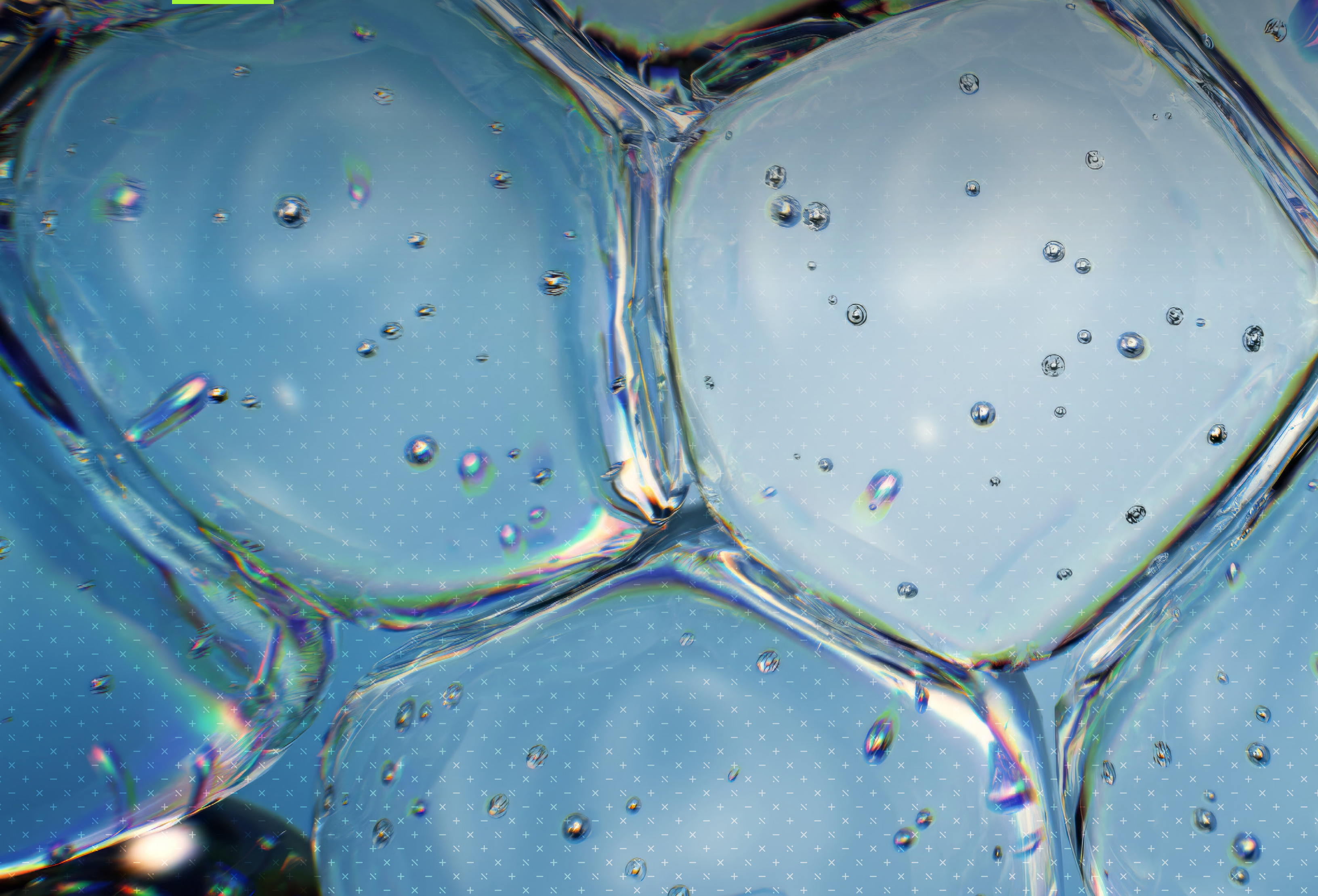
MOSSADAMS

2024

Life Sciences Investment Report

M&A Deals Lead the Way While Digital Health Continues to Boom



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SECTION ONE

Life Sciences Investment Trends Overview

Private investment into United States life sciences companies grew last year—bucking a trend of continued deceleration seen in other industries—and rode this momentum into the first half of 2024. The cumulative sum of venture capital (VC), private equity (PE), and strategic mergers and acquisitions (M&A) activity in the first three quarters of 2024 reached $162.3 billion. More than three-quarters of this sum came from M&A deals, with an additional 16.2% from VC deals and 8.2% from PE deals.

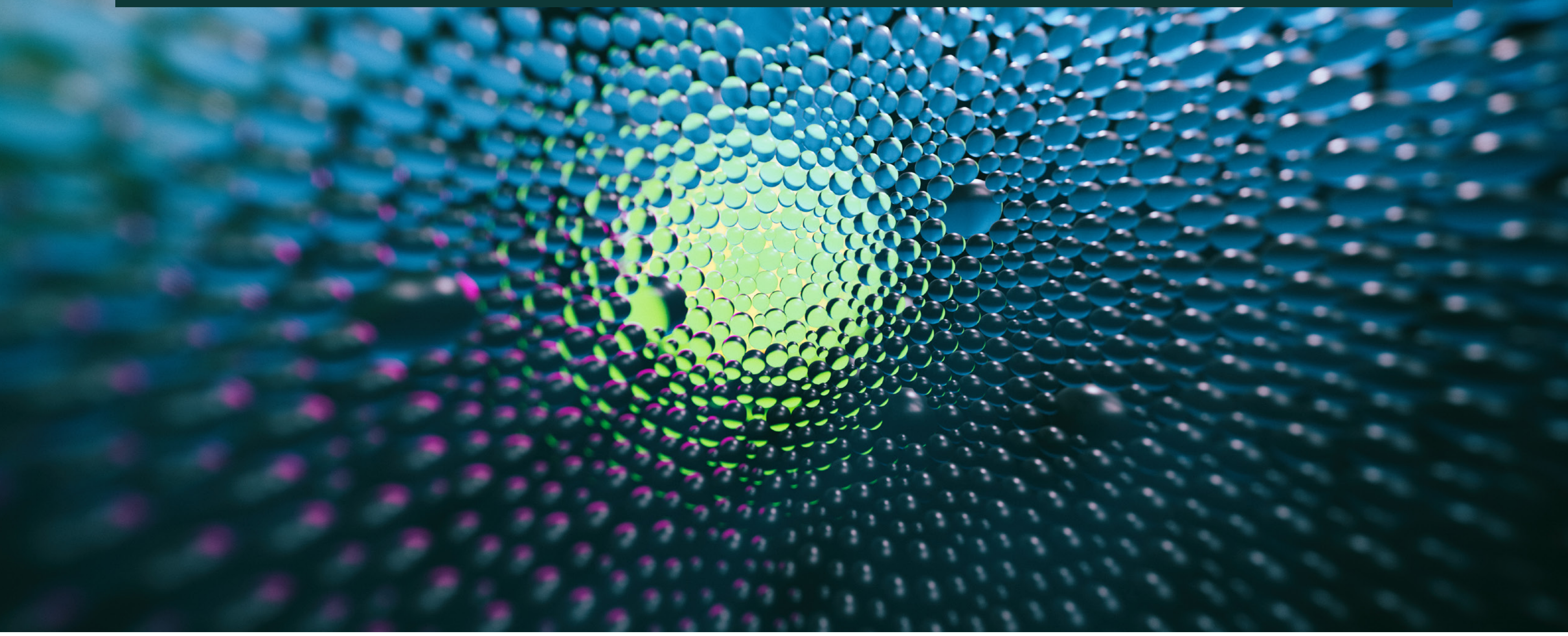
Compared with 2023, VC deals are driving a larger portion of value this year, and the asset class has already outpaced the sum generated at this point last year. PE deals, on the other hand, have taken a step back from life sciences with a 28.5% lower total value compared to the same period in 2023.

Fewer life sciences companies are exiting this year, but those that do have generated a 23.9% larger sum for themselves and investors compared with 2023. For VC exits, acquisitions still account for the majority of value and count. For PE exits, momentum has slowed, but corporate acquisitions have still driven $3 billion in value YTD.

Private investments into the digital health space faced a sharp correction after 2022 but are bolstered by occasional PE megadeals and strategic transactions. VC remains the most robust asset class for the vertical, logging several hundred deals YTD. Outlier deals did not drive any jumps in overall private investment for the first three quarters of 2024, but the more consistent volume of private deals is a positive signal that sustainable growth may be on the horizon.

RICH CROGHAN

Partner
National Practice Leader, Life Sciences Practice



SECTION TWO

Life Sciences Industry Trends

GLP-1 EXPANSION

Potential expansions of GLP-1 use cases in a variety of indications is boosting excitement and growth projections. The smash success of GLP-1 medications in treating obesity broadened the applications of the drug beyond its original use for treating diabetes, and additional uses are now being studied. **Drugs within the GLP-1 class** may lower the risk of heart disease as well as improve blood pressure and cholesterol levels.

Novo Nordisk and Eli Lilly maintain their dominant share of the GLP-1 business, but **new entrants** are eager for a portion of the estimated $200 billion market. The United States' obesity rates and powerful pharmaceutical industry make it a prime market for these endeavors.

PATENT EXPIRATIONS

Morgan Stanley estimates **$183.5 billion in revenue is at risk** through 2030 for pharmaceutical heavyweights due to patent expirations. The report highlights mounting pressure faced by Big Pharma as many portfolio drugs are set to lose exclusivity rights in the next several years, opening the market to generic competitors and biosimilar offerings.

Morgan Stanley noted that, on average, 38% of pharmaceutical revenue for 2024 is derived from products that will lose their patents by the end of 2030. Amgen is reportedly at the greatest risk with 67% of its revenue coming from drugs with patents set to expire, while Vertex Pharmaceuticals faces the lowest risk at just 6% of its revenue.

CONTRACT RESEARCH ORGANIZATION

The **contract research organization (CRO) market continues to grow** as companies outsource costly research and development (R&D) processes in their quest to develop therapeutics and achieve growth. Nova One Advisor reports a $52.2 billion global CRO market as of 2023 that is projected to double in the next 10 years.

CRO services cover a wide swath of operations, including data management, clinical services, patient and site recruitment, preclinical studies, and more. High and rising costs are applying pressure on life sciences company margins and operating capabilities, contributing to vertical disintegration across the industry.

EMERGING POST-CHEVRON ENVIRONMENT

After 40 years, the United States Supreme Court's June 2024 decision to **overturn its Chevron deference doctrine** returned the power to interpret ambiguous statutes passed by Congress from federal agencies back to courts. Organizations, including the National Institutes of Health, the Food and Drug Administration (FDA), and the Centers for Disease Control and Prevention, are among those that could see a shift in their oversight abilities in relation to the life sciences industry.

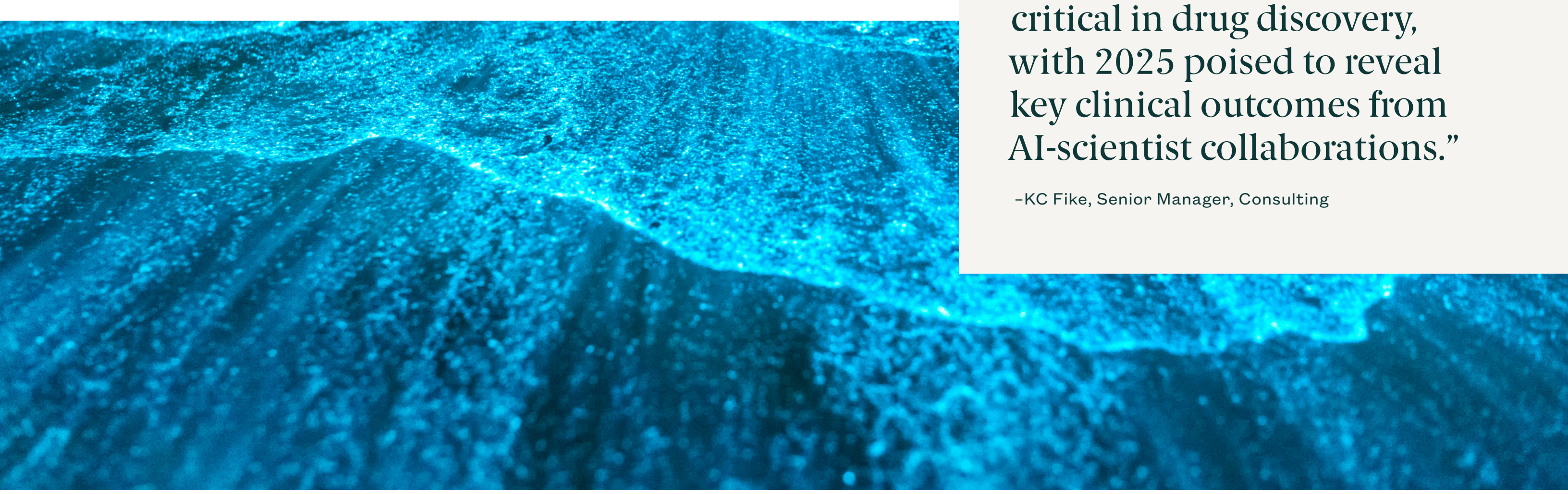
For example, the **FDA is already facing a legal test** of its rule that laboratory developed tests do not need to comply with regulations for medical devices. Full impacts remain to be seen, but the overturning of Chevron could broadly result in a greater oversight and compliance burden on certain subsectors.

ARTIFICIAL INTELLIGENCE IN LIFE SCIENCES

The role of artificial intelligence (AI) in life science ventures is taking shape, showing particular promise in drug discovery. Google DeepMind and Isomorphic Labs launched the latest version of its **AlphaFold AI model** in May 2024, which is trained to predict the structure of proteins, DNA, RNA, and other molecules. It's intended to improve drug design, vaccine discoveries, and cancer treatment.

Further applications of AI in life sciences include the identification of novel compounds, side effect predictions, and better clinical trial design. The implications are vast, and private investments demonstrate an interest in putting these applications to the test.

> "Life Sciences companies embracing LLMs and AI can accelerate complex processes, enhancing research and shortening timelines. AI-driven innovation is increasingly critical in drug discovery, with 2025 poised to reveal key clinical outcomes from AI-scientist collaborations."
>
> –KC Fike, Senior Manager, Consulting

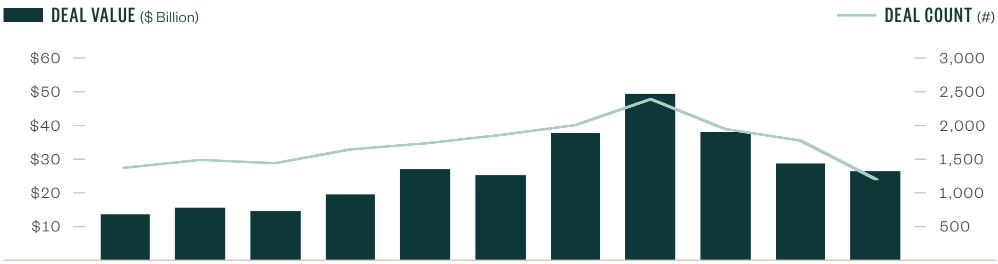


SECTION THREE

Investment & Market Overview

VC INVESTMENT: LATER-STAGE SHIFTS AND EXIT MOMENTUM

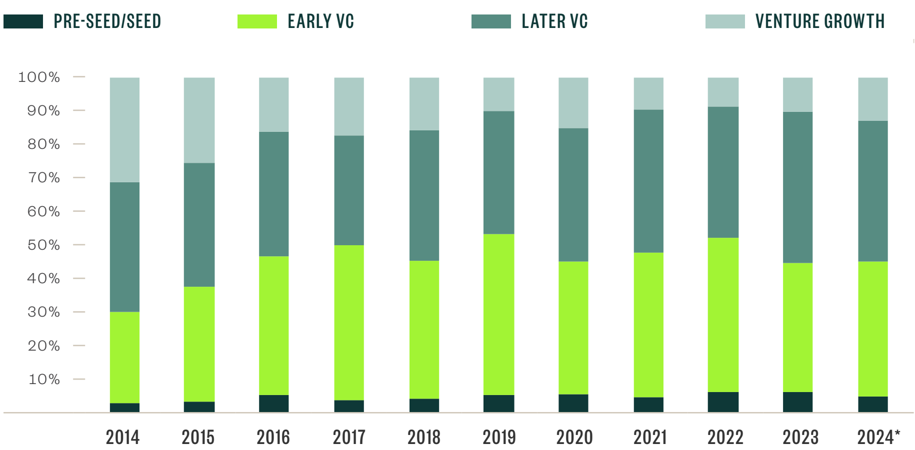
FIGURE 1: US Life Sciences VC Deal Activity



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024*
VALUE	$13.4	$15.5	$14.4	$19.4	$27.0	$25.1	$37.5	$49.3	$37.9	$28.65	$26.26
COUNT	1371	1478	1433	1640	1726	1850	1996	2386	1943	1769	1194

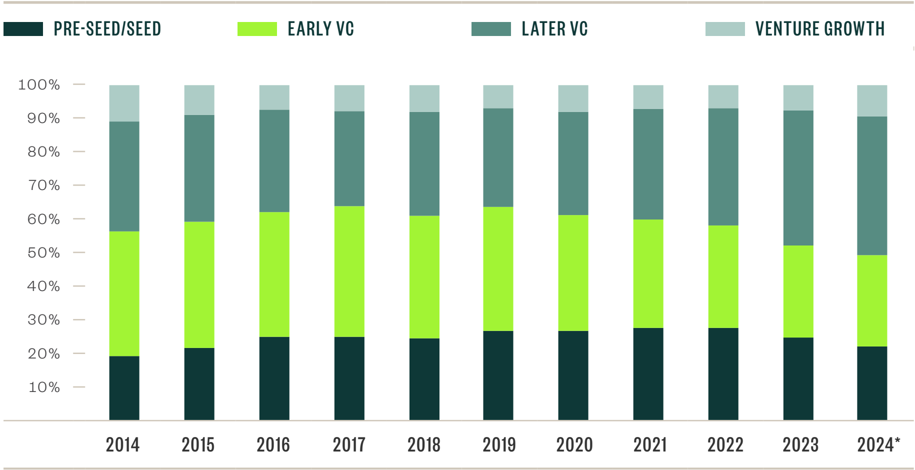
*As of 9/30/2024

FIGURE 2: Share of US Life Sciences VC Deal Value by Stage



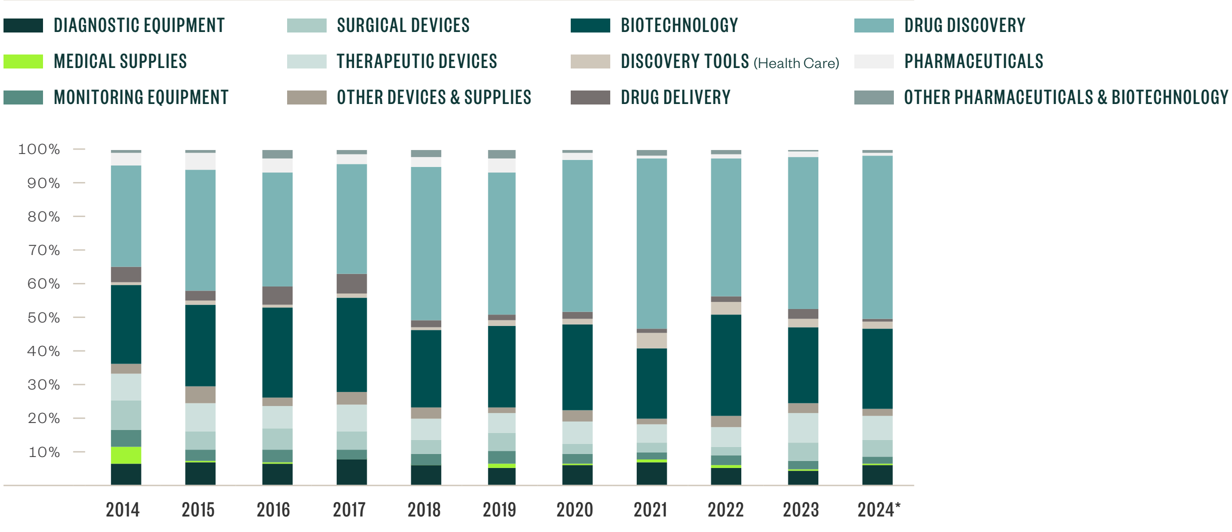
*As of 9/30/2024

FIGURE 3: Share of US Life Sciences VC Deal Count by Stage



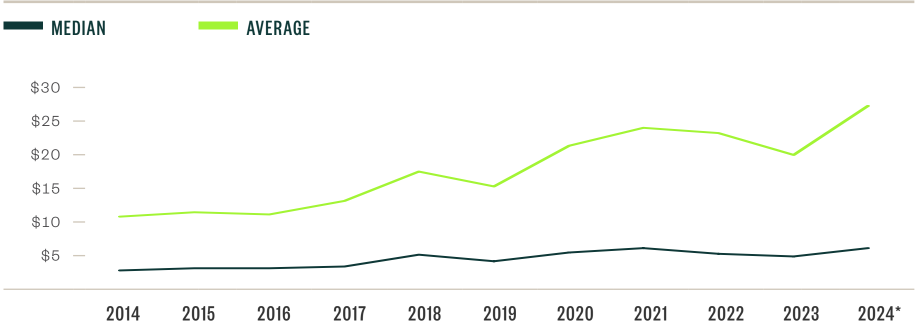
*As of 9/30/2024

FIGURE 4: Share of US Life Sciences VC Deal Value by Subsector



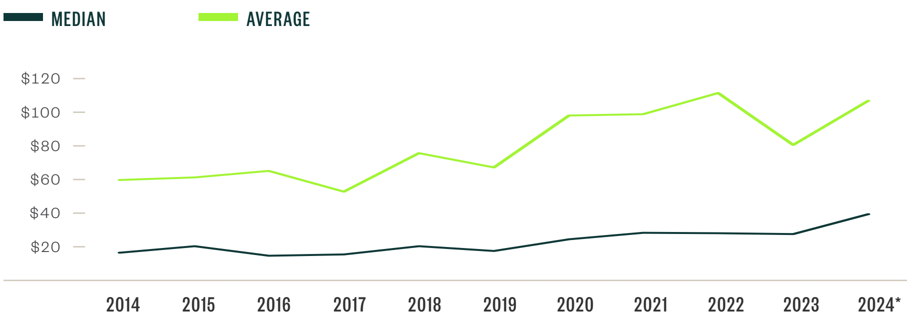
*As of 9/30/2024

FIGURE 5: Median and Average US Life Sciences VC Deal Value ($ Million)



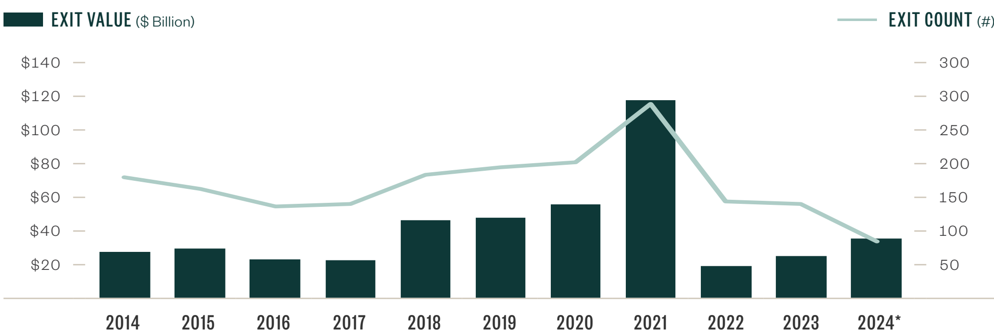
*As of 9/30/2024

FIGURE 6: Median and Average US Life Sciences VC Pre-Money Valuation ($ Million)



*As of 9/30/2024

FIGURE 7: US Life Sciences VC Exit Activity



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024*
VALUE	$27.1	$29.0	$22.3	$21.8	$45.8	$47.2	$55.1	$116.8	$18.4	$24.4	$34.6
COUNT	178	160	135	138	181	193	200	286	142	138	83

*As of 9/30/2024

United States life sciences VC activity showed tenacity through the first three quarters of 2024, exceeding $25 billion in cumulative value. Q2 was the high point of the year thanks to several substantial pharmaceutical transactions, marking the first quarter to exceed $10 billion since Q1 2022.

Investors are showing greater favor for later-stage deployments. The distribution of overall VC deal count across company stages reveals a shift toward more mature companies, with 27.2% of all deals falling under the early-stage VC category and 41.5% in the late-stage VC category. Early-stage deals historically represent a larger category than their later-stage counterpart, but this trend reversed beginning in 2021, and later-stage deals have outnumbered early-stage deals since then at a gradually increasing rate. However, early- and late-stage deals contribute relatively equal cumulative sums of capital due to various megadeals and larger financings on a less frequent basis for some newer companies.

Distinctive opportunities for certain indications or experienced teams may draw in larger check sizes despite a more recent company formation. For example, Xaira Therapeutics topped the list of all VC deals so far this year with a $1 billion Series A for its AI-integrated biotechnology platform. Xaira represents the drug discovery subsector, which vastly outraises most other subsectors and contributed 48.8% of the life science industry's VC deal value YTD, up slightly from 45.5% in 2023. In the second half of the year, Candid

> "With VC funding shifting towards later and more mature companies, earlier-stage life sciences companies can best position themselves for funding by focusing on strong scientific validation, a solid management team and advisory board, and strategic partnerships to enhance credibility and attractiveness to investors."
>
> – Findley Gillespie, Partner, Consulting Services

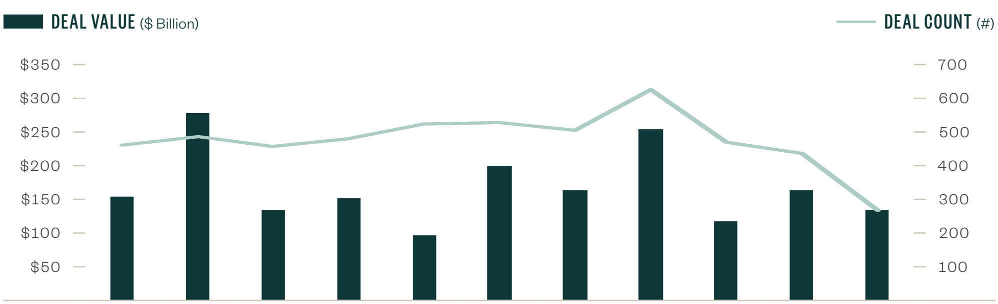
Therapeutics raised a $370 million Series B to target autoimmune therapies. Candid's President and CEO Ken Song, MD previously led RayzeBio from its launch in 2020 through its $357.6 million initial public offering (IPO) in September 2023.

> "Greater consolidation of life sciences companies is likely, due to rising R&D costs, increasing competition, and the need for efficiency. Mergers and acquisitions allow companies to pool resources, achieve economies of scale, and access innovative technologies. Larger companies can better absorb high costs, streamline operations, and expand their product portfolios, making consolidation a strategic move to stay competitive in the industry."
>
> – Mandy Yan, Senior Manager, Assurance Services

Median and average deal sizes in the industry reflect these larger deals in part, rising 25.7% and 36.9% YTD, respectively. Success bias inherent in these data points reflects declining deal counts in recent years, as many companies unable to raise desired capital either wound down operations or opted to bootstrap until conditions improved. However, it is likely that after more than two years in a down market, the longevity of the latter strategy is wearing thin. According to **Fierce Biotech's Layoff Tracker**, 49 different companies announced layoffs in Q3 2024 alone for a variety of reasons including routine restructurings, consolidations, and cash runway extension. Reductions in force following failures to advance through FDA trials or achieve certain R&D milestones remain an unfortunate reality of the pharmaceutical and biotechnology industries, though it appears more companies are evaluating performance to preserve their bottom lines in the present environment.

M&A ACTIVITY: FEWER, LARGER DEALS AFTER LAST YEAR'S TAKE-PRIVATE JUMP

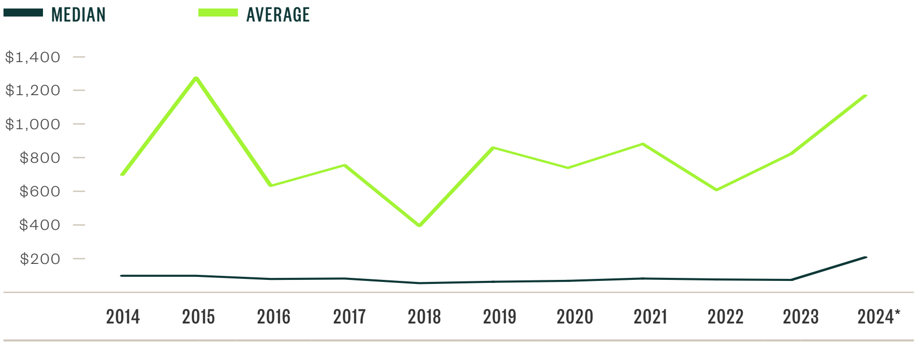
FIGURE 8: US Life Sciences M&A Activity



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024*
VALUE	$153.4	$277.9	$134.3	$152.2	$96.6	$200.1	$163.6	$254.3	$117.4	$163.5	$133.9
COUNT	461	486	458	479	523	528	506	627	470	437	267

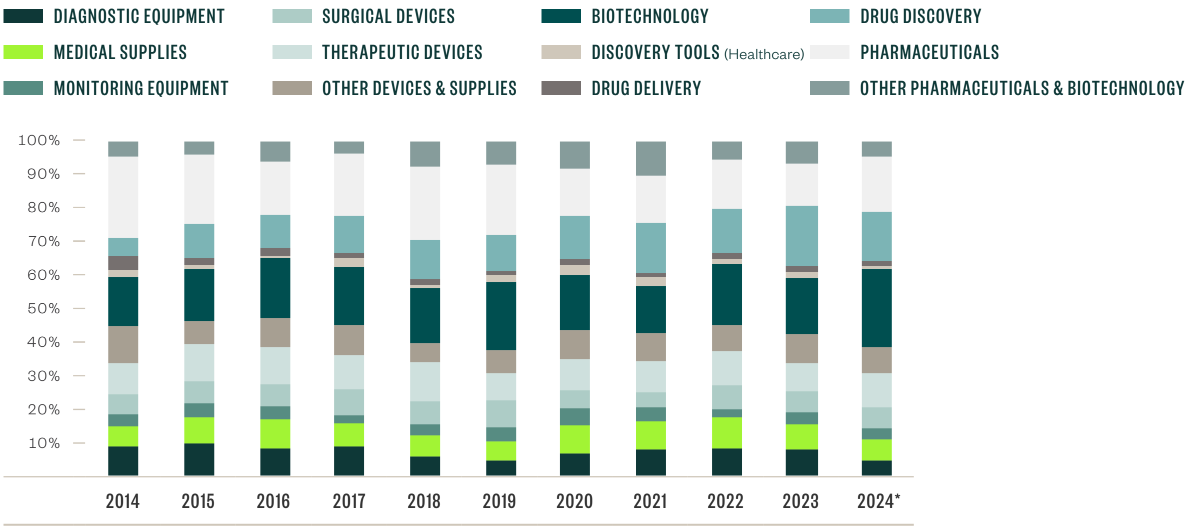
*As of 9/30/2024

FIGURE 9: Median and Average US Life Sciences M&A Deal Value ($ Million)



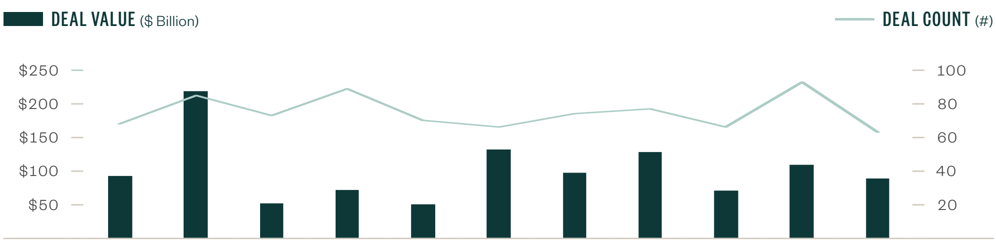
*As of 9/30/2024

FIGURE 10: Share of US Life Sciences M&A Deal Count by Subsector



*As of 9/30/2024

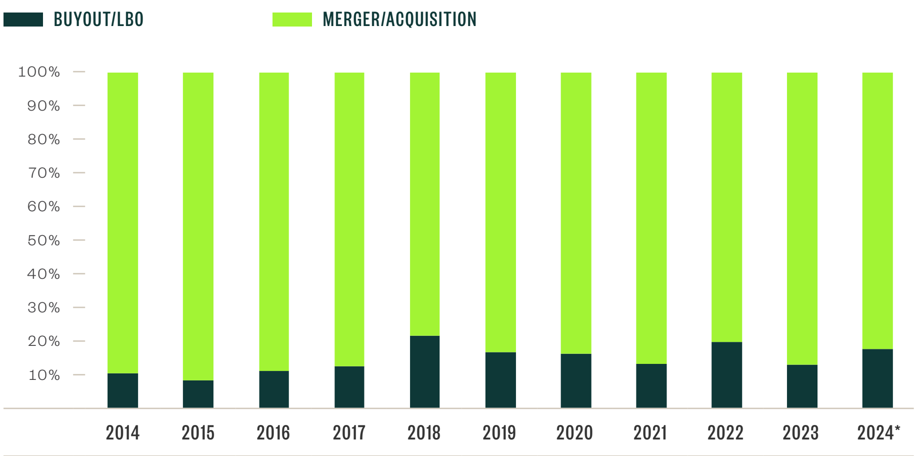
FIGURE 11: US Life Sciences Public-to-Private Deal Activity



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024*
VALUE	$92.2	$218.9	$51.1	$71.3	$49.8	$131.6	$97.0	$127.9	$70.4	$108.9	$88.3
COUNT	68	85	73	89	70	66	74	77	66	93	63

*As of 9/30/2024

FIGURE 12: Share of Acquisitions of Publicly Traded US Life Sciences Companies by Type



*As of 9/30/2024

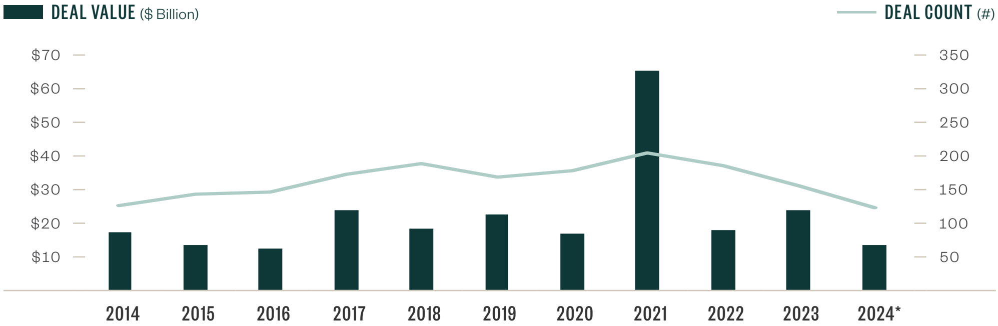
M&A activity in life sciences exceeded $130 billion in the first three quarters of 2024, representing more than 80% of the annual value reached in 2023. This sum indicates continued consolidation and PE sponsor-led interest in the industry, as well as larger individual deals given a lagging deal count. In fact, the average quarterly M&A deal count fell below 100 for the first time in at least a decade, while the average M&A deal size grew more than 40% compared with last year. Anticipated interest rate cuts materialized in September, which may have contributed to a slower clip of deals directly preceding the decision and improves the outlook for greater activity moving forward.

One major catalyst for momentum in the industry's M&A market is the loss of exclusivity rights for drugs, a top concern for pharmaceutical companies, which have an outsized presence in the larger life sciences realm. The revolving door mechanism of drug portfolios requires a constant review of expiring patents and new opportunities to supplement them. Eight of the top 10 M&A deals YTD were pharmaceutical deals, with strong representation from Big Pharma acquirers. Bristol Myers Squibb made the largest purchase so far in 2024 at $13.8 billion for Karuna Therapeutics, which targets schizophrenia and central nervous system disorders. Deeper-pocketed pharma giants are well positioned to bolster their acquisition strategies in the near term, and interest rate reductions add further kindling through lower lending costs.

Another area of focus in the M&A ecosystem is take-privates, in which a public company is bought out by a PE firm or private corporate buyer. The life sciences industry has experienced several take-private cycles over the years, spurred in part by macroeconomic shifts. However, dealmakers enacted more take-privates in 2023 than any year in the past decade at more than 90—a 40.1% rise from 2022. Conditions were prime for these moves, with faltering stock prices casting doubt on the ability of life sciences companies to raise sufficient capital from public investors. Milestone misses and other R&D setbacks were cited as reasons for pharmaceutical take-privates, while stalling growth led other companies to pursue offers as well.

PE INVESTMENT: CORPORATE DIVESTITURES OFFER MORE OPPORTUNITIES FOR FIRMS

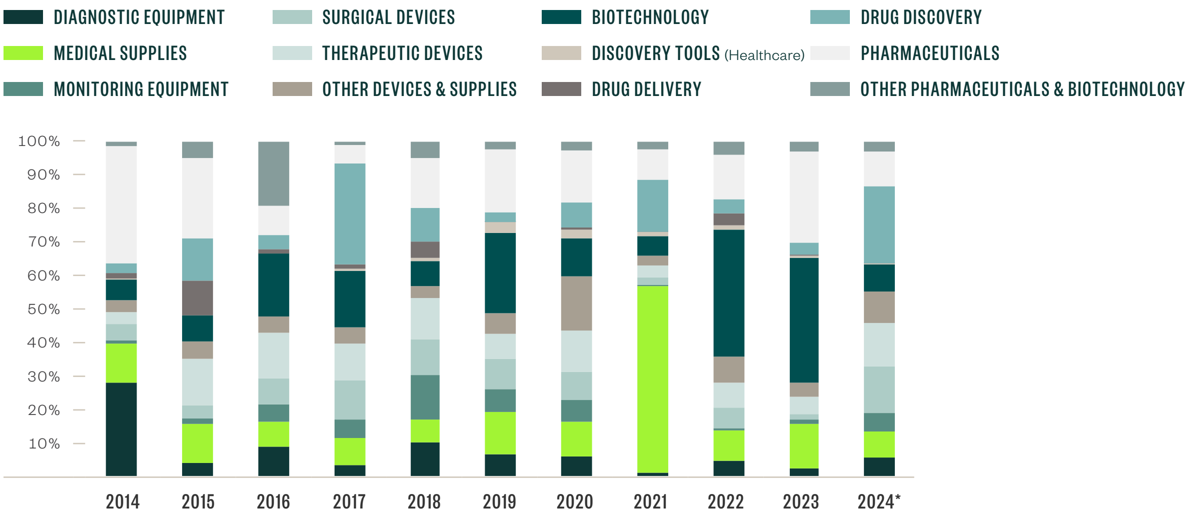
FIGURE 13: US Life Sciences PE Deal Activity



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024*
VALUE	$17.2	$13.5	$12.3	$23.7	$18.2	$22.6	$16.8	$65.3	$17.8	$23.8	$13.3
COUNT	126	143	146	172	188	168	178	204	185	156	123

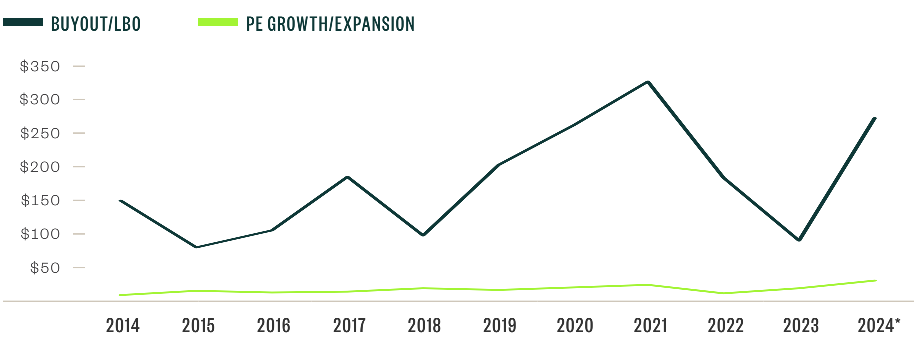
*As of 9/30/2024

FIGURE 14: Share of US Life Sciences PE Deal Value by Subsector



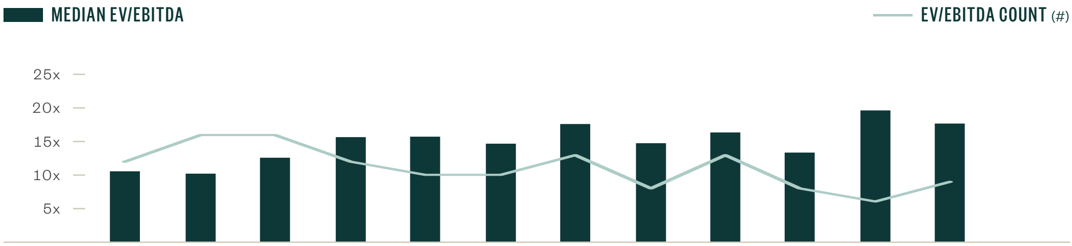
*As of 9/30/2024

FIGURE 15: Median and Average US Life Sciences PE Deal Value ($ Million) by Type



*As of 9/30/2024

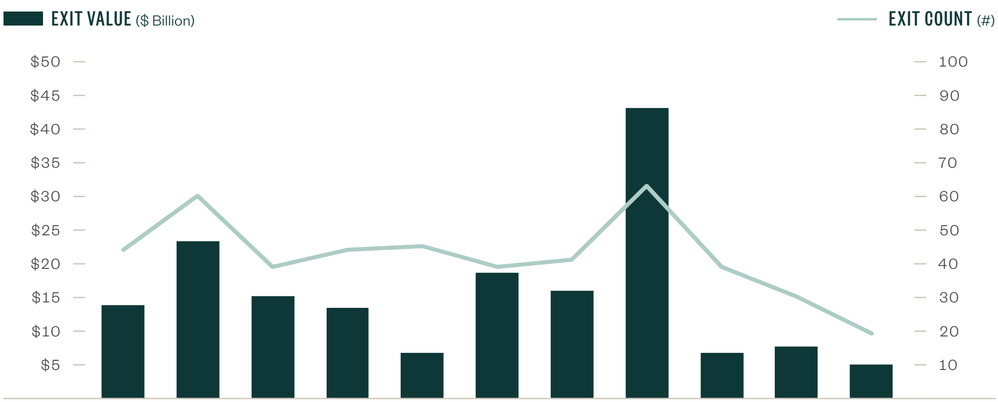
FIGURE 16: Median North America and Europe Life Sciences PE EV/EBITDA Multiples



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024*	TTM
MEDIAN EV	10.6X	10.2X	12.6X	15.7X	15.7X	14.7X	17.7X	14.7X	16.4X	13.3X	19.7X	17.7X
COUNT	12	16	16	12	10	10	13	8	13	8	6	9

*As of 9/30/2024

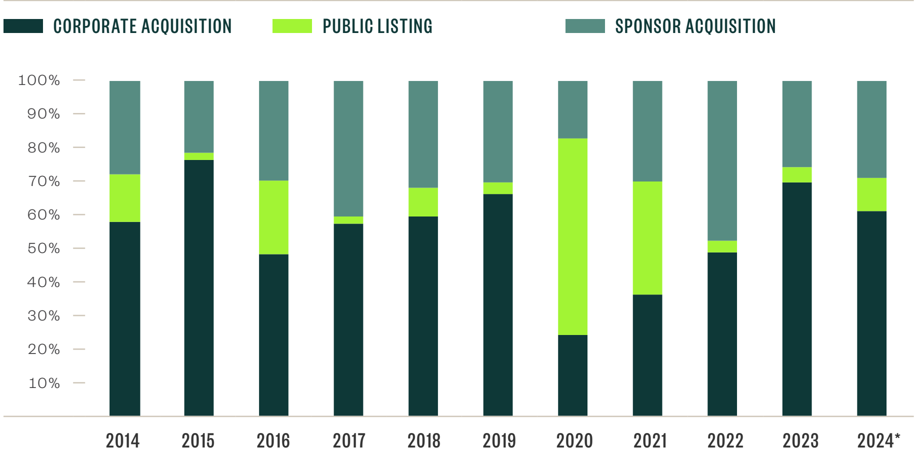
FIGURE 17: US Life Sciences PE Exit Activity



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024*
VALUE	$13.7	$23.3	$15.1	$13.3	$6.7	$18.6	$16.0	$43.1	$6.7	$7.6	$5.0
COUNT	44	60	39	44	45	39	41	63	39	30	19

*As of 9/30/2024

FIGURE 18: Share of US Life Sciences PE Exit Value by Type



*As of 9/30/2024

Compared to VC deals, PE's smaller life sciences footprint is spread across a much more varied mix of subsectors. Drug discovery is still the largest YTD in terms of total value, generating $3.1 billion, but six other subsectors contributed more than $1 billion each in the same period. Surgical devices and therapeutic devices ranked second and third for total value, with $1.9 billion and $1.7 billion, respectively. YTD activity demonstrates a more even split between pharma and device-related plays.

PE deals are concentrated within the bounds of the middle market—$25 million to $1 billion)—with just one deal so far this year exceeding $1 billion. The industry's median deal size has fluctuated wildly over the past decade, driven in part by a low number of deals and price ranges driven up by competition and broader valuation trends, as seen in 2021. The median buyout size descended by more than 70% between 2021 and 2023 but proceeded to double again by Q3 2024. PE growth/expansion deals, in which PE sponsors mimic VC investors by acquiring minority stakes in a business, experienced a quicker recovery in median deal size, rising by nearly 40% in 2023 and an additional 39.1% as of Q3 2024.

The two largest PE deals this year were the result of corporate divestitures, representing an era of spin-offs as corporations look to off-load underperforming or noncore business units and buyers execute on strategic additions at relatively low prices. Viatris sold its over-the-counter drug business to French pharmaceutical lab Coopération Pharmaceutique Française for $2.2 billion in July, and Ecolab's global surgical solutions business unit was acquired by Medline alongside PE sponsors for $950 million in August. The transaction was the fourth add-on acquisition completed by Medline in a 12-month period. The three other purchases represent a multifaceted platform build-out, including a surgical management software platform, a managed care product distributor, and a medical supplies company.

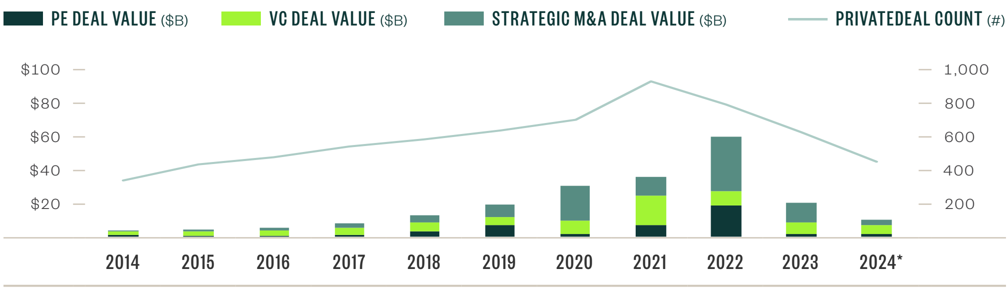
Corporate acquisitions accounted for a growing share of overall PE exit value in life sciences between 2020 and 2023. So far in 2024, this category still accounts for twice as much value as sponsor acquisitions, but its share of cumulative value declined by more than 8%. As public listings become a more viable option for more companies, growth in the market for secondary acquisitions by other PE sponsors may decelerate, while corporate acquisitions will likely remain a staple exit path for PE-backed targets.

> "Life sciences companies were greatly impacted by the research and experimentation expense capitalization as a product of Trump's first term. Although that same administration is returning, we are seeing optimism that capitalization will be reassessed with the administration's greater emphasis on the campaign trail promoting domestic activity."
>
> – Christa Laughland, Senior Manager, Tax Services

SECTION FOUR

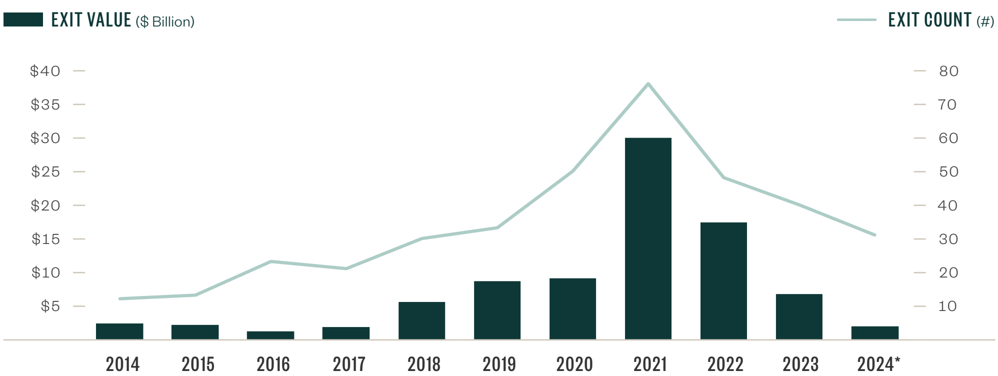
Spotlight: VC Builds Momentum in Digital Health

FIGURE 19: US Digital Health Private Investment Deal Activity



*As of 9/30/2024

FIGURE 20: US Digital Health Private Investment Exit Activity



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024*
VALUE	$2.3	$2.1	$1.1	$1.8	$5.5	$8.6	$9.0	$29.9	$17.4	$6.6	$1.9
COUNT	12	13	23	21	30	33	50	76	48	40	31

*As of 9/30/2024

Last year's edition of this report, **Life Sciences Industry Market and Transaction Trends Update**, examined global investment into digital health capabilities, which had begun to slow in terms of both deals and exits. Private investments into the digital health space faced a sharp correction after 2022 but were bolstered by occasional PE megadeals and strategic transactions. However, VC remains the most robust asset class for the vertical, logging several hundred deals so far this year. VC firms have invested an additional $5.5 billion in the United States YTD with a higher average quarterly deal value compared with last year.

Across the board, VC activity appears to have bottomed out and larger checks continue to flow for well-positioned players. Digital health is no exception, and if momentum continues, 2024 could be a turning point for growth after two years of consecutive declines. Outlier deals didn't drive any jumps in overall private investment for the first three quarters of 2024, but the more consistent volume of private deals is a positive signal of sustainable growth.

Digital health embodies the latest phase in the evolution of patient care. Enterprise solutions are urgently needed to address operational strain faced by healthcare companies, and demand is rising for personalized direct-to-consumer platforms that offer therapy, prescriptions, and other telehealth services. Investing in digital health offerings signals that investors continue to perceive a strong value proposition in these areas despite them being overshadowed in the broader scope of life sciences by the size of the pharmaceutical and biotechnology segments.

In 2023, cumulative exit value in the digital health space experienced a sharp downward trend, but VC exits have maintained a steady pace since then with as many transactions logged in the first three quarters of 2024 compared with the same period in 2023. Three digital health exits—all acquisitions—surpassed the $100 million mark YTD, including:

- Edwards Lifesciences' purchase of Endotronix for $675.0 million
- LetsGetChecked's acquisition of Truepill for $525.0 million
- Sonic Healthcare's procurement of PathologyWatch for $150.0 million

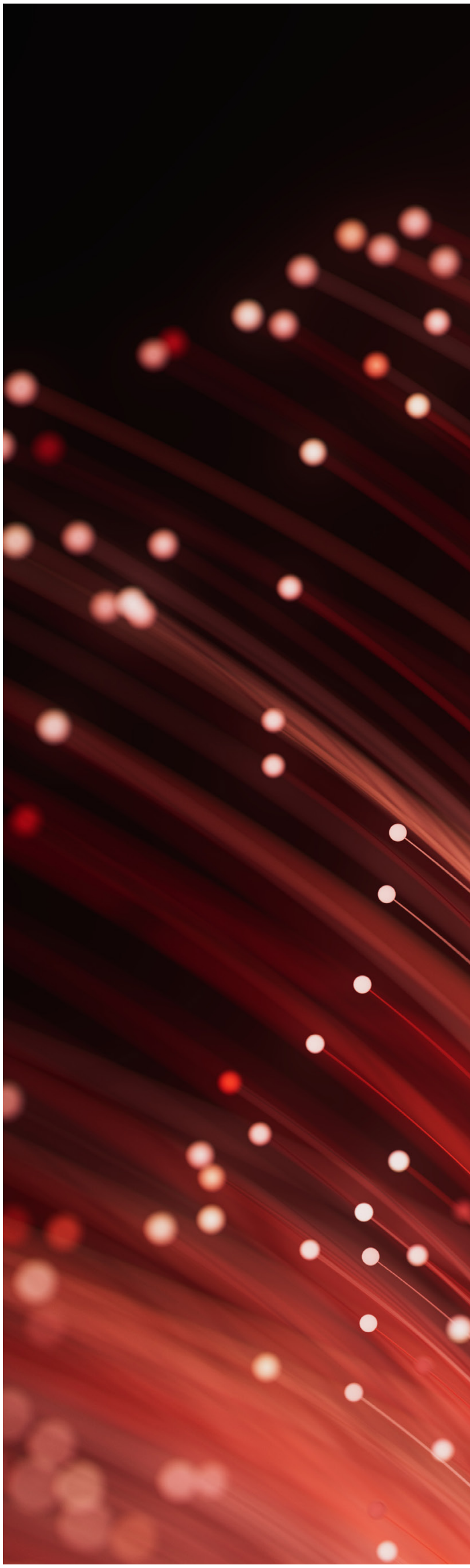
Similar strategic financings will likely continue driving the majority of exit value for the time being as larger platforms execute growth strategies while IPO and other public listing candidates see a longer path under private ownership.

SECTION FIVE

Methodology

Standard PitchBook methodology regarding venture transactions and venture-backed exits was used for all datasets, and similarly for PE or other private investment types. Full details can be found **here**.

Life sciences is defined in this report using the combination of PitchBook's dedicated industry codes of pharmaceuticals & biotechnology and healthcare devices & supplies. Digital health is defined using PitchBook's dedicated vertical.



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