600
	Halda	HLD-0915	Oncology	prostate cancer	SM	11/17	$3,050
Merck	Verona Pharma	Ohtuvayre	Respiratory	COPD	SM	7/9	$10,000
	Cidara	CD388	Infectious disease	flu	Bio	11/17	$9,200
Novartis	Regulus	RGLS8429 (farabursen)	Genitourinary	polycystic kidney disease	SM	4/30	$1,700
	Anthos	Abelacimab	Cardiovascular	atrial fibrillation; stroke prevention	Bio	2/11	$3,075
	Tourmaline Bio	Pacibekitug	Cardiovascular	ASCVD; Graves' Disease; CKD	Bio	9/9	$1,400
	Avidity Biosciences	Delpacibart Zotadirsen	Neurology	DMD	Bio	10/26	$12,000
Novo Nordisk	Akero	Efruxifermin	Metabolic	MASH	SM	10/9	$5,200
Pfizer	Metsera	MET-097i	Metabolic	obesity	Bio	9/22	$7,300
Roche	89bio		Metabolic	MASH	Bio	9/18	$3,500
Sanofi	Vicebio	VXB-241	Respiratory	RSV and MPV	Vaccine	7/22	$1,600
	Blueprint Medicines	Ayvakit	Immunology	systemic mastocytosis; gastrointestinal stromal tumors	SM	6/2	$9,500
	Dynavax	Hepatitis B Vaccine	Infectious disease	hepatitis b	Vaccine	12/24	$2,200
TOTAL							**$94,875**

*Cell therapy

Bio: biologic molecule, CKD: chronic kidney disease, COPD: chronic obstructive pulmonary disease, CV: cardiovascular, DMD: Duchenne muscular dystrophy, GIST: gastrointestinal stromal tumors, MASH: metabolic dysfunction-associated steatohepatits, SM: small molecule

PRODUCT LICENSING AND COLLABORATIONS

Product-related deals sharply increased in 2025. There were 24 transactions with upfront payments of $100 mn or more and total potential deal value of over $1 bn. In 2024, there were just 15 such deals. As with M&A, the aggregate and average potential deal value also increased meaningfully, from $20.3 bn in 2024 to $83.9 bn in 2025 (average deal of $1.4 bn to $3.5 bn).

Oncology still accounts for the largest number of deals, though there has been a shift towards next generation immunology bispecifics (PD-1/VEG-F) and radioconjugates. Overall, oncology was a core focus of 10 of the 24 deals, including Bristol's deal with BioNTech and Pfizer's acquisition of 3S Bio's bispecific antibody. Behind oncology, four deals were centered on immunology and three on obesity and metabolic assets. We also saw broader distribution in the stage of development for in-licensed assets than 2024. Though preclinical and phase 1 deals remain dominant, there were several large transactions involving phase 3 assets: Bristol/BioNTech for BNT327, GSK/Boston Pharmaceutical for efimosfermin, and Takeda/Innovent for IB1363 and IB1343. The appetite for licensing assets close to market launch underscores the urgency to fill revenue gaps LOEs as well as desire by some to acquire derisked assets, even if it requires a significant premium.

As in M&A, small molecules dominated product-centered deals, accounting for 11 deals compared with seven focused on biologics. In 2024, the ratio was reversed at three to seven. Despite "pill penalty" arguments, small molecule interest reflects the appealing commercial potential of combination therapies in metabolic, anti-obesity, and cardiovascular disease.

Oncology still leads number of deals—but diversification is rising.

Immunology, obesity, and metabolic assets are gaining share.

Table 5. Select M&A transactions over $1bn in total deal value

Company	Target	Key asset(s)	Therapeutic profile	SM or Bio	Annoucement Date	Total deal value ($mn)	Total upfront value ($mn)
Abbvie	Gilgamesh	bretisilocin	CNS; psychiatry	SM	8/25/2025	$1,200	$1,200
	Ichnos Glenmark Innovation	ISB2001	Oncology; immunology	Bio	7/17/2025	$1,925	$700
	ADARx	siRNA therapeutics	Neuroscience; immunology; oncology	SM	5/14/2025	$1,000	$335
	Gubra	GUI17 (GUB014295)	Anti-obesity	SM	3/3/2025	$2,225	$350
Astellas	Evopoint	XNW27011	Oncology	Bio	5/29/2025	$1,540	$200
AstraZeneca	CSPC	(blank)	Immunology	SM	6/13/2025	$5,330	$110
	Harbour BioMed	(blank)	Oncology	Bio	3/21/2025	$4,680	$175
	Jacobio Pharma	JAB-23E73	Oncology	SM	12/21/2025	$2,015	$100
Bristol Myers Squibb	BioNTech	BNT327	Oncology	Bio	6/2/2025	$11,100	$1,500
	Philogen	OncoACP3	Oncology	RP	6/10/2025	$1,350	$350
Gilead	Leo Pharma	stat6 research programs	Inflammation; dermatology	SM	1/11/2025	$1,700	$250
GSK	Hengrui Pharma	HRS-9821	Respiratory	SM	7/28/2025	$12,500	$500
	Boston	efimosfermin	Metabolic	Bio	5/14/2025	$2,000	$1,200
Merck	Jiangsu Hengrui	HRS-5346	Cardiovascular	SM	3/25/2025	$1,970	$200
Novartis	Monte Rosa	MRT-6160	Immunology	(blank)	9/15/2025	$5,700	$120
	Argo Biopharma	ANGPTL3	Cardiovascular	SM	9/3/2025	$5,200	$160
Novo Nordisk	Septerna	G protein-coupled receptor drug discovery	Anti-obesity	SM	5/14/2025	$2,200	$200

Company	Target	Key asset(s)	Therapeutic profile	SM or Bio	Annoucement Date	Total deal value ($mn)	Total upfront value ($mn)
	United Laboraties	UBT251	Anti-obesity	SM	3/24/2025	$2,000	$200
Pfizer	3SBio	SSGJ-707	Oncology	Bio	5/1/2025	$6,150	$1,250
	YaoPharma	YP05002	Obesity	SM	12/9/2025	$1,930	$150
Roche	Zealand Pharma	petrelintide	Anti-obesity	SM	3/12/2025	$5,250	$1,650
Sanofi	Dren Bio	DR-0201	Oncology; immunology	Bio	3/20/2025	$1,900	$600
	Earendil Labs	HXN-1002; HXN-1003	Immunology	Bio	4/17/2025	$1,800	$125
Takeda	Innovent Biologics	IB1363; IB1343	Oncology	Bio	10/21/2025	$1,200	$1,200
Total						**$83,865**	**$12,825**

Bio: biologic molecule, SM: small molecule, RP: Radiopharmaceutical

CHINA AS A SOURCE OF INNOVATION

China has grown as both a competitive concern and opportunity to augment pipelines. China-originated assets continue their prominence in deal activity, representing 14 of 37 product deals with upfront payments of $50 mn or more (Table 6). The combined potential deal value of these agreements was $47 bn, with an average size of $3.3 bn. By comparison, total deals in 2024 were $10.3 bn with an average deal value of $3.4 bn. Throughout 2025, we observed that deals have expanded to a broader range of therapeutic areas, including cardiovascular and respiratory, as well as continued activity in oncology and obesity. Oncology deals feature new modalities, including bispecifics and radiopharmaceuticals.

With the rising acceptance of China as a source of innovation, deals for its assets are no longer seen as a value play. The country was, until recently, seen as a cost-effective market for fast-follower products, but price was not a core driver of the latest deals. While AstraZeneca has been an early and active participant in China, they noted on the call that they “have done quite a number of deals, but now everyone is going there and the prices are going up.”

AstraZeneca expressed that companies would have to learn “how to compete with them both commercially and in R&D”, anticipating that “some of them will be global companies at some point.” Companies, particularly smaller biotechs, seem to be increasingly looking to the success of Chinese counterparts as a catalyst and model to improve efficiency and productivity of their own R&D processes.

40%
of high-value product deals involve China-originated assets.

$47B
in China-originated deal value

Table 6. Significant China-related transactions this year (upfront payments >$50 mn)

Company	Target/ Lead Asset	Date	Terms	Phase	Therapeutic area
Astellas	Evopoint	5/29/2025	$200mn upfront; total pot'l deal value of $1.5bn	1/2	oncology
AstraZeneca	Jacobio Pharma	12/21/2025	$100 mn upfront; total pot'l deal value of $2.015 bn.	2	oncology
AstraZeneca	Harbour BioMed	3/21/2025	$175 mn upfront; total pot'l deal value of $4.68 bn.	Pre-clin	oncology
AstraZeneca	Syneron Bio	3/21/2025	$75 mn upfront; total pot'l deal value of $3.48 bn.	n/a	immunology
Bristol Myers Squibb	Harbour BioMed	12/19/2025	$90 mn upfront; total pot'l deal value of $1.0 bn.	Pre-clin	immunology; oncology
	Hengrui Pharma	7/28/2025	$500mn upfront; total pot'l deal value of $12.5bn	1	respiratory
Merck	Jiangsu Hengrui Pharmaceuticals	3/25/2025	$200mn upfront; total pot'l deal value of $1.97bn	2	cardiovascular
Novartis	Argo Biopharma	9/3/2025	$160 mn upfront; total pot'l deal value of $5.2 bn.	2	cardiovascular
Novo Nordisk	United Laboratories International Holdings	3/24/2025	$200mn upfront; total pot'l deal value of $2.0bn	2	obesity
Pfizer	Yao Pharma	12/9/2025	$150 mn upfront; total pot'l deal value of $1.93 bn.	1	obesity
Pfizer	3SBio	5/20/2025	$1.25bn upfront; total pot'l deal value of $6.1bn	2	oncology
Regeneron	Jiangsu Hansoh Pharma	6/2/2025	$80mn upfront; total pot'l deal value of $2.0bn	2	obesity
Roche	Innovent	1/1/2025	$80mn upfront; total pot'l deal value of $1.1bn	1	oncology
Takeda	Innovent Biologics	10/21/2025	$1.2 bn.	3	oncology

Product-level Developments and Updates

DISCONTINUATIONS AND TERMINATED PROGRAMS

We tracked 101 discontinuations of pipeline products as companies continued to direct resources towards their most promising programs, with AstraZeneca, Pfizer, GSK, and Roche driving a disproportionate share (Table 7). There were 54 (+17 from 2024) small molecule discontinuations and 36 biologics (-11). Nearly 35% of all discontinuations were in oncology, which is lower than its recent trends and well below the overall 42% representation of cancer drugs in our companies' pipelines. Other categories with the most discontinuations were: infectious disease (16.8%), metabolic and obesity with 14 and immunology (10%). Small molecules made up 53.4% of the discontinuations, with the balance comprised of biologics, vaccines, and radiopharmaceuticals.

This year's discontinuations were overwhelmingly earlier-stage, with 39.3% in phase 1, 42.9% in phase 2 and only 17.9% in phase 3. This early-stage pruning reflects the pipeline prioritization efforts to "fail fast" and terminate less promising assets before they incur the costs of expensive late-stage clinical trials. The industry is shifting toward earlier decision-making and higher efficacy thresholds in their assessments of clinical and commercial value.

A number of companies have deprioritized specific therapeutic areas altogether: AstraZeneca disclosed its plans to step away from neuroscience drug development and focus on its core therapeutic areas in oncology, cardiovascular disease (including obesity), and respiratory disorders.

Cell and gene therapy (CGT) programs have seen attrition in the face of regulatory uncertainty, manufacturing complexity, and challenging commercial dynamics. Pfizer discontinued its hemophilia product Beqvez in February 2025, effectively ending its work in gene therapy. Novo Nordisk and Takeda also pared back CGT modalities as part of their overall pipeline cuts to navigate decelerating and declining revenue bases. Biogen discontinued all its AAV-based gene therapy programs in September 2025, stating that, "In building the New Biogen, we are taking a disciplined approach to capital allocation, directing our resources to pioneer modalities and medicines that have the highest probability of delivering better outcomes for patients."

101
programs discontinued in 2025.

82%
of cuts happened before Phase 3.

35%
of discontinuations in oncology. Lower than pipeline share—cuts are spreading beyond cancer.

Vaccine manufacturers also acknowledge challenges and headwinds in the current environment, although we aren't seeing a sharp pivot away from the space. Currently, there does seem to be more focus on immunizations for adults rather than infant and toddlers – and mRNA vaccine could be more challenging after the FDA initially refused to review Moderna's filing for its flu vaccine. Regulatory uncertainty and politicization are also challenges for some gene therapy candidates.

Table 7. Product discontinuations by therapeutic area and molecule size

Company	Therapeutic area	No. of products	SM:BIO*
Amgen	Immunology, neurology/ CNS	1	0:1
AstraZeneca	CV, infectious disease, metabolic, oncology, neurology/ CNS	14	4:9
Bristol Myers Squibb	Immunology, oncology	3	3:0
Eli Lilly	Immunology, metabolic, oncology, neurology/ CNS	6	4:1
Gilead	Infectious disease, metabolic, oncology	7	7:0
GSK	Hematology, immunology, infectious disease, metabolic, oncology, respiratory	13	4:5
Novartis	Oncology, rheumatology	3	2:0
Novo Nordisk	CV, metabolic, oncology, inflammation, anti-obesity	10	7:3
Pfizer	CV, gastrointestinal, hematology, immunology, infectious disease, metabolic, oncology, inflammation, anti-obesity	22	15:5
Regeneron	Oncology	1	0:1
Roche	Immunology, infectious disease, oncology, ophthalmology, inflammation	13	5:8
Sanofi	Immunology, infectious disease, neurology/ CNS	4	1:1
Takeda	Gastrointestinal, oncology	4	2:2
TOTAL		**101**	**54:36**

*Excludes vaccines, radioligands, and radiopharmaceuticals

Note: Counts are from company disclosures based on materiality thresholds and reflect unique products, not discontinuations at the indication level.

Discussion

Concerns about tariffs, the lack of clarity around the administration's MFN demands and the disruption of stability in leadership and decision-making at FDA and other health agencies created a negative overhang for the drug-development ecosystem throughout much of 2025. As the uncertainties resolved, the later months of the year saw an improvement in sentiment and increased deal flow, with focus shifting to high-level execution as the industry heads into a year of important pipeline catalysts and clinical readouts. Companies postponed discretionary investments whenever possible earlier in the year, but the urgency to replace near-term revenue loss made up for the associated decelerations in R&D investment, contributing to higher growth in R&D and business development in late 2025 and continuing into 2026.

Biopharma shifted from policy-driven hesitation to pipeline-driven momentum towards the end of the year.

The overall number of drugs being developed by companies in our analysis remained stable, but recent activities have driven a trend toward higher-conviction, more differentiated assets. Though companies are exercising tight discipline in their decisions to continue pipeline program investments, most discontinuations this year seem to be for clinical reasons rather than strategic decisions to streamline therapeutic focus. Moreover, most terminations are taking place early in development, before heavier investments required for large phase 3 trials. (Gene therapies are an important exception as commercial and regulatory challenges continue to weigh on this space. Novo Nordisk, Takeda and Pfizer each discontinued programs in 2025 and are not currently developing any gene therapy assets.)

Deal activity shifted toward later-stage, derisked assets, with a number of larger transactions and phase 3 or commercial-stage acquisitions announced in 2025. The increased urgency to fill revenue gaps—combined with the more uncertain regulatory environment—has led to a lower tolerance for risk and a greater willingness to pay premiums for high-conviction assets. Deals for small molecules featured more prominently this year, representing a significant share of deals as well as high-profile pipeline candidates. This was partly driven by a demand for more oral drugs in obesity and cardiometabolic disease – huge potential markets in which availability of an oral option could be a major driver of improved access and market penetration. The industry is also focused on potential combinations for these products, particularly in light of comorbidities in these therapeutic areas.

Between the negative overhang earlier in the year and the urgent need to replace revenues as blockbusters face LOE, IRA was not a significant focus for investors or senior management. Perhaps the most tangible effect of MDPNP is that the separate treatment of fixed-dose combination continues to drive interest, both in the development of small molecule oral products suitable for co-formulation, and for biologic blockbuster drugs co-formulated with hyaluronidase, such as Opdivo, Darzalex and Keytruda. Other trends to follow include how investments in AI will affect R&D productivity, as well as Chinese companies' continuing evolution as both essential sources of innovation and potential competitors.

It's also worth following the evolving alignment between the industry's interests and MFN and Trump's agenda. In PhRMA's recent response to CMMI's proposed demonstration project, GUARD, they "commend[s] the administration for promoting direct purchase programs that enable patients to bypass many of the barriers created by PBMs…" and commends the administration for creating an environment with less complexity that allows them to "circumvent third parties". Companies have also leaned into the administration's pressure on other countries to raise prices, as well as the emerging trend of selling medicines directly to patients. Even though MFN agreements expire in three years, and industry has concerns about codification of the deals, companies will benefit from advances in these areas, which have deep roots in the complexities of the US reimbursement system.

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