



Global Healthcare Private Equity and M&A Report 2022

How winning investors navigate a time of discontinuity and promote innovation.

Acknowledgments

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Welcome Letter: Sizing Up the Great Adaptation

Healthcare's resilience attracts both more capital and creative new forms of capital.

It was a wild year for healthcare investors, with the central drama being—no surprise to anyone—the continued assault of Covid-19. The pandemic has shaken virtually every industry, none more than healthcare. Yet \$151 billion of private equity capital surged into healthcare globally in 2021, more than double the prior year, and the number of deals soared 36% to 515.

Now Russia's invasion of Ukraine has dialed up uncertainty around supply chains, energy, and other economic factors, as well as human suffering and fear. Russia itself is a meaningful market for pharmaceutical and medical technology products. And the knock-on effect of higher energy prices in Europe and elsewhere will hit the healthcare manufacturing base, which is already dealing with supply-side inflation. But there's no way to know how these global disruptions will play out.

Returning to the past year in healthcare investing, did the industry post these records despite Covid-19 or because of it? It's a bit of both.

During 2020, the coronavirus injected a huge level of uncertainty and disruption into healthcare markets. Plenty of buyouts still closed, though, and many wondered if the torrid pace could continue. It certainly did in 2021. Now Covid-19 is starting to shift from pandemic to endemic, meaning the system will eventually reach a stable state. Vaccines and antivirals could progressively dampen the anxiety and economic disruption caused by new variants. But no one knows what the stable rates of infection will be, and endemic Covid-19 could still take a significant toll on health and mobility.

Regardless of where the endemic settles, consider how Covid-19 has already changed industry trends in ways that open broad opportunities for investors.

Covid-19 greatly accelerated the adoption of virtual interactions between patients and healthcare staff. Companies rushed to digitalize many other manual processes as well, from drug clinical trials to medical records to revenue cycle management. Fallout from the disease exposed the creakiness of older IT systems, causing many providers and payers to realize they needed top-notch vendors to help upgrade their systems. And the widespread shutdowns exposed vulnerabilities in the medical supply chain, so that the previously below-the-radar distribution of medical products suddenly drew outside attention. Case in point: the \$34 billion deal for Medline, a company that turned out to be vital for delivering medical products in certain countries.

Still, the pandemic is just part of a complex story woven from multiple threads. It's worth remembering that healthcare deal internal rates of return have outperformed the broader private equity market by a median 6 percentage points over the past decade. High returns, along with the industry's recession resilience and demographic tailwinds, such as aging populations and the rise of chronic diseases in

many countries, are enticing new sources of capital and intensifying competition for deals. Sovereign wealth funds, infrastructure funds, hedge funds, and nonhealthcare buyout funds all are scouting private deals in healthcare.

How these investors deploy their capital also is taking shape in new forms. We've seen the rise of consortiums, including some that include partnerships with corporate buyers, the burgeoning of life sciences fund vehicles, and more growth-equity deals. Investors are seeking creative ways to secure returns in a more competitive landscape.

In our report last year, we anticipated a strong 2021 for healthcare private equity as a backlog of large deals cleared. We identified three big areas for capital to be deployed, which each played out in spades.

- Infrastructure investments in healthcare IT to fix interoperability and data flow limitations, capped by the \$17 billion Athenahealth deal.
- Value-based care to unite care provision and financing under one roof, helping companies to deliver better health outcomes while containing costs.
- Technologies that accelerate drug development from preclinical discovery to postapproval market entry.

In our 11th annual report, you'll find detailed analysis of other major trends sweeping through healthcare investing, including these:

- **The consumerization of care.** People want a better experience and a more active role in managing their own health with innovative products, including mobile apps and smart devices.
- **Digital solutions that improve operational efficiency.** Solutions that digitalize the supply chain or leverage data to improve revenue cycle management attracted big investments.
- **A willingness to take on development risk.** More investors confident in their scientific expertise placed bets on cutting-edge biopharma and life sciences technologies.
- **Large European biopharma and life sciences transactions.** Europe saw more biopharma deal value than any other region.
- **An even higher baseline for deals in Asia-Pacific.** Investor confidence stems partly from positive consumer behavior shifts and the government regulation and incentives that fuel the growth of local medtech and biopharma firms.

Looking ahead, the transition to endemic Covid-19 will no doubt create new pockets of opportunity for private equity investors. Other avenues to value should also thrive, including new integrated care models, digital tools that use data and artificial intelligence to streamline operations, technology to build resiliency into supply chains, and cutting-edge drug therapies.

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Assuming healthcare returns continue to outpace those in other industries, new capital will continue to migrate to the space and will likely drive multiples even higher. How will private equity sponsors create value in this environment?

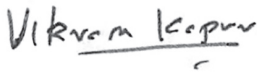
Everyone chasing similar themes raises the bar for careful asset selection and ingenious angles to get deals done. Diligence, in turn, will have to push on several fronts. Investors should estimate the Covid-19 effect—and perhaps the Ukraine conflict’s effect—on each target company and ensure that the value creation plan can flex quickly as circumstances change. They should continue to concentrate on revenue growth as a key ingredient of value, while weighing the open question of whether operating margin improvements will play a larger role in the next vintage of investments. Preparation combined with resilience will allow the best healthcare investors to thrive in volatile times.



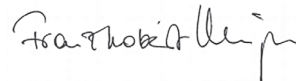
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Healthcare Private Equity Market 2021: The Year in Review

The industry roared back after a pandemic-induced lull in 2020.

At a Glance

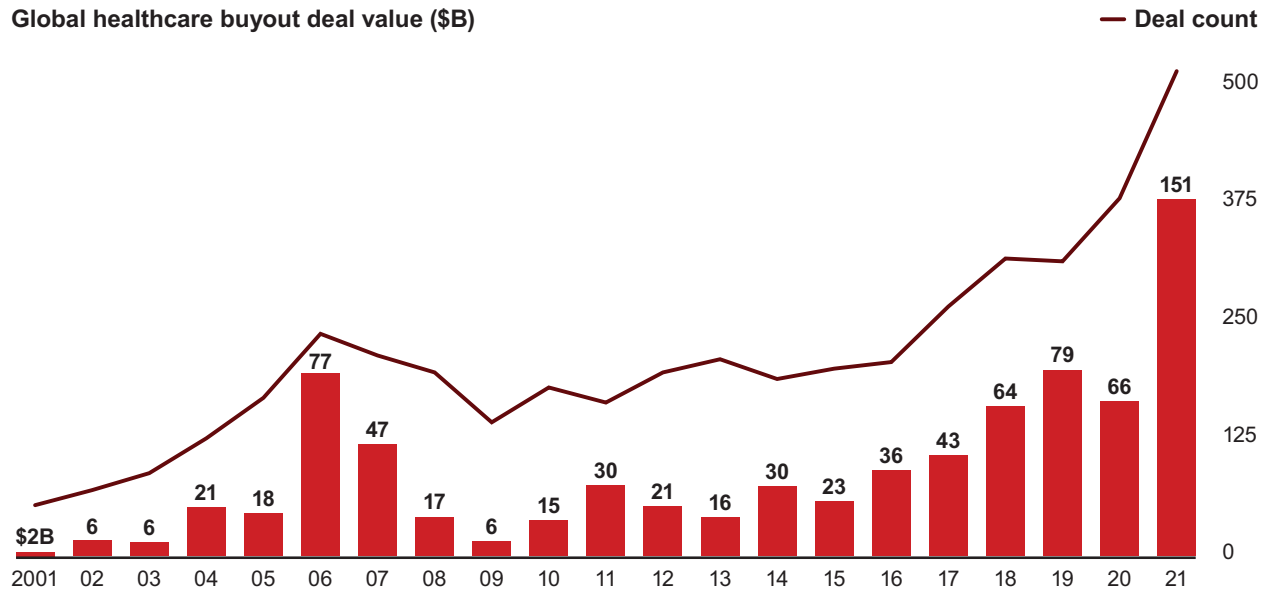
- ▶ Healthcare private equity posted a record year for deal volume and disclosed value, with brisk activity across regions and sectors.
- ▶ Megadeals returned, led by the Medline and Athenahealth transactions.
- ▶ Competition for high-quality assets intensified as more infrastructure funds, growth-equity funds, and other new sources of capital trained their sights on healthcare assets.
- ▶ Healthcare companies benefited from structural trends such as an aging population, the increased incidence of chronic illness, rising income levels, and digital innovations in treatment and operations.

In the second year of Covid-19, healthcare private equity activity showed remarkable resilience to the widespread disruption, posting a record year for both deal volume and disclosed value. This stemmed partly from a pandemic-induced backlog of parked deals, as well as the revival of megadeals headlined by the \$34 billion Medline deal and the \$17 billion acquisition of Athenahealth.

The number of deals rose 36% to 515, up from 380 the prior year. Total disclosed value more than doubled to \$151 billion from \$66 billion (see *Figure 1*). The average disclosed deal value soared 134%, mainly because of 5 buyouts greater than \$5 billion, compared with just 1 the year earlier.

Moreover, returns for the healthcare sector have remained strong, and valuations reached record highs (see “Healthcare Private Equity Deal Returns: Look to Revenues and Multiples”).

Figure 1: Healthcare private equity rebounded to a banner year



Notes: Dollar numbers are rounded; excludes spin-offs, add-ons, loan-to-own transactions, and acquisitions of bankrupt assets; numbers based on announcement data; includes announced deals that are completed or pending, with data subject to change; deal value doesn't account for deals with undisclosed values; total buyout deal values updated based on Dealogic 2021 sponsor classifications
Sources: Dealogic; AVCJ; Bain analysis

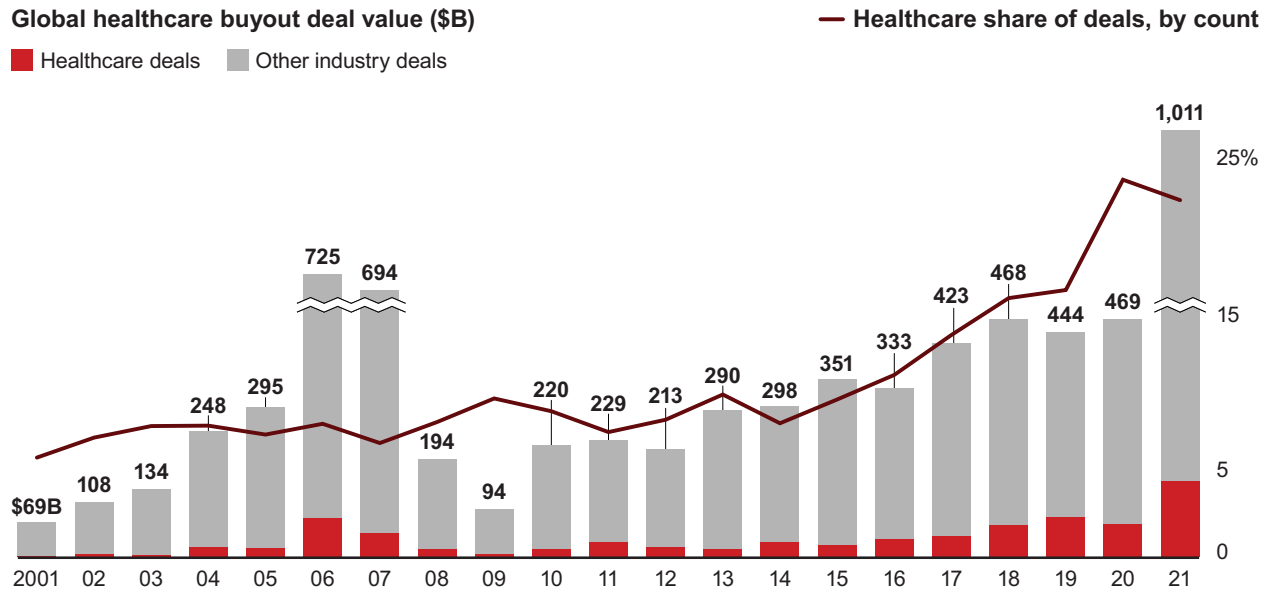
As in 2020, the healthcare provider and biopharma sectors (excluding life sciences) were the most active in 2021. Specialty providers garnered particular attention, having benefited from a rebound in patient volumes for elective procedures.

From a regional perspective, the number of deals over \$1 billion almost doubled in Europe during 2021. The Asia-Pacific region, meanwhile, maintained a strong pace after a torrid 2020, with both deal volume and disclosed value increasing.

Healthcare’s pace was similar to global private equity more broadly, which also recovered in 2021. Transactions across all industries increased to 2,277 in 2021, up from 1,586 the prior year, while disclosed deal value more than doubled to \$1.011 trillion from \$469 billion in 2020 (see Figure 2). As a result, the healthcare sector’s deal volume as a share of total industry deal volume dipped slightly to 23% in 2021 from 24% the prior year. But healthcare’s share of disclosed value nudged higher to 15% of all value from 14%, as many large healthcare deals closed (see “Now Playing: The Return of the Megadeal.”)

In North America, uncertainty over patient volumes and profit margins reduced investors’ appetite for risk for several quarters in 2020, particularly for larger assets. But in 2021, the average deal size more than doubled to \$1.5 billion.

Figure 2: All industries and healthcare set buyout records in 2021



Notes: Excludes spin-offs, add-ons, loan-to-own transactions, and acquisitions of bankrupt assets; numbers based on announcement data; includes announced deals that are completed or pending, with data subject to change; deal value doesn't account for deals with undisclosed values; total buyout deal values updated based on Dealogic 2021 sponsor classifications
Sources: Dealogic; AVCJ; Bain analysis

By 2021, investors once again rallied to find pockets of value and gain confidence in assets focused on the detection and treatment of Covid-19 variants, as well as companies in sectors such as pharma services that can ameliorate the downstream consequences of the pandemic (see “Covid-19 Fallout: Investing to Handle Pandemics Present and Future”).

Increased confidence in the market translated into a greater willingness to pull the trigger on large healthcare deals after a lull in 2020, when the top 10 deals accounted for just 43% of total disclosed value, and only one transaction exceeded \$5 billion (see Figure 3). In 2021, as investors were flush with capital, the average transaction size worldwide rose to \$695 million, driven up by deals over \$1 billion, well north of the previous year’s average \$296 million.

As the Covid-19 overhang receded and healthcare looked increasingly attractive, competition for high-quality assets grew fierce. New sources of capital trained their sights on the industry. These included infrastructure funds, as well as more and larger growth-equity and so-called crossover funds (see “Growth Equity Blossoms in Emerging Tech-Related Healthcare Firms”). Competition looks set to intensify following the record number of healthcare-focused funds initiated in 2021, 358, and total capital raised, roughly \$93 billion (see Figure 4).

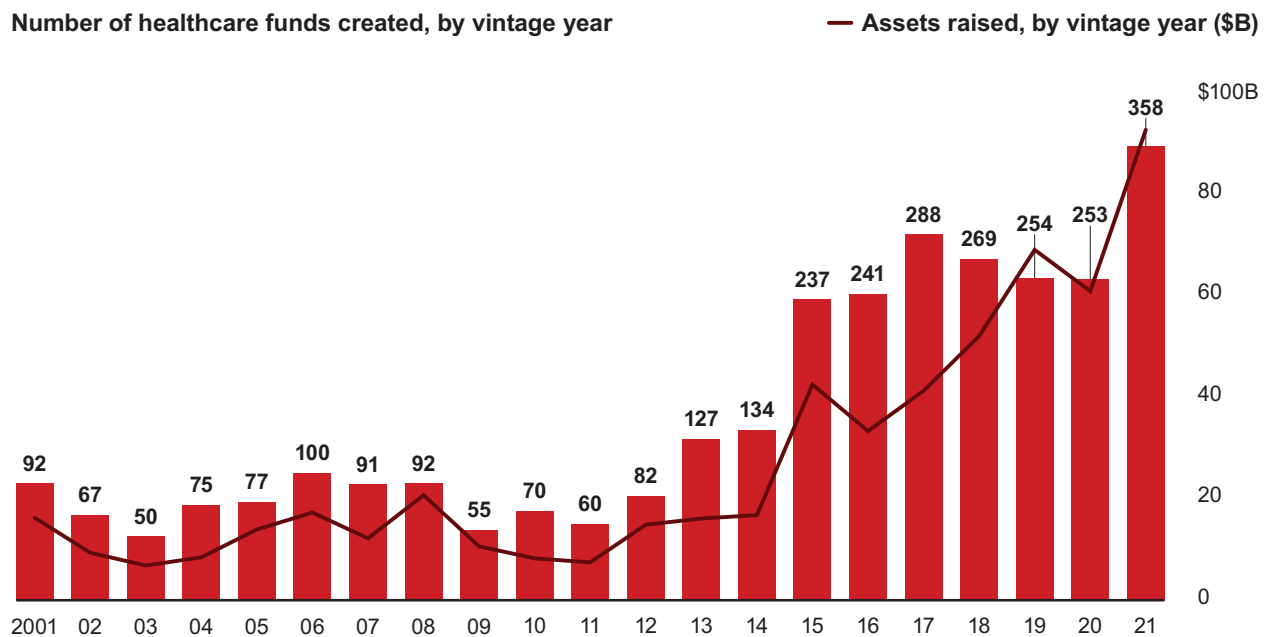
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Figure 3: The 10 largest announced deals in 2021 accounted for more than half of disclosed value

Target	Target's region	Acquirers	Acquirers' region	Sector	Deal value (\$B)
Medline Industries	North America	Blackstone; Carlyle; Hellman & Friedman; GIC	North America	Medtech	\$34.0B
Athenahealth	North America	Bain Capital; Hellman & Friedman	North America	Provider	17
Parexel International	North America	EQT; Goldman Sachs	North America	Biopharma	8.5
Inovalon Holdings	North America	Nordic Capital; Insight Venture Management; 22C Capital	North America	Payer	7.3
Cerba HealthCare	Europe	EQT; PSP Investments; existing management, Bpifrance	Europe	Life sciences	5.3
Independent Vetcare	Europe	Nestlé; Silver Lake Group	Europe	Provider	4.2
ExamWorks	North America	CVC	North America	Payer	4
UDG Healthcare	Europe	Clayton, Dubilier & Rice	Europe	Biopharma	3.8
HMS Holdings	North America	Veritas	North America	Payer	3.3
Affordable Care	North America	Harvest Partners	North America	Provider	2.7
Total top 10 deal value					90.1
Total healthcare PE buyout deal value					151

Notes: Sums may not equal the total due to rounding; includes announced deals that are completed or pending, with data subject to change; deal values inclusive of net debt and quoted at the time of announcement; deal values are approximate and based on information from press releases, news articles, Dealogic, or AVCJ; dollar amounts for Independent Vetcare, ExamWorks, and Affordable Care reflect partial asset deal value
Sources: Dealogic; AVCJ; Bain analysis

Figure 4: The number and size of healthcare-focused private equity funds has grown dramatically in recent years



Source: Preqin

The year also brought a record number of initial public offerings and special-purpose acquisition companies, or blank-check companies, which effectively accelerated the IPOs of several healthcare assets. Corporate acquirers were similarly acquisitive, with volumes rising to 3,205 from 2,766 in 2020, while disclosed value climbed 44% to \$438 billion from \$305 billion in the prior year.

Finally, several structural trends continued to benefit healthcare companies. An aging population, the rising incidence of chronic illness, rising income levels and healthcare access in emerging markets, and digital innovations in treatment and operational processes combined to boost underlying demand for an array of healthcare goods and services.

Pausing in 2020 was a natural reaction by healthcare investors to a once-in-a-generation crisis. Returning to the field in 2021 also made sense, given the resilience of the industry and the pace of innovation in nearly every sector. Amid the turmoil of the continuing pandemic, investors kept their cool and confirmed their confidence in the industry's long-term vigor.



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Hot Topics

Covid-19 Fallout: Investing to Handle Pandemics Present and Future

Healthcare companies are responding to changes wrought by the coronavirus and gearing up to anticipate future outbreaks.

At a Glance

- ▶ The pandemic roiled every healthcare sector, creating a strong concentration of investment opportunities in companies directly involved in detecting, containing, and treating the virus.
- ▶ Covid-19 also shifted customer preferences, upset supply chains, and prompted new regulation, catalyzing an explosion of investment in home and digital care, staffing solutions, and preparing for the next pandemic.
- ▶ With endemic Covid-19 looming in the future, companies that rebuild a new normal for healthcare will be rewarded.

In a seemingly endless second year, the Covid-19 virus and its variants continued to roil healthcare systems globally. As governments, nonprofits, and for-profit companies marshaled their resources, the pandemic created new opportunities for investors in two broad categories: companies directly involved in detecting, containing, and treating the virus, and companies in other healthcare subsectors transformed by the pandemic.

The first category mainly consists of companies in medtech, biopharma, and life sciences tools. Medtech companies that excel in supply chain resilience for essential medical supplies and equipment were the subject of major deals. Notably, Medline, which has leveraged its end-to-end control of the value chain to reliably deliver personal protective equipment to health systems, received investment from Blackstone, Carlyle, Hellman & Friedman, GIC, and ADIA in a deal valued at \$34 billion.

Pharma services companies that have accelerated Covid-19 therapeutic development also attracted large private investments. For example, EQT and Goldman Sachs acquired Parexel, a contract research organization, for \$8.5 billion.

Companies enabling widespread Covid-19 testing enjoyed a surge in investor interest. For instance, EQT purchased a majority stake in Cerba HealthCare, a French medical laboratory service company, from Partners Group for \$5.3 billion. And Unilabs, a leading European diagnostic services provider, was acquired by A.P. Moller Holding from Apax Partners.

Several growth-equity investments also flowed to companies developing Covid-19 therapeutics. For example, Abogen in China raised \$700 million to advance its mRNA vaccine in a funding round led by Temasek. Revelation Therapeutics, a biotech company developing antivirals for respiratory infections, went public through a merger with Petra Acquisition. Because a prolonged endemic scenario would reinforce demand for many Covid-19-related assets, investment opportunities in this area look set to proliferate.

Besides those companies directly involved in combating the pandemic, private equity investments also flowed to companies in other healthcare subsectors that experienced pandemic-catalyzed changes. The knock-on effects of Covid-19-induced restrictions and behavioral changes have shifted customer preferences, upset supply chains, and prompted new regulation or deregulation. In this regard, four areas dominated investment during 2021: alternative sites of care, mental health, staffing shortages at providers, and pandemic preparedness.

Shifting care from hospital to home

Covid-19 spurred regulatory changes, such as waivers for hospital-at-home care, and whetted an appetite among both consumers and providers for technology-enabled services, which accelerated adoption of alternative-sites-of-care models. That momentum, in turn, favored services and technologies to care for patients at home instead of a hospital. Wellspring acquired Caring Brands International, a franchiser of home health services in the US, UK, Ireland, and Australia. Amedisys also purchased Contessa Health, a home-based acute and postacute care provider. And US health systems Mayo Clinic and Kaiser Permanente invested \$100 million in home-hospital service provider Medically Home. Although regulatory uncertainty about home-hospital and telehealth reimbursement persists in some markets, the shift toward alternative sites of care will likely continue.

Less stigma about mental health treatment

The pandemic has increased demand for behavioral health treatments and has strengthened employer commitment to supporting employee mental health. In the US and Europe, investors bought several brick-and-mortar mental health companies. Onex Partners completed its majority acquisition of Newport Healthcare, a US provider of behavioral health clinics focused on teens and young adults, for \$1.3 billion. In Europe, Apax Partners acquired Mentaal Beter, a Dutch network of mental care

clinics. Fueled by employer support for employees, growth-equity investment in US digital mental health companies surged. In October, for example, BetterUp raised \$300 million through a Series E funding led by Wellington Management, following a \$125 million Series D round in February. With the reduced stigma for mental health services, combined with greater employer and payer commitments, the addressable mental health market seems bound to expand over the next few years.

Wanted: staffing to fill the gaps at providers

Healthcare workers are leaving their jobs at higher rates as Covid-19 takes a toll on their mental and physical health, and other career opportunities look more attractive. This places increasing pressure on provider organizations, with many facing higher labor costs and unable to meet patient demand.

Companies that help fill vacancies thus attracted new attention from investors in 2021. For example, Centerbridge and CDPQ jointly purchased Medical Solutions, a staffing firm focused on travel nursing, for \$2.3 billion. Growth-equity firms also targeted this market with ConnectRN, which provides flexible shift offerings and career development resources for nurses, raising \$76 million from investors led by Suvretta Capital Management and Avidity Partners.

In the short run, staffing agencies will play a big role in closing personnel gaps exacerbated by Covid-19. A return to more normal staffing and turnover levels seems inevitable, so companies that manage to keep their employees engaged and loyal will get there faster. Over the longer term, it's not clear which companies will succeed. Will big staffing firms such as Medical Solutions dominate, or will innovators such as Nomad Health, Trusted Health, and Wheel move ahead?

Preparing for the next ones

Covid-19 exposed the economic and social consequences of inadequate pandemic preparedness. As a result, even with the pandemic far from over, governments and private companies are already investing to prepare for future outbreaks. Many companies developing vaccine platforms (especially mRNA) and antimicrobials (antibiotics and antivirals) have seen a surge in government spending as well as venture funding. Big name mRNA firms, such as BioNTech and Moderna, multinational pharmaceuticals firms working on antiviral products, and associated pharma services companies will likely attract the most interest, but emerging firms with differentiated therapies, along with the “pick and shovel” companies serving various sectors, also stand to gain.

* * *

A year ago, anticipation of the vaccine gave rise to hope for eradicating Covid-19. Today, the future will more likely feature endemic coronaviruses, with widespread vaccination and effective antivirals progressively dampening the effects of each new variant. Select investments in technologies that further those goals will be rewarded in economic and social terms, as will investments that deliver high-quality care to all populations, including low-income and rural groups, to rebuild a new normal for healthcare.



Hot Topics

Now Playing: The Return of the Healthcare Megadeal

More private equity sponsors team up to win bids and spread risk.

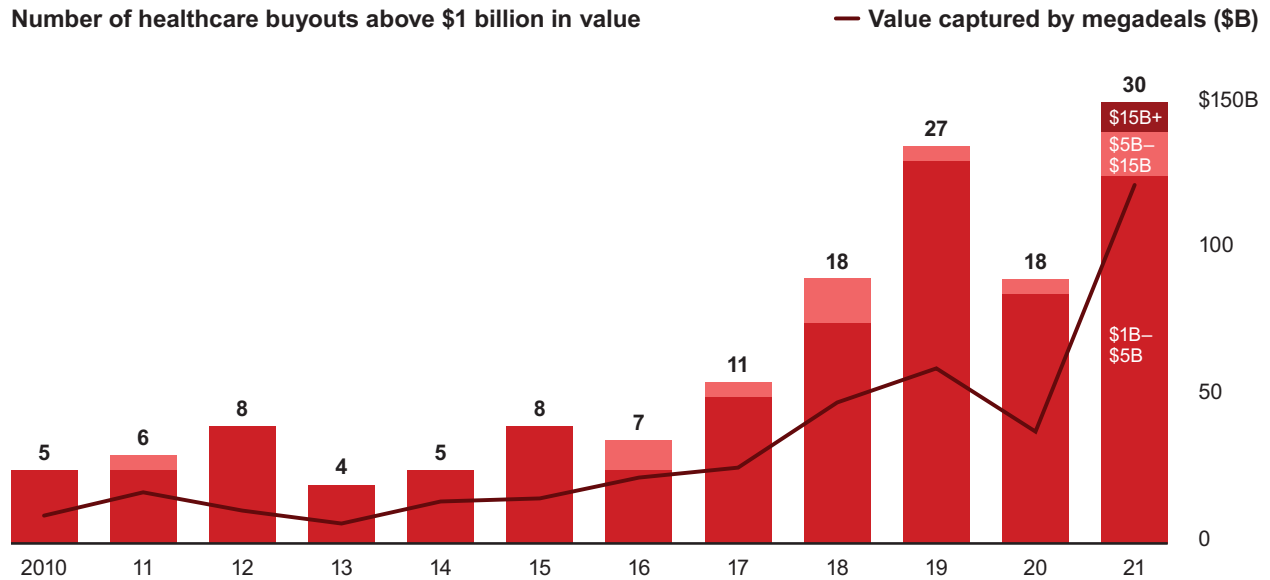
At a Glance

- ▶ Large healthcare private equity deals returned in force during 2021, with a record 30 transactions valued at greater than \$1 billion.
- ▶ Two transactions exceeded \$15 billion, both won by a consortium of investors.
- ▶ Private equity capital is flowing into healthcare—indeed, all industries—at unprecedented levels.
- ▶ The heightened competition for attractive assets and sky-high valuations will cause more sponsors to team up on deals.

A huge stockpile of dry powder, or private equity capital, waiting to be deployed—\$3.3 trillion as of June 2021—has helped boost the number and value of healthcare buyouts. Abundant capital and expanding deal multiples converged in 2021 to cause a rebound in large deals.

The record 30 deals larger than \$1 billion caused disclosed value to more than triple to \$122 billion from \$38 billion the prior year (see *Figure 1*). Of note was the increase in deals north of \$15 billion, including the investments in Medline and Athenahealth, valued at \$34 billion and \$17 billion, respectively. Both megadeals went to consortium bidders that were able to partner and pool capital to defray risk and also submit a competitive bid.

Figure 1: Healthcare megadeals rebounded to a record year



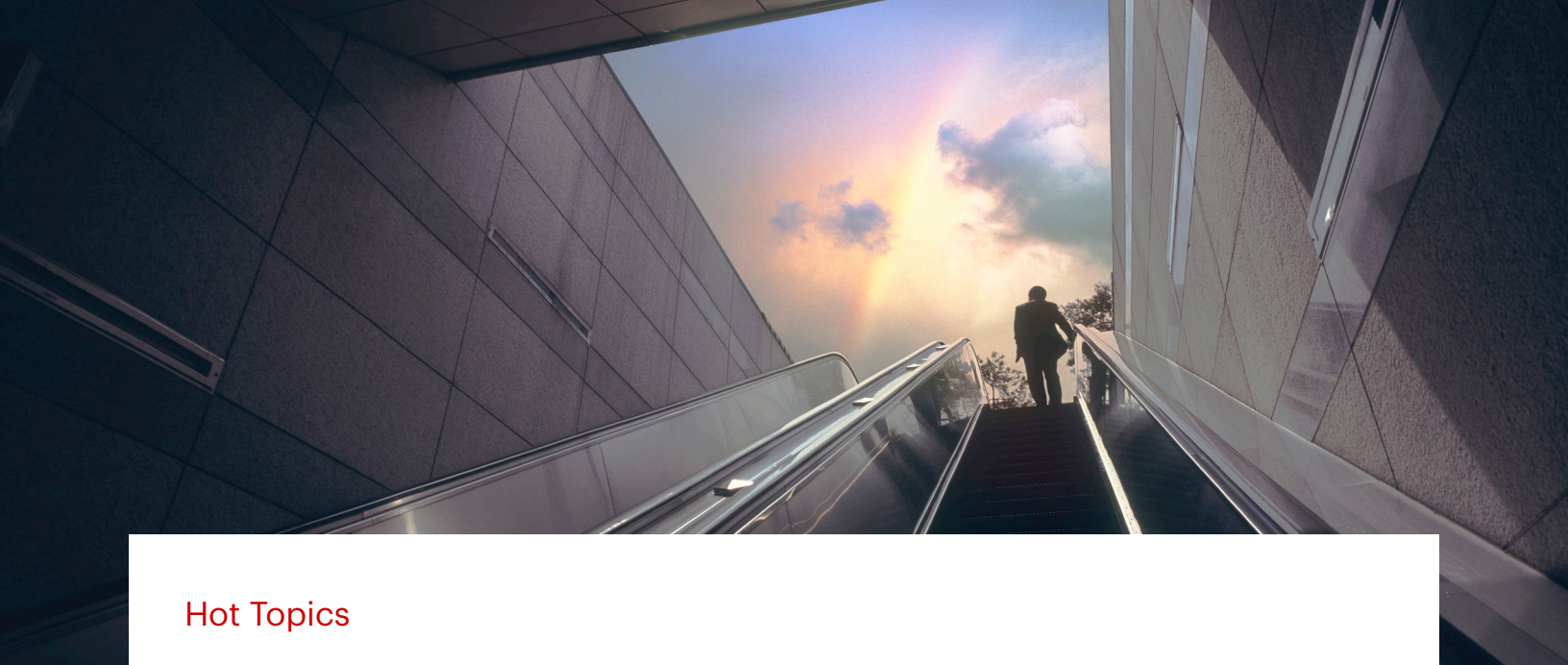
Notes: Excludes spin-offs, add-ons, loan-to-own transactions and acquisitions of bankrupt assets; numbers based on announcement data; includes announced deals that are completed or pending, with data subject to change; deal value doesn't account for deals with undisclosed values; total buyout deal values updated based on Dealogic 2021 sponsor classifications
Sources: Dealogic; AVCJ; Bain analysis

With healthcare returns expected to remain strong, the continued growth in valuations will likely lead to a steady stream of large deals. The consortium, or club, deal thus will remain an important presence, particularly for transactions above \$5 billion, because the structure allows private equity sponsors to afford increasingly large assets. Consortium bidding appeals not only to the largest investors looking to buy assets valued at over \$10 billion, but also to small and midsize funds bidding on assets with lower price tags. For example, Nordic Capital, Insight Venture Management, and 22C Capital teamed up to buy Inovalon for \$7.3 billion, and CBC Group, Mubadala Investment, GS Holdings, and IMM Investment acquired Hugel for \$1.5 billion.

On the margin, public down and private up

There's another wrinkle: Public markets haven't accorded healthcare companies the same high valuations as they have for some other industries, such as technology, so private companies that once would have gone public increasingly are exploring private capital options. Private equity funds have also warmed to public-to-private transactions, further expanding the universe of potential targets.

Very large deals obviously require strong conviction, deep expertise in scoping, and diligence that captures the puts and takes about how a target's potential might evolve. In light of the strong deal demand and multiple levels, the ability to orchestrate and execute complex diligence will continue to be a differentiating capability for healthcare sponsors.



Hot Topics

Growth Equity Blossoms in Emerging Tech-Related Healthcare Firms

Incremental capital helps cutting-edge firms scale up operations

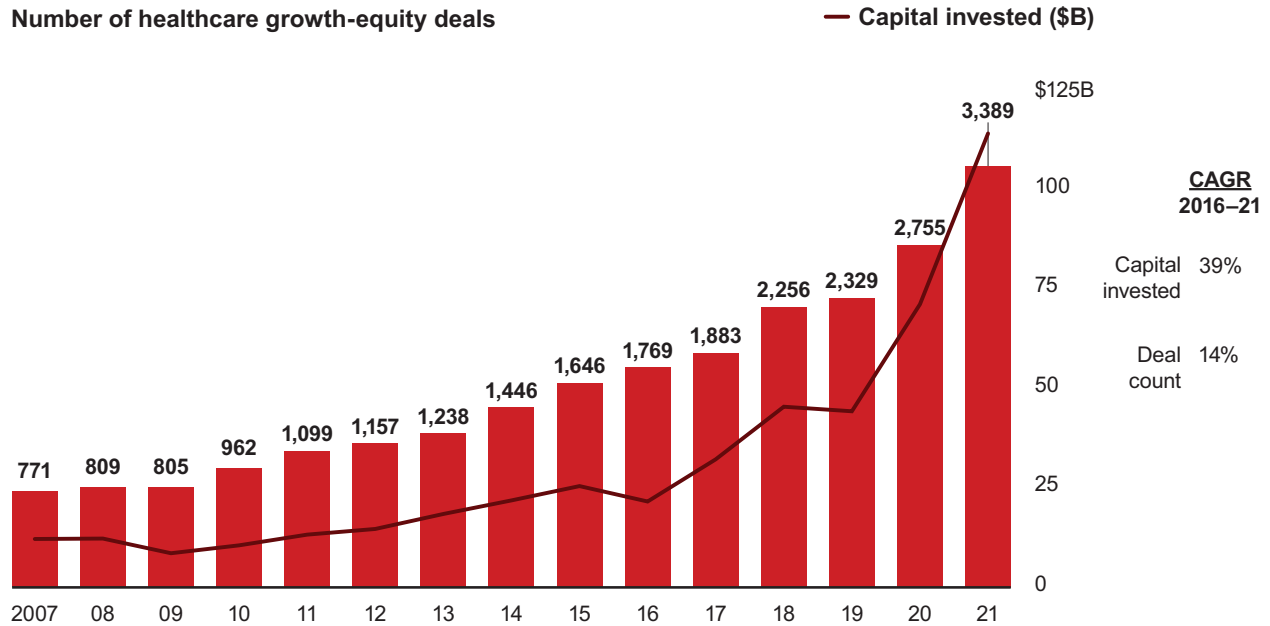
At a Glance

- ▶ Growth-equity deals and capital invested both set records in 2021, with the largest share going to North America.
- ▶ Investors span buyout funds, crossover funds, and growth specialists, each with a unique subsector focus and value creation playbook.
- ▶ Funding tended to cluster in employer-sponsored digital health tools, tools that improve provider operations, and technologies that make drug development more efficient.

Growth-equity investments in healthcare set records again in 2021. Transactions reached 3,389, compared with 2,755 in 2020. Disclosed capital invested rose to \$114 billion from \$71.1 billion, with a 5-year compound annual growth rate of 39% (see *Figure 1*). North American assets continue to be the major beneficiaries, accounting for 50% of global growth-equity deals and 60% of global disclosed capital invested.

More funds have flocked to this space, which consists of investments in relatively mature companies that are seeking capital for expansion or restructuring. The funds range from the growth-equity arms of buyout funds (such as CVC, TPG, and Blackstone) to crossover funds (Tiger Global, Coatue Management, and ICONIQ), to traditional growth specialists (TA Associates, General Atlantic, and Summit Partners).

Figure 1: Capital deployed through healthcare growth-equity investments has grown quickly in the past five years



Note: Growth equity also includes later-stage venture capital
 Source: Pitchbook

Among the various investor types, traditional expansionary capital providers have historically been most active, focusing mostly on healthcare services, and that was true in 2021. For example, TPG Growth made a significant investment in IPG, a provider of surgical cost management solutions. But in recent years, the market has also attracted investors focused on high-growth, tech-intensive assets. Notably, Tiger Global has deployed huge amounts of growth capital to fund the expansion of digital health firms such as Dispatch Health, which snared \$200 million in a Series D round led by Tiger.

Our analysis found that tech-intensive assets attracted a significant portion of 2021 growth-equity deal activity, particularly in three categories:

- employer-sponsored digital health tools;
- tools that improve provider operations; and
- software focused on biopharma.

Employer-sponsored digital health tools

Digital health tools are redefining how healthcare is delivered and financed. These platforms provide highly scalable services that allow customers to take charge of their health and interact with providers in more convenient formats, such as mobile apps. Unlike traditional providers, these companies sell directly to employers, circumventing payer and provider channels. In addition, digital tools raise patient utilization by making the experience as simple and clear as possible.

Digital health firms that make a compelling case to employers that they lower costs, improve productivity, or reduce absenteeism have grown rapidly and benefited from large growth-equity investments, with some receiving multiple investments in 2021. For example, Hinge Health, a digital musculoskeletal clinic that combines advanced sensors, computer vision, and a full clinical care team, raised growth equity in two rounds, first \$300 million and then \$600 million, both led by Coatue and Tiger Global. Ginger, an app-based, on-demand mental healthcare company, raised \$100 million from Blackstone Growth in March; then in October it merged with Headspace to form Headspace Health, an estimated \$3 billion enterprise providing a full spectrum of mental health services. Other such platforms that received significant capital include BetterUp, Lyra, Monogram, and Virta. Growth-equity funds are building forms of tech-enabled, patient-centered, continuous care that aim to improve health outcomes at a lower cost.

Digital health platforms provide highly scalable services that allow customers to take charge of their health and interact with providers in more convenient formats, such as mobile apps.

Tools that improve provider operations

Growth equity fueled the expansion of software providers that use artificial intelligence (AI) to optimize operations of providers under pressure to raise their productivity. Back-office optimization such as revenue cycle management (RCM) has attracted investors. Olive, a healthcare-focused AI-as-a-service company that automates back-end provider processes, raised \$400 million in a round led by Vista Equity Partners and Base10 Partners. Akasa, an AI-driven RCM platform, raised \$60 million in a Series B round led by Bond Capital.

Other investments focused on software providers that improve the quality and efficiency of clinical care and patient engagement. For example, PathAI, which applies AI to pathology, raised \$165 million

in a Series C round led by Tiger Global. Patient engagement also drew investments, including Cedar, a healthcare financial engagement platform that raised \$200 million in a Series D round led by Tiger Global.

Software focused on biopharma

Growth-equity investors have demonstrated an appetite for technological tools and data that streamline the course of biopharma development, from drug discovery to clinical trials to product launch. For broader R&D, Benchling, a software-as-a-service (SaaS) company, raised \$200 million in a Series E funding round led by Sequoia Capital Global Equities. Related to clinical trials, Warburg Pincus led a \$110 million Series C funding round in Aetion, a real-world data platform that helps healthcare stakeholders efficiently assess the safety, effectiveness, and value of medical technologies. Coatue also led a \$220 million investment in Reify Health, a technology platform for optimizing patient recruitment. Blackstone Growth and Tiger Global led a \$304 million Series D in Medable, a clinical research SaaS company that supports digital and decentralized clinical trials. At the commercialization stage, innovative companies include Komodo, a healthcare and life sciences market intelligence SaaS company, which secured \$220 million in a Series E funding round led by Tiger Global.

Growth investors are also funding the use of AI at the preclinical stage of drug development. For example, Insitro, which uses machine learning for drug discovery and development, raised \$400 million in a Series C round led by the Canada Pension Plan Investment Board. Exscientia, a clinical-stage pharma-tech company that uses proprietary AI to precision engineer its drugs, closed a \$225 million Series D round led by SoftBank. Other companies using AI for drug discovery that benefited from growth-equity investment include Insilico Medicine and XtalPi.

Segments promising future growth

Strong returns will no doubt attract more capital to healthcare growth equity, supporting new types of care that empower patients, make processes more efficient, and further digitalization. We expect demand for growth-equity capital to accelerate across traditional healthcare services as well as tech-intensive firms. Digital health tools will remain a target-rich area as the digital management of chronic diseases matures. However, as many subsectors mature with multiple proven providers, private equity funds will need to undertake thorough diligence in order to pick the winners.

Software tools for the biopharma sector will also likely accelerate, presenting new opportunities for value creation by companies that effectively identify and translate drugs into successful therapeutics. Beyond subsectors that thrived in 2021, growth-equity investors will place bets on the broader digital transformation of healthcare.



Hot Topics

Healthcare Private Equity Deal Returns: Look to Revenues and Multiples

Margin expansion, currently a minor factor in returns, is bound to become more important

At a Glance

- ▶ Over the past decade, the median internal rate of return for private equity healthcare deals has outperformed the all-industry median by about 6 percentage points.
- ▶ The multiple on invested capital and the write-off rate for healthcare deals over the past 10 years have been similarly attractive.
- ▶ DealEdge® benchmarks show that healthcare deal value has been driven mainly by strong revenue and multiple growth; margin expansion has been smaller, though in line with other industries.
- ▶ Strong returns will likely continue to attract new sources of capital, which will in turn push valuations higher, reinforcing the need for accurate and reliable deal benchmarks

Private equity funds deployed a record amount of capital in healthcare during 2021, and corporate M&A was similarly robust. Investors like the industry's strong performance and recession-resistant return profile. New sources of capital have increasingly entered the space, pushing up valuations and intensifying competition.

But which factors are most important to the industry's performance? Reliable market intelligence is critical for making well-informed investment decisions, so to that end, Bain has partnered with CEPRES to bring our DealEdge benchmarks to bear.

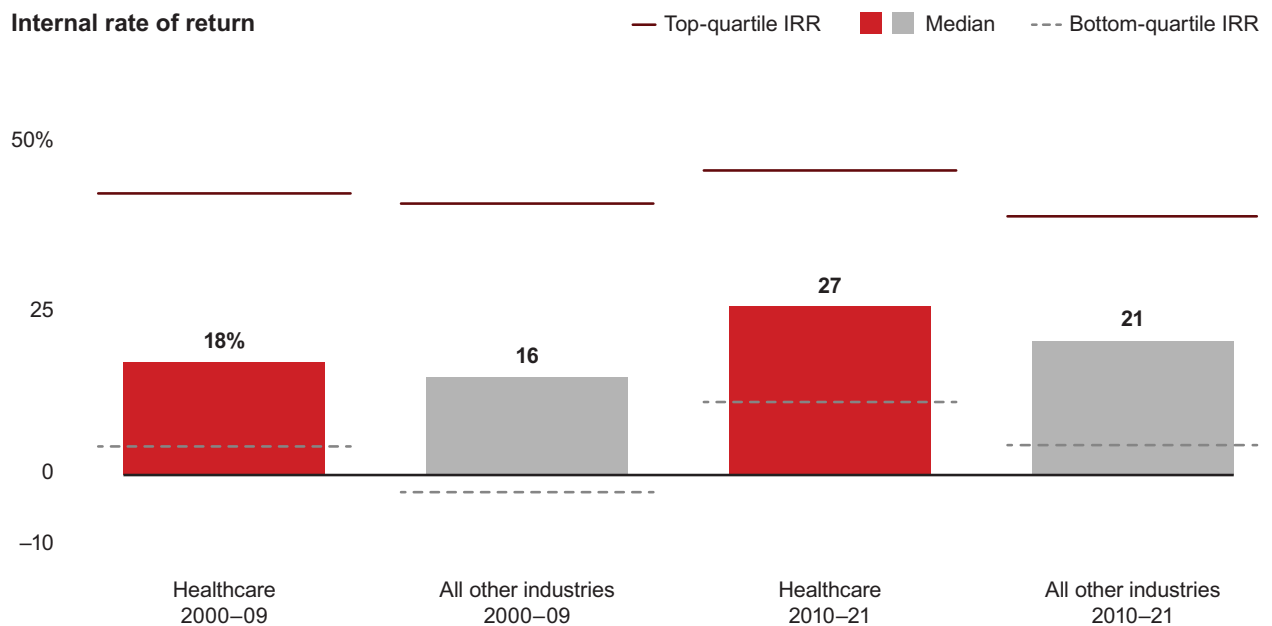
Our analysis shows that from 2010 through 2021, the median internal rate of return (IRR) for healthcare private equity deals outperformed those in all other industries by about 6 percentage points—27.5% vs. 21.1% (see Figure 1).

The top and bottom quartiles for healthcare also surpassed other industries. Healthcare’s percentage of deals with multiples on invested capital (MOIC) of less than 1 has been an attractive 17%, compared with almost 26% for all other industries. These returns have been consistent over time, showing less volatility than, say, technology or energy industries. In addition, the write-off rate for healthcare deals is just 2.9%, far lower than the 4.6% for all other industries, indicating less downside risk.

The importance of revenue growth and multiple expansion

Historically, healthcare deal returns have been influenced mainly by revenue growth and multiple expansion (see Figure 2). The median compound annual growth rate (CAGR) for healthcare is 11.1%, compared with 7.6% for all other industries, indicating revenue growth is critical for healthcare value creation. Healthcare companies are finding new streams of revenue through geographic expansion, new technologies and therapeutics, and advanced care models.

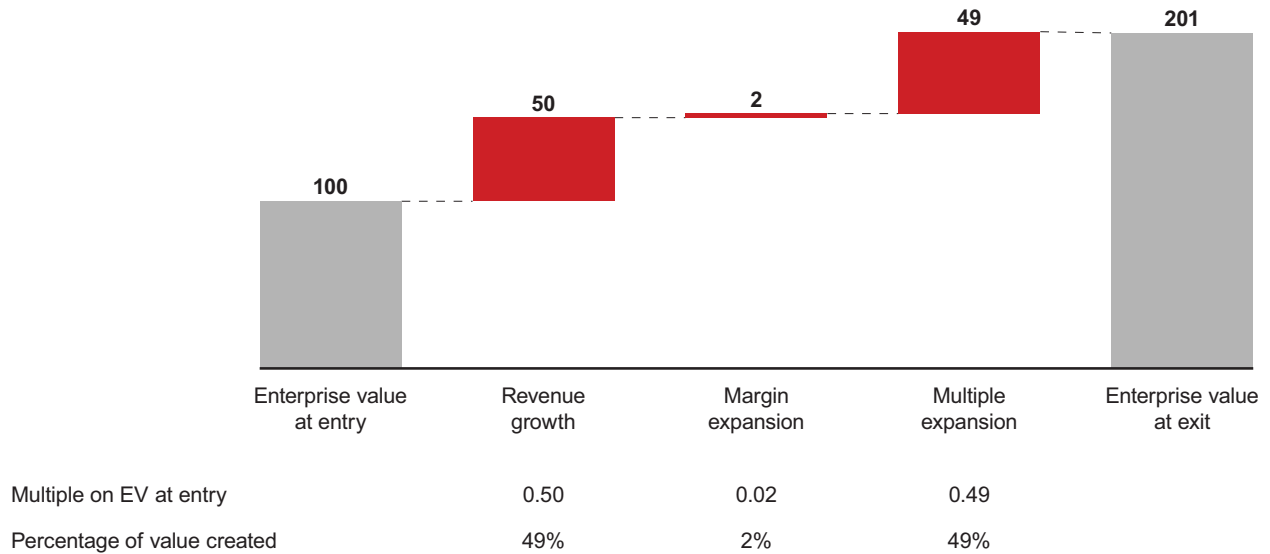
Figure 1: Healthcare private equity returns have outpaced other industries



Source: DealEdge

Figure 2: Deal returns have been boosted mainly by revenue growth and multiple expansion

Healthcare median value creation, entry years 2010–21 (indexed)



Source: DealEdge

As for the robust expansion of multiples over the past decade, this has come despite increasingly higher entry multiples. While the multiple data suggests a favorable exit environment where current owners can sell into a strong market, multiple growth may be harder to achieve in the future as valuations continue to rise. Meanwhile, margin expansion’s contribution to deal value has been relatively small, consistent with other industries.

Margins and revenues will matter more

As evidenced by the many large deals in 2021, healthcare valuations will likely continue to grow. As deals become more competitive and entry multiples rise further, we anticipate that margin expansion and revenue growth will become increasingly important sources of deal value. Determining an attractive paid multiple will require both deep diligence work to build conviction in complex value creation plans, and market insights to help identify pockets of value in this market.



Hot Topics

Healthcare Corporate M&A: Rebounding from the Pandemic

Record-high valuations are forcing acquirers to get creative.

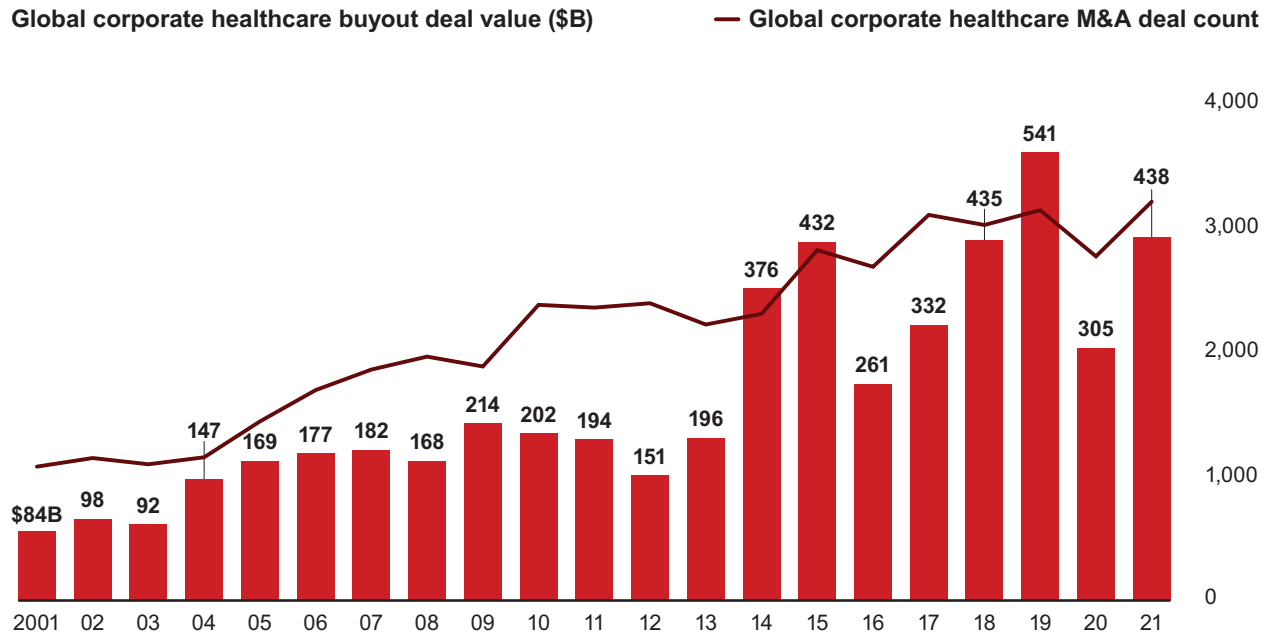
At a Glance

- ▶ After hitting the brakes in 2020, corporate buyers resumed brisk M&A activity in 2021, with biopharma the most active sector.
- ▶ The cost of acquisitions rose significantly, with the average price up 25% as acquirers increasingly underwrote revenue synergies and aggressive growth targets to justify valuations.
- ▶ Looking ahead, M&A looks set to continue to grow across all sectors.
- ▶ However, should deal values remain high, acquirers will need solid conviction in their deal thesis, as well as strong integration capabilities.

Uncertainty surrounding the effects of Covid-19 on the healthcare system globally slammed the brakes on mergers and acquisitions in 2020, following a record year in 2019. In 2021, however, deal value rebounded, growing 44% to \$438 billion, up from \$305 billion the prior year. The number of deals grew a more modest 16% to 3,205 deals, from 2,766 (see *Figure 1*).

North America was the most active region, with 1,281 deals accounting for 65% of the overall value, down from 78% in 2020. European deal value more than doubled in 2021, rising to nearly \$80 billion and accounting for 18% of global value.

Figure 1: Healthcare corporate M&A value rebounded to a record number of deals and the second-highest value



Notes: Includes announced deals that are completed or pending, with data subject to change; deal value does not account for deals with undisclosed values
Sources: Dealogic; AVCJ; Bain analysis

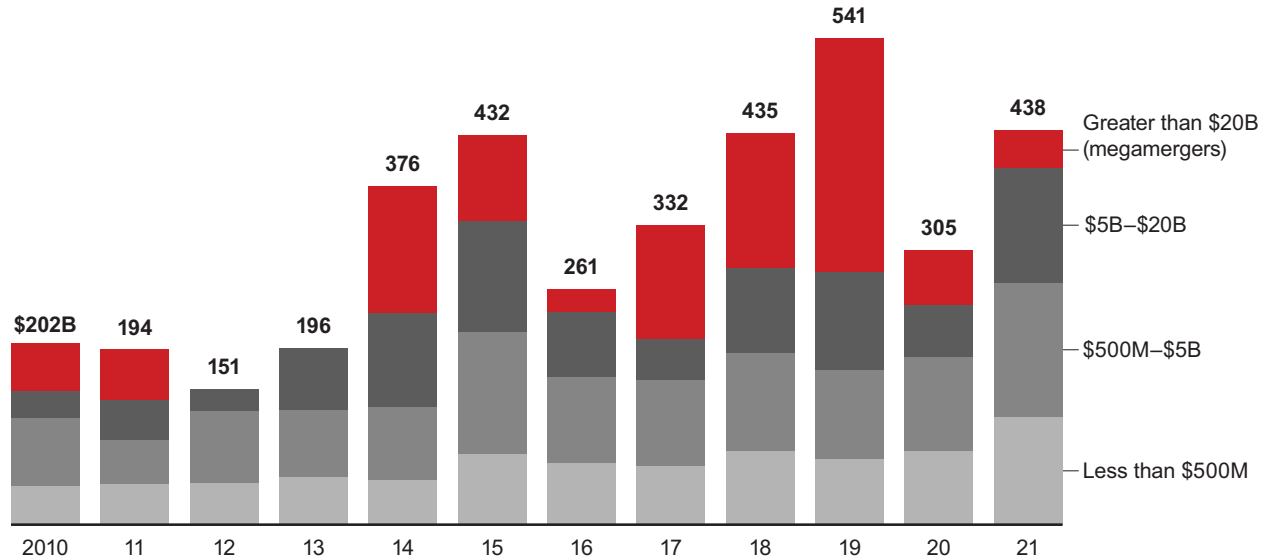
Deals greater than \$5 billion accounted for 39% of total value, in line with 2020, but down significantly from 68% in 2019 (see Figure 2), suggesting that value continues to be more concentrated in smaller deals. The year’s largest corporate acquisition was Thermo Fisher’s takeover of PPD for \$17.4 billion (excluding debt). Deals under \$5 billion, which accounted for 61% of total value, have traditionally been the most competitive with private equity sponsors, indicating that corporate buyers faced increased competition for assets. Further, the Blackstone, Carlyle, and Hellman & Friedman investment in Medline, in a deal valued at \$34 billion, and the H&F and Bain Capital acquisition of Athenahealth for \$17 billion, suggest that sponsors may be moving upstream to compete with corporate acquirers for the largest assets.

Biopharma: smaller companies use M&A to broaden portfolios

Biopharma deal volume rose 4% to 1,002 from 968 in 2020, while deal value increased 9% to \$234 billion from \$215 billion—though down from a record \$400 billion in 2019. Biopharma transactions still composed the majority of healthcare deal value, at 53% (down from 70% in 2020), and accounted for 6 of the 10 largest healthcare mergers during the year. However, these deals were smaller than 2020’s \$40 billion AstraZeneca–Alexion pharmaceuticals merger, the \$21 billion Gilead–Immunomedics merger, and smaller still than the 2019 mergers of BMS–Celgene for \$74 billion and AbbVie–Allergan for \$63 billion.

Figure 2: There were few healthcare megamergers in 2021

Corporate healthcare M&A deal value (\$B)



Notes: Megamergers include Thermo Fisher’s acquisition of PPD for \$21 billion, which is reduced to \$17.4 billion after excluding assumed debt; includes announced deals that are completed or pending, with data subject to change; deal value doesn’t account for deals with undisclosed values
Sources: Dealogic; AVCJ; Bain analysis

Midcap companies are beginning to leverage M&A as well as broaden their portfolios and solidify their market position for existing business lines. For example, Horizon Therapeutics acquired Viela Bio for \$3 billion to strengthen its market position in autoimmune diseases, and Jazz Pharmaceuticals acquired GW Pharmaceuticals for \$7.2 billion to enter the cannabinoid therapeutics market. However, with private equity funds deploying an average of \$80 billion a year in biopharma since 2020, corporate buyers will likely face increased competition and higher valuations.

New to the acquisition scene was the targeting of pharma services companies. Thermo Fisher’s purchase of contract research organization (CRO) PPD aims to enhance its clinical research services offering. This acquisition is a natural addition to Thermo Fisher and highlights its investment in the pharma and biotech market. Another example, Icon, a global CRO, paid \$12 billion for PRA Health Sciences, a clinical development services company, to create the world’s third-largest CRO.

The persistence of mergers suggests that the sector’s fundamentals remain strong and that corporate investors will continue to use M&A selectively to expand their R&D pipelines and product portfolios. However, as valuations continue to rise, acquirers will need to get increasingly comfortable with underwriting higher growth expectations and seek stronger revenue synergies.

Strong tailwinds for life sciences tools

Life sciences tools and diagnostics, which is newly broken out in this year's report, saw brisk M&A activity, with 145 deals accounting for \$40 billion in value, as the Covid-19 pandemic spurred global demand for services and research consumables.

Besides Covid-19 testing, diagnostics providers benefited from other tailwinds, including new payer coverage for genome sequencing, wider adoption of noninvasive prenatal testing, emphasis on earlier cancer diagnosis, and consumers shifting focus to whole health. Among the cases of companies expanding their diagnostic capabilities were Exact Sciences acquiring Thrive Earlier Detection for \$2.15 billion, and the Roche acquisition of Genmark Diagnostics for \$1.8 billion, which both focus on early-stage cancer detection.

Additionally, like biopharma, life sciences also drew investments in services, with the Danaher acquisition of Aldevron for \$9.6 billion to further support clients in research, clinical, and commercial applications.

As medtech companies sharpen their focus on core businesses, they continue to find willing buyers in public and private markets for carve-outs of their noncore product lines.

Medtech: digital and category leadership to the fore

Medtech deals slowed in 2020 amid the decline in elective surgeries and limited commercial access to hospitals. As uncertainty over patient volumes receded, the sector staged a comeback. Deal volume rose 7% to 584 in 2021, from 546 in 2020, and deal value rebounded 56% to \$60 billion from \$38 billion (yet off a record \$97 billion in 2019). This increase stemmed mainly from one large deal, Baxter's acquisition of Hill-Rom Holdings for \$12.5 billion, including debt. Like many major sponsor-backed medtech deals, this transaction represents an emphasis on digitally enabled providers, as Baxter advances its digital and connected care solutions.

Outside of digital transformation, acquirers have resumed their pursuit of assets that enhance category leadership. For example, Steris bought Cantel Medical for \$3.6 billion to expand its dental offering, and Boston Scientific acquired a carve-out of Lumenis to strengthen its urology practice. As medtech companies sharpen their focus on core businesses, they continue to find willing buyers in public and private markets for carve-outs of their noncore product lines.

Payers: blurring the line with providers, and scaling up their offerings

Payer deal volume dropped 28% to 38 in 2021 from 53 in 2020; however, deal value continued its upward trend, growing 59% to \$35 billion from \$22 billion. Payers aimed to scale up or diversify their offerings to different groups of members. Centene's acquisition of Magellan for \$2.2 billion obtained market entry into behavioral health as well as a specialty pharma provider for Medicaid, while Cigna Evernorth's acquisition of MDLive helped scale up its telehealth offerings.

Corporate investors also found ways to partner with private equity in strategic, payer investments to reduce costs and improve care. Blackstone Growth, Anthem, and digital health start-up K Health, for example, launched Hydrogen Health, to provide on-demand primary care. Welsh, Carson, Anderson & Stowe's subsidiary Valtruis, which invests in companies that transform US healthcare along the principles of value-based care, led Blue Shield of California, Cigna Ventures, and Oak HC/FT in an \$83.5 million Series B funding for Cricket Health, a value-based kidney care provider. We expect this trend of strategic partnerships to continue transforming value-based care.

More broadly, we anticipate seeing more transactions that further integrate providers and payers, with strong payer balance sheets accelerating deal activity in the coming year.

Providers: cost benefits through scale

Provider deal volume climbed 31% to 698 deals, compared with 533 in 2020; deal value, meanwhile, soared 137% to a record \$45 billion from \$19 billion. Most of these acquisitions were designed to help acquirers build scale and realize cost efficiencies. Examples include the announced merger of Brazil's Hapvida with Intermedica for \$9.6 billion, and Intermountain's merger with SCL Health.

In a continuing trend, payers bought providers to better control members' total costs, deepen member engagement, and improve health outcomes. Humana completed its \$5.7 billion purchase of the remaining stake in Kindred at Home. Meanwhile, Walgreens continued its push into the provider space with its \$5.2 billion investment in VillageMD, with the goal of opening 600 more primary care clinics in its stores. Should these strategies prove successful, we anticipate additional transaction activity that crosses the payer-provider line. And with strong profit pools and cash positions, we expect deal activity to accelerate across the payer landscape in 2022.

Among other notable deals, One Medical's purchase of Iora Health for \$2.1 billion was a consolidation play that expanded One Medical's access to Medicare patients and is estimated to expand One Medical's market opportunity to \$870 billion.

Providers will no doubt continue to consolidate and build scale as they face ongoing margin pressures. As the world emerges from the Covid-19 pandemic to an endemic state, and providers return to some semblance of normalcy, we expect M&A volumes and values to rise further.

Record valuations put greater demands on the M&A toolkit

Healthcare companies in all sectors will continue to look to M&A to spur growth, and we may see more corporate investors partnering with private equity sponsors to get deals done, as Anthem has done several times. It's important to note that not all mergers immediately result in increased value. For instance, One Medical purchased Iora in June 2021 and rebranded as 1life Healthcare. From a high of about \$58, the stock traded at around \$11 per share as of late January. Such pressure could discourage publicly traded companies from engaging in M&A, and prompt them to keep private assets private for longer periods of time.

Despite this, deal multiples remain high, with a median of 25 times forward-looking enterprise value to EBITDA, and if they stay at 2021 levels, acquirers will need strong conviction in their investment thesis and must understand the deal risks, particularly when underwriting revenue growth. Robust internal M&A and diligence capabilities become critical for corporate acquirers sourcing viable deals.

After acquisitions, the winning companies will be those that understand where, how deep, and how quickly they have to integrate acquired organizations, and discern where integration unlocks deal value (such as structuring newly combined sales forces for revenue synergies). The most successful acquirers will also have a clear plan to boost capabilities that improve the odds of success, particularly if the acquired asset is a carve-out.



Hot Topics

Healthcare Exits: Corporate Buyers Step Up

Roll-ups and portfolio expansion underlie many corporate deals.

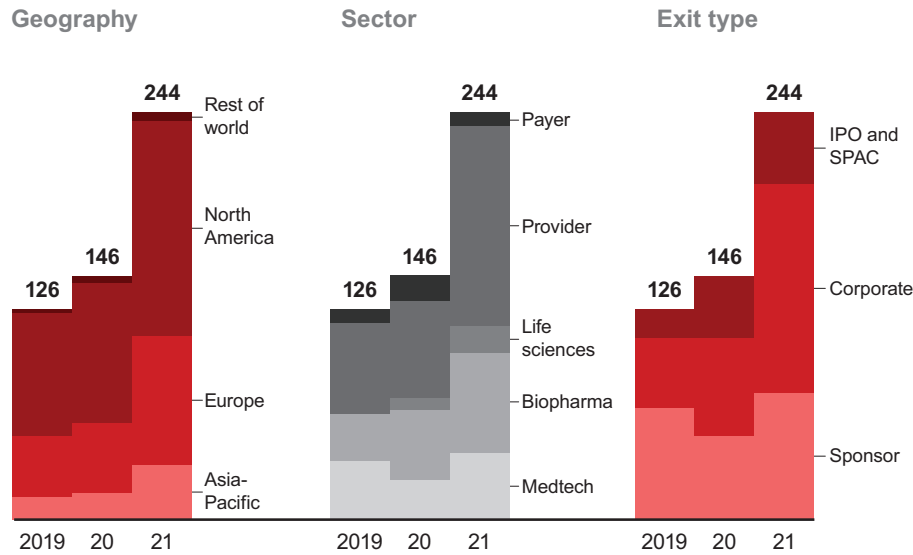
At a Glance

- ▶ Global exits reached another record in 2021 at 244 deals, while disclosed deal value more than doubled to \$179.3 billion. The provider and biopharma sectors had a banner year.
- ▶ The fastest-growing type of transaction was private equity sponsor to corporate buyer, composing well over half of exits.
- ▶ The median holding period held steady at 4.5 years.
- ▶ Although special-purpose acquisition companies continued to appeal to investors, concerns about regulatory changes and public market valuations could dampen SPAC activity.

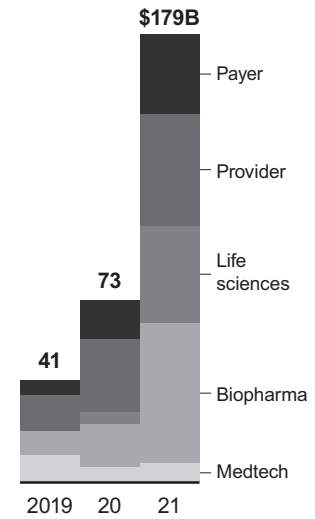
Strong market conditions, and perhaps a backlog of delayed exits due to the gyrations caused by Covid-19, made for a record level of private equity-backed healthcare exits in 2021. Whether through sale of a portfolio company to another sponsor or a strategic corporate buyer, or an initial public offering, or some other means, exits globally increased to 244 in 2021 from 146 in 2020. Disclosed deal value, meanwhile, surged to \$179.3 billion from \$73 billion. Corporate acquirers were especially active, in line with the prior year, so that sponsor-to-sponsor exits made up a smaller share of transactions (see *Figure 1*).

Figure 1: Exit activity has transformed over the past three years, particularly in the Asia-Pacific region, provider sector, and for corporate acquirers

Number of healthcare deal exits



Value of healthcare exits (\$B)



Notes: Includes announced deals that are completed or pending, with data subject to change; deal value doesn't account for deals with undisclosed values
Sources: Dealogic; AVCJ; Bain analysis

A global phenomenon

Sponsor-backed exits grew in every region. North America continues to account for the majority of exits globally, though its share dropped from 58% in 2020 to 53% in 2021. North American deal volume rose from 84 exits to 129 exits in 2021, with most of the growth resulting from sponsor-to-strategic exits, doubling from 27 deals in 2020 to 54 in 2021 (see Figure 2).

Asia-Pacific was the fastest-growing region, with 33 deals in 2021, up from 16. This was driven almost exclusively by sponsor-to-strategic exits, from 6 in 2020 to 22 in 2021. Asia-Pacific private equity markets clearly are coming on strong.

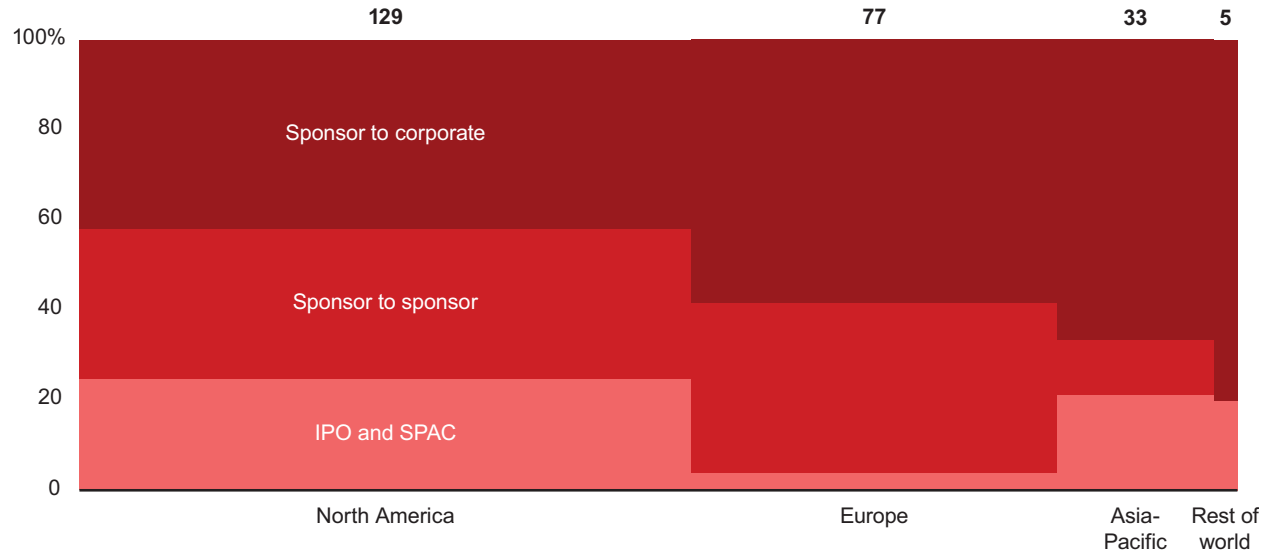
Europe also saw significant growth, increasing from 42 exits to 77 in 2021, here again spurred by sponsor-to-strategic exits, which grew from 23 to 45.

Healthcare providers: sponsor-to-corporate deals ascend

Providers accounted for the largest share of exits, logging 120 in 2021, more than twice the 58 in 2020. Disclosed deal value also rose sharply to \$44.5 billion from \$29.5 billion in 2020. Continuing a trend started in 2019, sponsor-to-corporate deals became the largest share of provider exits.

Figure 2: Sponsor-to-corporate transactions accounted for the largest share of exits in each region

Number of global healthcare buyout-backed exits, 2021



Notes: Includes announced deals that are completed or pending, with data subject to change; deal value doesn't account for deals with undisclosed values
Sources: Dealogic; AVCJ; Bain analysis

The largest exit was the electronic health record vendor Athenahealth, acquired by Bain Capital and Hellman & Friedman from Veritas Capital and Evergreen Coast Capital for \$17 billion. Veritas and Evergreen took Athenahealth private in 2019 in a deal valued at \$5.7 billion, implying a hefty return within a holding period of less than three years.

Two large provider exits went to payers looking to expand vertically: Hapvida's purchase of Notre Dame Intermedica from Bain Capital for \$9 billion, creating Brazil's largest hospital network, and Humana's purchase of the remaining stake of Kindred at Home, provider of home-based clinical solutions, for \$5.7 billion, from Welsh, Carson, Anderson & Stowe.

Biopharma: big deals in pharma services

With a raft of large deals, biopharma had a banner year for exits. Deal count rose to 60 in 2021, up from 42 in 2020, and disclosed value more than tripled, to \$56 billion from \$17.3 billion. Three biopharma deals exceeded \$5 billion each, 2 of which were pharma services assets that yielded strong returns.

PPD, a clinical research organization that Thermo Fisher purchased from Carlyle and Hellman & Friedman for \$17.4 billion (excluding debt), was the largest biopharma exit of the year. H&F and Carlyle made large returns through a long holding period; both firms invested in PPD's 2011 take-private

and again in a 2017 recapitalization, and now they'll receive a 5.5-fold and 3-fold return, respectively, on their investments. For Thermo Fisher, the acquisition advances its drug development capabilities and value proposition.

The second-largest biopharma exit was the sponsor-to-sponsor trade of Parexel from Pamplona Capital to EQT and Goldman Sachs for \$8.5 billion.

Medtech: a surge in surgical devices

Medtech deal volume rose 67% in 2021, jumping to 40 exits from 24 in 2020. Disclosed deal value rose 24%, from \$6.2 billion to \$7.7 billion.

Corporate buyers expanded their product portfolios to include specialty surgical devices, as seen by the two largest medtech exits. Altaris sold BK Medical Holding, an active imaging system manufacturer for surgical guidance, to GE Healthcare for \$1.5 billion. And Baring Private Equity Asia sold Lumenis, a laser business focused on urology procedures, to Boston Scientific for \$1.1 billion.

Sponsor-to-corporate exits in medtech more than doubled from the previous year to 11 trades. The largest was Bain Capital's purchase of PartsSource from Great Hill Partners.

Life sciences tools and diagnostics sector deal volume more than doubled from 7 in 2020 to 16, while disclosed deal value multiplied more than eight times, from \$4.7 billion to \$39.1 billion.

Life sciences: brisk trade in clinical labs

Many more exits and one huge deal distinguished the life sciences tools and diagnostics sector in 2021. Deal volume more than doubled from 7 in 2020 to 16, while disclosed deal value multiplied more than eight times, from \$4.7 billion to \$39.1 billion. The rise in value occurred largely because of the special-purpose acquisition company (SPAC) Gingko Bioworks, a synthetic biology company that builds organisms for customers in nutrition and health; it merged with Soaring Eagle Acquisition Group and went public at a \$15 billion valuation, providing an exit for a consortium of investors. With so much capital at a steep valuation, Gingko Bioworks has a tough task to meet shareholder expectations.

The second-largest life sciences exit was Danaher's purchase of Aldeveron, a manufacturer of plasmid and other reagents for the life sciences industry, from EQT for \$9.6 billion. The deal will expand Danaher's development capabilities and help it bring products to market faster.

Sponsor-to-sponsor clinical laboratory trades also flourished during the year, including EQT and PSP acquiring Cerba HealthCare, a French medical biology laboratory, from Partners Group Holding for \$5.3 billion. Goldman Sachs, OMERS Infrastructure, and AXA bought Amedes Holding, an operator of medical laboratories, from Antin Infrastructure for \$1.9 billion. And Apax sold Unilabs, a European laboratory and imaging diagnostics company, to A.P. Moller Holding.

Healthcare payers: technology and data dominate deals

Payer exit transactions declined from 15 in 2020 to 8 in 2021. Disclosed deal value rose sharply from \$15.3 billion to \$31.9 billion, but this stemmed mostly from UnitedHealth's Optum agreeing to acquire Change Healthcare for \$13 billion, an exit strategy for Blackstone, which owned 20%.

As in 2020, many of the large assets that exited are focused on payer technology and data. This includes the Change Healthcare platform, which manages revenue, payment, and clinical data. With the deal scheduled to close in 2022, the new entity will combine that platform with Optum's data analytics to create more informed insights from claims data.

Looking at initial public offerings (IPOs) of payers, the largest was Signify Health, a tech-enabled value-based care platform, which went public with a valuation of more than \$5.3 billion, an exit for New Mountain Capital, followed by the \$200 million IPO of Convey Health Solutions, an IT infrastructure company for payers, providing an exit for TPG.

The second-largest payer exit was the acquisition of DentaQuest, a dental insurance provider, by Canadian insurer Sun Life for \$2.5 billion from Centerbridge. The deal strengthens Sun Life in dental benefits and US employee benefits.

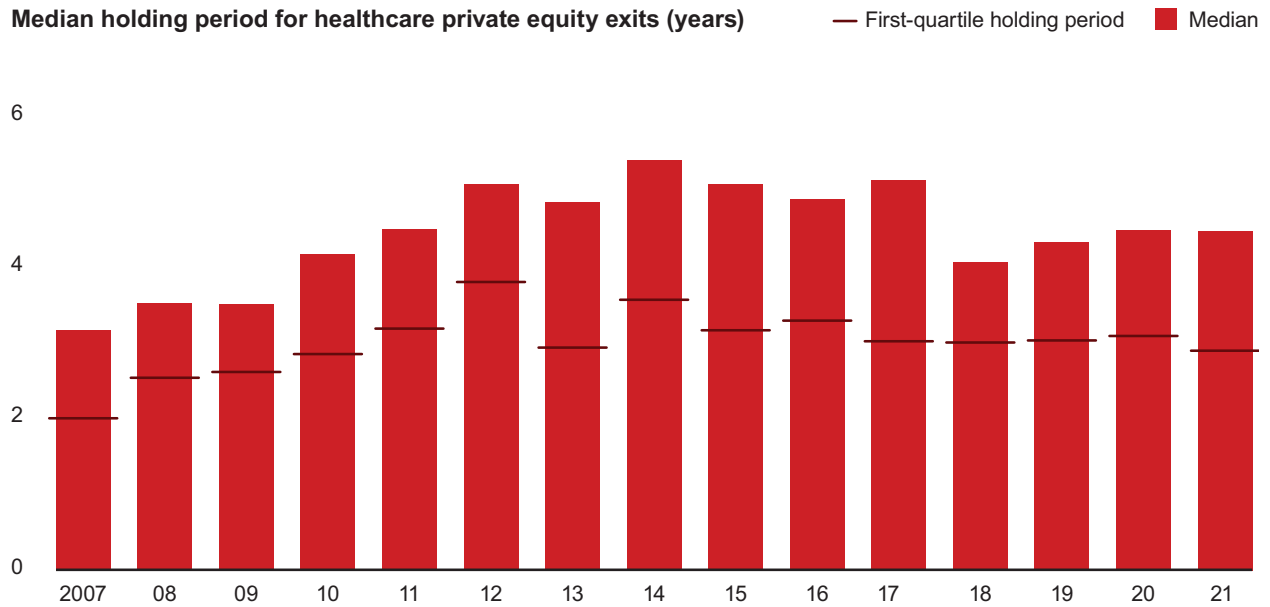
High valuations and large pools of capital waiting to be put to work continue to foster a favorable exit environment for private equity sponsors.

Quick flips remain attractive

The median holding period for healthcare assets held steady at 4.5 years in 2021, but the first quartile of deals shortened slightly, possibly indicating that opportunistic investors are selling into a strong market (see Figure 3).

High valuations and large pools of capital waiting to be put to work continue to foster a favorable exit environment for private equity sponsors. Many sponsors selling inside a two-year holding period

Figure 3: Holding periods for healthcare private equity have held steady for the past few years



Notes: Includes announced deals that are completed or pending, with data subject to change; deal value doesn't account for deals with undisclosed values
Sources: Dealogic; AVCJ; Bain analysis

sensed a window to seize rising valuations and ample strategic exit channels, even if that occurred early in the investment horizon. The few notable quick flips, or assets held for less than two years, include both corporate and sponsor-to-sponsor opportunities, such as EQT’s exit of Aldeveron to Danaher and Atlantic Street Capital’s exit of United Veterinary Care to Nordic Capital.

SPACs: more popular, but under more scrutiny

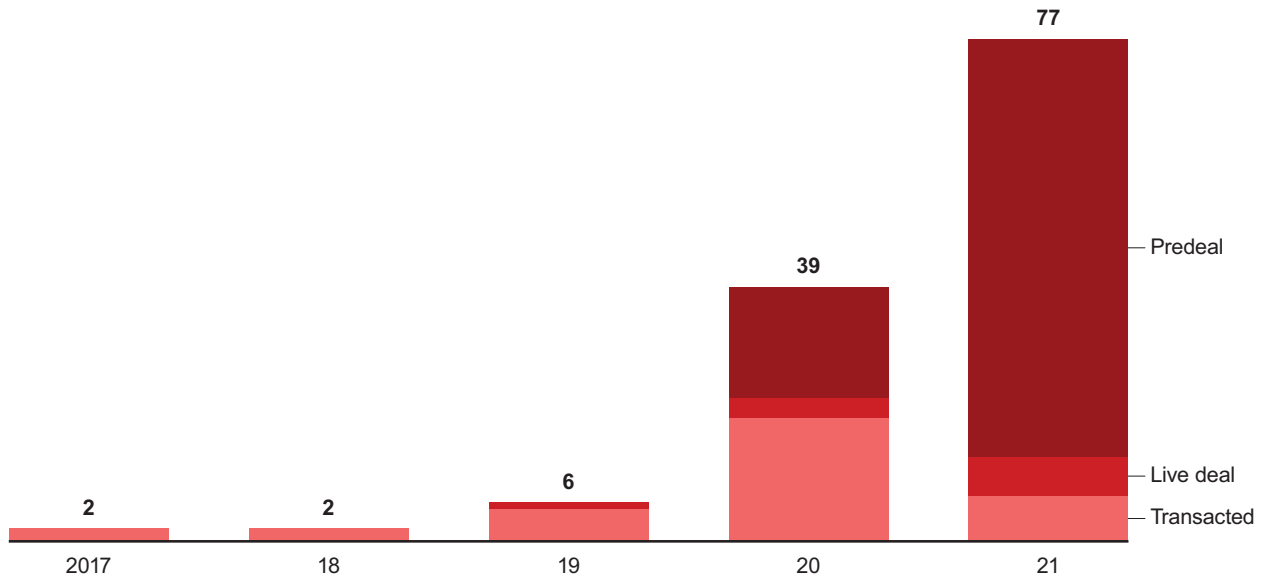
Sales to SPACs, an exit strategy that flourished in 2020, continued in 2021 through large transactions such as ATI Physical Therapy, an owner-operator of therapy clinics and an exit opportunity for Advent International.

During 2021, the number of healthcare-related SPAC IPOs grew 100%, lagging the broader SPAC market, which rose 150%, and also lagging their growth in 2020.

There are still almost 80 healthcare-related SPACs searching for targets, with about half expiring by the first quarter of 2023 (see Figure 4). However, given increasing regulatory scrutiny around SPACs and competitive intensity from corporates and sponsors, some of these SPACs could struggle to find a deal before their expiration.

Figure 4: Special-purpose acquisition companies have taken off as an exit vehicle in healthcare

Number of healthcare SPACs



Notes: Includes announced deals that are completed or pending, with data subject to change; deal value doesn't account for deals with undisclosed values
 Source: SPAC Research

Outlook: strong investor demand, though IPOs and SPACs may taper

In the next few years, we expect many large assets will come to market due to continual roll-up activity, especially in diagnostics, specialty providers, and pharma and medtech services. Competition for assets is bound to increase as sponsors and corporate investors look to broaden their portfolios, especially in the life sciences, biopharma, and provider sectors.

On the heels of the successful exit of Carlyle and H&F from PPD, where a long holding period and continued investment produced a great return for both sponsors, we may see other firms double down in their investments and hold assets for longer periods.

However, if regulation tightens and the competition for SPAC targets increases further, we expect a number of healthcare SPACs to fail to make a transaction, which could impact this exit vehicle's opportunities in 2022 and beyond. Moreover, while IPOs were up this year, they were the exit strategy with the slowest growth. Combined with the fact that many expensive healthcare assets that went public in 2021 continue to trade below par value, this may dampen the attractiveness of exiting via public markets in the future.



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Overview

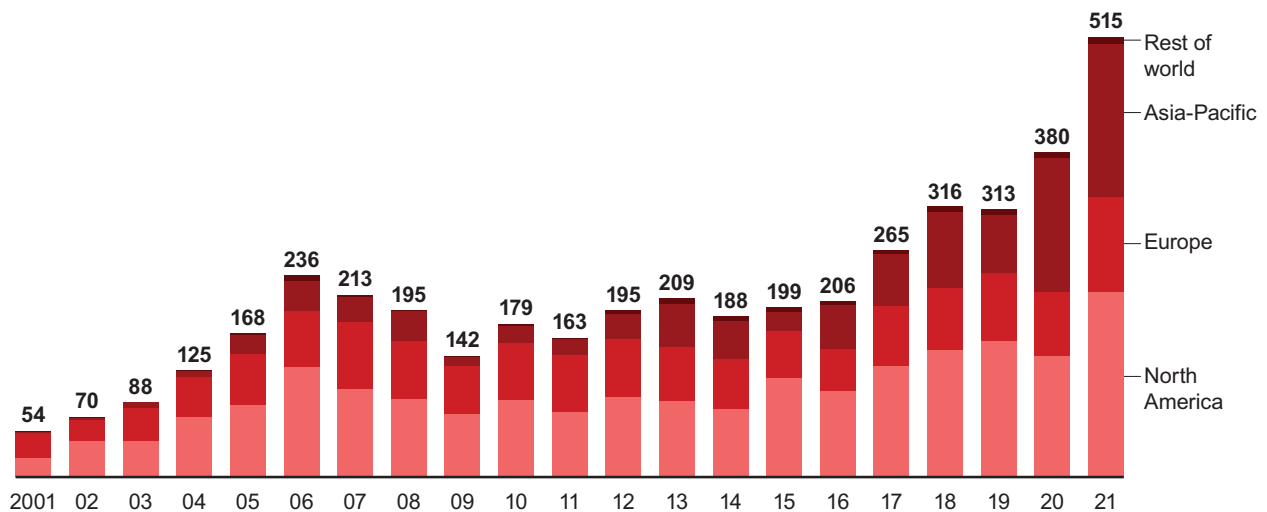
North America: Retaining its No. 1 position in disclosed deal value, the region also reclaimed the top ranking for private equity deal volume from Asia-Pacific. Deal count in 2021 rose to 216, up from 142 in 2020 (see Figure 1). Disclosed value surged to \$107.5 billion from \$34.7 billion and was more than twice the previous high of \$46.7 billion in 2019. Average disclosed value soared to \$1.5 billion from \$530 million in 2020, largely due to more megadeals, including the \$34 billion Medline deal and \$17 billion Athenahealth deal.

Europe: Deal count rose to 112 in 2021, a record, from 75 the year prior. Disclosed value also jumped to \$26 billion from \$14 billion, surpassing the previous high of \$19.7 billion in 2019. Average disclosed value increased to \$840 million from \$520 million in 2020, with 8 deals of more than \$1 billion, compared with 5 in 2020.

Asia-Pacific: Deal volume and value maintained the huge gains of 2020. Deal volume rose to 179 from the previous record of 156 in 2020. Disclosed value increased to \$17.8 billion from \$16.9 billion the year prior. There were 3 deals valued at over \$1 billion, compared with 2 in 2020 and 4 in 2019.

Figure 1: Healthcare deal activity grew in every region

Global healthcare buyout deal count



Notes: Excludes spin-offs, add-ons, loan-to-own transactions and acquisitions of bankrupt assets; numbers based on announcement data; includes announced deals that are completed or pending, with data subject to change; deal value doesn't account for deals with undisclosed values; total buyout deal values updated based on Dealogic 2021 sponsor classifications
Sources: Dealogic; AVCJ; Bain analysis

China contributed 66% of the region's deal volume, up slightly from 63% in 2020. The macroeconomic trends that fueled Asia-Pacific's unprecedented surge in healthcare private equity activity in 2020, such as a shift to universal coverage in several large markets and government policies supporting local healthcare champions, largely persist, so the slight deceleration in 2021 may signal a reversion to a more normal, albeit strong, growth.

Rest of the world: As in years past, healthcare private equity activity was limited in the rest of the world. Activity reached just 8 deals, level with 2020, mainly in Africa and South America.



Geography Trends

Healthcare Private Equity in North America: Macro Trends Broaden Investment Opportunities

Capital is flowing to innovative technologies and business models across sectors.

At a Glance

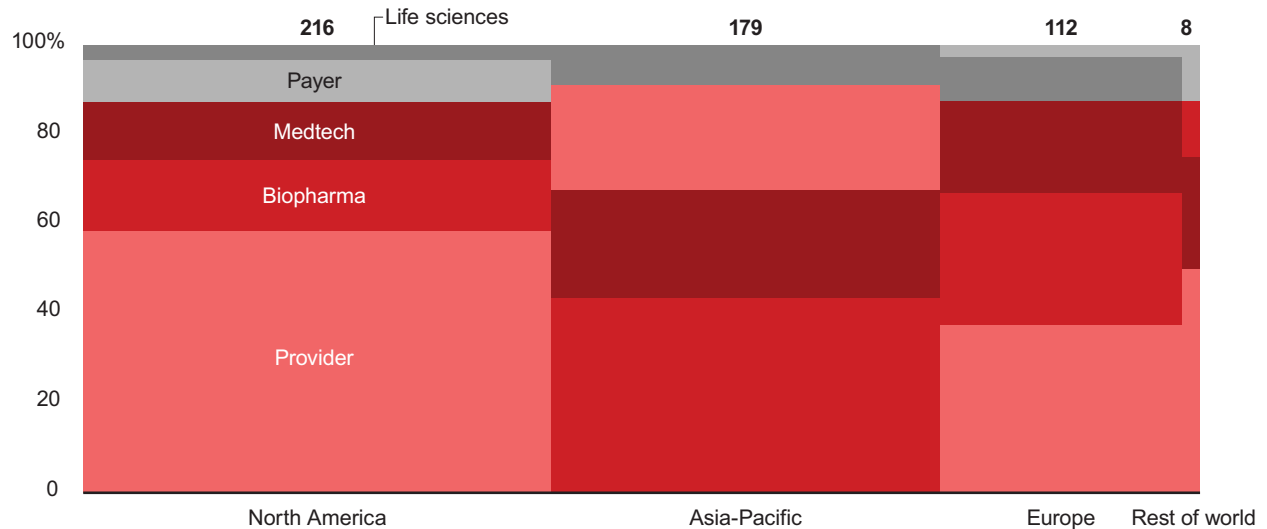
- ▶ North America posted record healthcare deal activity, including several megadeals.
- ▶ Providers remained the most active subsector, fueling the growth of next-generation primary care models.
- ▶ Healthcare IT activity surged as data platforms changed hands at unprecedented valuations, and growth-equity investors poured funds into digital health.
- ▶ Favorable demographic trends and a more benign regulatory environment in the US will continue to pique investors' interest.

Despite supply chain disruptions, inflation, and the onset of Covid-19 variants raising uncertainties in the broader economy, 2021 turned out to be a record year for healthcare private equity in North America (see Figure 1). Several favorable macro trends aligned to broaden the opportunities for value creation:

- An aging population and the rising prevalence of chronic disease are driving steady growth in demand for healthcare.

Figure 1: North America outpaced Asia-Pacific for the most healthcare deal activity

Global healthcare buyout deal count, 2021



Notes: Includes related services for each sector; excludes spin-offs, add-ons, loan-to-own transactions and acquisitions of bankrupt assets; numbers based on announcement data; includes announced deals that are completed or pending, with data subject to change; deal value doesn't account for deals with undisclosed values; total buyout deal values updated based on Dealogic 2021 sponsor classifications
Sources: Dealogic; AVCJ; Bain analysis

- Maturing value-based payment models, more than a decade since passage of the Affordable Care Act in the US, continue to create openings for companies that reimagine care delivery with a focus on patient experience, health outcomes, and costs.
- The pandemic has accelerated the use of digital tools that use big data and machine learning in every health sector, helping to make many operations more efficient and spur innovation. The result could be better health outcomes at a lower cost.
- Since 2010, the median internal rate of return for private equity healthcare deals has consistently exceeded the all-industry median, attracting greater allocation to healthcare.

In line with these trends, private equity investors doubled down in North America during the year.

Providers: next-generation primary care on the rise

As in prior years, the provider sector contributed the majority of deals in North America, with a record 126 deals, or 58% of the total, up from 52% in 2020. Disclosed deal value surged to an all-time high of \$38.5 billion from \$19.3 billion in 2020, largely due to the acquisition of Athenahealth for \$17 billion.

A big shift in care delivery, particularly in the US, underpinned much of the activity. The country's mix of huge healthcare spending, a fragmented insurance industry with large-scale commercial payers, and a high burden of chronic disease create unique value creation opportunities.

In the US, the mix of huge healthcare spending, a fragmented insurance industry with large-scale commercial payers, and a high burden of chronic disease create unique value creation opportunities.

Next-generation primary care models in the US attracted a flood of private equity sponsor and corporate deal activity. The common threads are delivering a superior, often tech-driven, customer experience, along with reaching a strong position in risk-bearing payment. Retail giants and commercial payers made big strategic investments here. Walgreens Boots Alliance acquired VillageMD for \$5.2 billion to accelerate its opening of at least 600 Walgreens primary care practices by 2025. Cigna, which acquired MDLive, launched virtual-first primary care health plans with select employers. And Anthem joined Blackstone Growth and K Health to form Hydrogen Health, which provides on-demand virtual primary care powered by artificial intelligence (AI).

Beyond primary care, consolidation continued in retail health and specialty physician groups. As in Europe, veterinary care attracted significant investments. For example, JAB Investors-backed National Veterinary Associates acquired Ethos Veterinary Health for \$1.7 billion and SAGE Veterinary Care for \$1.25 billion, two national networks of specialty veterinary clinics. Specialty dental providers attracted more investor attention than general dental firms. For instance, Harvest Partners bought Affordable Care, a US chain of denture and implant services providers, for \$2.7 billion. And Thomas H. Lee Partners joined Linden Capital Partners as equal investors in orthodontics chain Smile Doctors with a \$2.4 billion valuation.

Roll-ups of physician groups continued, among even more specialties. Activity remained strong in established categories such as ophthalmology and gastroenterology, while investment surged into new, more fragmented, and more hospital-owned specialties, such as cardiology and orthopedics. These specialties stand to benefit from Medicare approval to reimburse more procedures for ambulatory surgical centers (ASCs), value-based care's growth across insurance types, and physician and patient preference for outpatient surgery centers. In cardiology, Webster launched Cardiovascular Associates of America in partnership with Cardiovascular Medicine. And in orthopedics, Welsh, Carson, Anderson & Stowe acquired Resurgens Orthopaedics.

As Covid-19 raised patient and provider acceptance of at-home care and triggered CMS's Acute Hospital Care at Home initiative, which reimburses hospitals for inpatient-level care at home, investors found opportunities to invest in the home-based trend. Notably, Webster Equity Partners bought Honor Health Network, a Medicaid-focused home care services company, from Walnut Court Capital. And health systems Mayo Clinic and Kaiser Permanente invested \$100 million in home-hospital service provider Medically Home.

Payers: improving the customer experience and tackling social determinants

Payer activity held steady at 20 deals for both 2021 and 2020, which was a big increase from prior years. Disclosed value surged to \$15 billion from \$4.4 billion in 2020 in the wake of three major deals: Nordic Capital, Insight Ventures, and 22C Capital's buyout of Inovalon for \$7.3 billion; CVC's acquisition of a controlling stake in ExamWorks for \$4 billion; and Veritas's purchase of HMS Holdings for \$3.3 billion.

The largely private insurance market in the US causes North America to remain the hub of global payer deals, contributing 83% of global volume and over 98% of disclosed value. Not captured in our buyout data, major US commercial payers made numerous strategic acquisitions, notably of providers, to strengthen control of the healthcare value chain as they build diversified healthcare services businesses.

Payer services deals focused on IT platforms that employ data to improve both the customer experience and health outcomes through targeted member engagement. The Inovalon deal, for instance, involves a healthcare data platform offering a range of solutions that improve member health outcomes. And on the heels of 2020 acquisitions of Altruista and The Burgess Group, Blackstone portfolio company HealthEdge acquired Wellframe, a software platform that leverages real-time member data and AI to help payers identify when and how to intervene with high-risk members.

The growth of payment models that reward health outcomes and value, particularly for Medicare and Medicaid patients, has attracted companies that help payers and risk-bearing providers direct healthcare dollars to nonmedical social factors.

Investors also turned to companies that tackle social determinants of health in the US. The paradox of high healthcare costs with poor health outcomes stems in part from limited spending on social services such as food assistance and housing. The growth of payment models that reward health outcomes and value, particularly for Medicare and Medicaid patients, has attracted companies that help payers and risk-bearing providers direct healthcare dollars to nonmedical social factors. For

example, Unite Us, which connects patients with social services, raised \$150 million to expand its nationwide social care infrastructure, in a round led by ICONIQ Growth. Also, Papa, a senior care platform that addresses loneliness, raised \$60 million in a Series D round led by SoftBank.

Healthcare IT: revenue cycle management and digital health

After a dip in 2020 to 38 deals, healthcare IT (HCIT) activity rose to a record 59 deals in 2021. Disclosed value almost tripled to \$35.7 billion from \$13.3 billion in 2020, after the Athenahealth and Inovalon megadeals. The year also brought a sharp rise in the number of HCIT growth-equity investments. The US accounted for almost 80% of global HCIT volume and more than 90% of value, and the region's large independent health systems, employer-sponsored insurance, and robust tech ecosystem should continue to attract an outsize share of IT-focused investment.

Revenue cycle management (RCM) infused the megadeals. Athenahealth, a cloud-based software company that offers electronic medical-record software and revenue cycle management software and services, was acquired by Hellman & Friedman and Bain Capital for \$17 billion, the largest HCIT deal ever and an impressive exit for Veritas Capital and Evergreen Coast Capital, which bought Athenahealth for about \$5.7 billion in 2018. On the corporate side, US payer UnitedHealth Group is set to acquire Change Healthcare, which offers RCM and clinical information exchange services, for an estimated \$13 billion.

Growth-equity investments fueled the expansion of two types of North American HCIT companies: digital health platforms that contract directly with employers and AI tools that make the operations of various healthcare entities more efficient.

Growth-equity investments fueled the expansion of two types of North American HCIT companies: digital health platforms that contract directly with employers and AI tools that make the operations of various healthcare entities more efficient. Behavioral health-focused digital platforms benefited from strong growth-equity investor interest as demand rose for mental healthcare services.

For example, Spring Health, an app-based, on-demand mental health provider, closed a \$190 million Series C round led by Kinnevik. Other digital behavioral health platforms also received growth equity funding including BetterUp, Ginger/Headspace, Lyra Health, and Modern Health. Growth equity also poured into HCIT assets that leverage big data and AI to make operations more efficient. In the provider and payer sectors, Olive, an AI-as-a-service company that automates back-end processes, raised \$400 million in a round led by Vista Equity Partners and Base10 Partners. In biopharma, insitro,

which uses machine learning to accelerate drug discovery and development, raised \$400 million in a Series C round led by the Canada Pension Plan Investment Board.

Like the rest of the world, North America saw significant investment in drug development and commercialization services.

Biopharma and life sciences: tools and services to advance therapeutics

North American biopharma and life sciences deals reached a record 42 deals in 2021, up from 28 in 2020. Deal value rose to \$15.2 billion from \$8.9 billion, driven by large deals including the EQT and Goldman Sachs purchase of clinical research organization Parexel for \$8.5 billion, and Altaris Capital Partners' purchase of Perrigo's generics business for \$1.6 billion.

Like the rest of the world, North America saw significant investment in drug development and commercialization services. That included next-generation clinical trials, as shown by the Thoma Bravo acquisition of clinical trial software provider Greenphire, and the ERT acquisition of Bioclinica, a technology company focused on clinical trial data. In commercialization services, Welsh, Carson, Anderson & Stowe portfolio company Managed Markets Insight & Technology merged with Hg Capital portfolio company Evaluate to strengthen their leadership in pharma commercial intelligence. North America also saw notable activity in cell and gene therapies with the growth investments in Caris Life Sciences and ElevateBio.

North American life sciences deals focused on research and bioprocessing instruments as well as consumables. No major investments in diagnostic lab companies took place, despite significant investments in Europe and Asia-Pacific. Instruments powering the research underlying cell and gene therapies attracted several investments. For example, Carlyle acquired Unchained Labs, whose products streamline biologic and gene therapy research, for \$435 million. And Vitruvian Capital invested in MaxCyte, whose electroporation instruments accelerate development of cell and gene therapies.

Medtech: the Medline buyout dominates deal value

Deal volume in the region rose modestly to 28 in 2021, up from 19 the year prior, while disclosed deal value surged to \$38.8 billion from \$2 billion in 2020, because of the \$34 billion Medline megadeal, the largest healthcare buyout ever.

Similar to other regions, North America featured large investments in assets that make medical equipment more reliable and cost-effective. As providers face continued pressure to reduce costs, investors spotted ways to help, such as the Medline deal, and the \$1.3 billion buyout of PartsSource.

And Hellman & Friedman acquired cardiology and endovascular devices manufacturer Cordis from Cardinal Health.

Nevertheless, private equity continues to face stiff competition from strategic buyers, suppressing the opportunities for medical technology assets.

Demographic and regulatory tailwinds

The tailwinds propelling North American healthcare assets show no sign of abating. Demographic trends, notably an aging population and increasing rates of chronic disease, will persist. The region's high healthcare spending, commercial payer landscape, technology ecosystem, and dynamic capital markets create unique opportunities for innovators. Moreover, we expect the more benign regulatory environment will continue, as will the uniquely favorable reimbursement landscape in the US. As a result, we anticipate acceleration of several trends that have already garnered investor interest.

- Advanced primary care models that improve on patient experience, whole person health outcomes, and costs will grow rapidly, putting pressure on large brick-and-mortar health systems to reimagine how they deliver care.
- Value-based care plays will extend beyond primary care to specialty care, redesigning the management of all sorts of conditions to deliver better health outcomes at a lower cost.
- Care will continue to shift out of the hospital to ASCs, as well as patient homes and mobile devices, redefining how patients interact with care.
- The line between payers and providers will blur further, as more companies try to capture the profit and health-outcome synergies of delivering and financing care together.
- Innovation in cell and gene therapies, along with mRNA and other platform technologies, will spur growth in biopharma and life sciences while delivering hope to patients suffering from previously untreatable conditions.
- Across the industry, assets that leverage data and AI to streamline operations will gain ground.



Geography Trends

Healthcare Private Equity in Europe: Funds Take On More Risk in a Hot Market

Investors look for companies that can easily scale up across borders.

At a Glance

- ▶ Europe broke all records in 2021, with deal count growing by 49% and disclosed value rising 86%.
- ▶ Retail health segments such as veterinary care, dental, and fertility were investor favorites, with interest gradually shifting toward less consolidated retail segments.
- ▶ Many funds are allocating a greater share of their capital to healthcare, making for riskier investments in a sellers' market.
- ▶ Pan-European companies will be relatively insulated from regulatory and reimbursement risk in any one country and attract outside investor interest.

Large deals made a comeback in Europe during 2021, with the healthcare buyout market heating up to record highs. Deal count rose to 112 from 75 in 2020, and disclosed deal value surged to \$26 billion from \$14 billion the prior year. Four deals over \$2 billion accounted for 61% of disclosed value.

In line with global trends, European limited partners have been allocating a greater share of their funds to healthcare, attracted by the industry's relatively high returns over time and resilience to economic cycles. In this sellers' market, acquisitions became increasingly competitive, and investors increasingly front-loaded or curtailed direct diligence, taking on more risk.

Let's review how each sector fared during the year.

Healthcare providers: retail health rebounds with megadeals in veterinary care

Provider deals accounted for the greatest share of activity in Europe, as the count rose to 42 from 28 in 2020. But providers accounted for only \$5.8 billion in disclosed value, down from last year's record \$9.4 billion.

After a lockdown-induced slump in 2020, retail health returned as an investor favorite once patient volumes rebounded. Most assets have traded hands among private equity firms many times, confirming the opportunities for value creation through further consolidation as well as business optimization. Large deals occurred in veterinary care, a mature and consolidated segment in many European markets, as demand rose for pet care and associated services. Notably, Silverlake and Nestlé purchased part of EQT's stake in Independent Vetcare, a large UK-based practice group that operates in 12 European countries, for \$4.2 billion. Activity increased in dental and fertility, which are less consolidated segments in most European markets, as investors looked for opportunities in more fragmented retail health segments. Intermediate Capital Group acquired Godt Smil, a Danish chain of clinics. And CVC acquired a stake in FutureLife, a pan-European in vitro fertilization provider, alongside the company's current investor, Hartenberg Holding.

Large deals occurred in veterinary care, a mature and consolidated segment in many European markets, as demand rose for pet care and associated services.

Following the pandemic-accelerated shift of care out of hospitals as Covid-19 patient volumes surged and elective procedures were canceled, home health services made attractive targets. Many home care providers compete in only one major European market, given regulatory, reimbursement, and language differences that make cross-border scaling difficult. For example, Amira Partners bought PflegeButler Häusliche Pflege mit Stil, a German provider of home health services and assisted living facilities. And Palatine Private Equity acquired Routes Healthcare, a UK home health provider, from Key Capital Partners.

Biopharma and life sciences: megadeals for OTC manufacturers, commercialization services, and lab providers

Biopharma and life science tools and diagnostics accounted for 74% of disclosed deal value in Europe, rising to \$19.3 billion from \$4.1 billion in 2020. Six deals over \$1 billion accounted for roughly 90% of the disclosed value. Likewise, biopharma and life sciences deals increased to 44 from 37 in 2020.

With its strong academic and scientific talent and infrastructure, Europe continues to produce many innovative therapeutic and life sciences companies. Investment during the year flowed along three themes: over the counter (OTC) and generic medicine manufacturers, contract development and manufacturing organizations (CDMOs), and clinical lab service providers.

With its strong academic and scientific talent and infrastructure, Europe continues to produce many innovative therapeutic and life sciences companies.

OTC manufacturers attracted interest for their predictable revenues, follow-on acquisition opportunities, and potential for revenue growth through branding campaigns, which are easily executed during a holding period. Notably, CVC acquired Cooper Consumer Health (Coopération Pharmaceutique Française), a French manufacturer and distributor of OTC products, for \$2.6 billion from Charterhouse Capital.

European generic manufacturers continued to benefit from structural and regulatory factors in countries that sustain comparatively high generics prices and limit competition from imports. Reference pricing systems in many countries limit the price difference between generic and branded drugs, while preventing a pricing race to the bottom. In this context, Nordic Capital bought Advanz Pharma, a generic manufacturer of specialty medicines, for \$846 million. We anticipate a steady flow of deals in the coming years, given existing private equity investments in Stada, Zentiva, Recordati, and others, as well as announcements of strategic reviews that could set off another wave of major transactions.

On the supply side, private equity funds asserted their clout among European CDMOs. Several assets changed hands, with SK Capital acquiring a majority stake in Seqens, an active pharmaceutical ingredient manufacturer, from Eurazeo before merging it with its portfolio company Wavelength Pharmaceuticals. And Bridgepoint portfolio company PharmaZell acquired NovaSep, a France-based CDMO focused on complex small molecules and antibody drug conjugates, from Silver Point Capital and BlackRock. Additionally, EQT sold Fertin Pharma, a Danish CDMO specializing in oral and intraoral delivery technologies, to Phillip Morris International for approximately \$760 million.

Clinical lab service providers made for large deals in 2021, as Covid testing buoyed sales and investors were enticed by recession-resistant revenues and prospects of pan-European platforms. EQT purchased Cerba HealthCare from Partners Group Holding for \$5.3 billion. Goldman Sachs, OMERS Infrastructure, and AXA IM Alts acquired Amedes Holding for \$1.8 billion. And A.P. Moller Holding bought Unilabs from Apex Partners. Beyond these major deals, lab services providers diversified

through strategic acquisitions of nonlab service companies. For example, Cerba HealthCare acquired Viroclinics-DDL, a CRO specializing in drug and vaccine development for virus infections. And consolidation of laboratory equipment and consumable suppliers accelerated, mostly in undisclosed deals.

Medtech: deal activity rose amid new regulations

Deals in the medtech sector returned to a more normal level in 2021 after the pandemic-dampened volumes in 2020. The count rose to 23 from 10 in 2020, and disclosed value increased to \$670 million from \$430 million the year prior.

After being delayed a year by Covid-19, the European Union's new Medical Devices Regulation (MDR) took effect in May 2021, with full compliance required by 2025. Despite recertification costs and the additional administrative burden, MDR ultimately should benefit patients by establishing stricter safety and quality standards for devices and more transparent information on devices. MDR thus could lead to changes in market structure and competitive dynamics.

MDR ultimately should benefit patients by establishing stricter safety and quality standards for devices and more transparent information on devices.

Activity increased in specialty contract manufacturing organizations (CMOs). Niche CMOs tend to be insulated from pricing pressure because of their differentiated manufacturing expertise. The Canada Pension Plan Investment Board Fund and BC Partners Fund XI jointly acquired CeramTec, a German CMO of high-performance ceramics for orthopedic implants, from BC European Capital X and other coinvestors.

Healthcare IT: opportunities despite structural barriers to cross-border expansion

Eight healthcare IT (HCIT) deals closed during the year, compared with 5 in 2020. Covid-19 accelerated adoption of digital interfaces between caregivers and patients, along with digital systems to enhance productivity. The EU and numerous national governments also have earmarked funds and passed legislation to encourage healthcare's digital transformation.

Most deals were either undisclosed or add-ons to private equity-owned existing platforms. For example, Five Arrows and TA Associates-backed RLDatix acquired Allocate, which sells nurse and

doctor staffing software in the UK, from HG Capital. CVC portfolio company System C acquired WellSky International, a UK provider of clinical software in pharmacy and electronic prescribing and medicines administration from TPG and Leonard Green & Partners.

Despite these deals, there's a broader backdrop to consider, as healthcare IT in Europe still wrestles with longstanding structural issues. For one thing, national borders often limit scalability, especially for core large-scale electronic patient record and patient administration system infrastructure, because different reimbursement systems, regulations, and languages tend to require considerable investment in recoding, product modification, and customization as well as on-site deployment. While technical solutions to facilitate international expansion have emerged, they have yet to produce meaningful revenue growth for HCIT firms expanding across borders. Another challenge involves public budget constraints, which prevent hospitals and clinics across Europe, often operating in the red, from investing further in HCIT solutions despite the potential operational efficiencies.

Moreover, the degree of centralization of IT system procurement in each country affects the sector's growth. Countries with less centralized healthcare systems, such as Germany, might take longer to adopt digital tools, while countries with more centralized healthcare systems, as in the UK and France, may favor the largest platforms, motivating further consolidation of providers at a national level.

None of these issues will prevent entrepreneurs and funds from investing time, money, and resources into healthcare IT. But investors' challenge will be selecting and backing the likely winners from a vast array of smaller vendors.

The outlook favors assets that operate across borders

European healthcare assets that are global market leaders in innovative technologies will remain attractive targets, comparatively insulated from regulatory and reimbursement risk in any one country. Innovative CDMOs, in particular, will attract investor interest.

Europe will remain a more attractive geography for generic manufacturers, given structural and regulatory advantages that support robust pricing. Generic manufacturers, particularly those with current private equity owners, will likely elicit large deals in the coming years.

Retail health looks set to remain a favorite provider segment. As consolidated segments, such as veterinary care or day surgery centers, become less interesting or are acquired by corporate investors, other more fragmented segments (dental, fertility, aesthetics, physical therapy) will become more attractive.

Taking a wider view, healthcare IT will probably benefit in the coming years as structural limits on scalability diminish. In 2022, we anticipate more deals of large hospital software firms to advance consolidation at national and possibly international levels. Investment in data management solutions will likely rise, in part to exploit the potential of available data in the context of strict regulations.



Geography Trends

Healthcare Private Equity in Asia-Pacific: A Multiyear Growth Trajectory

Large-scale and tech-savvy assets get the lion's share of investment.

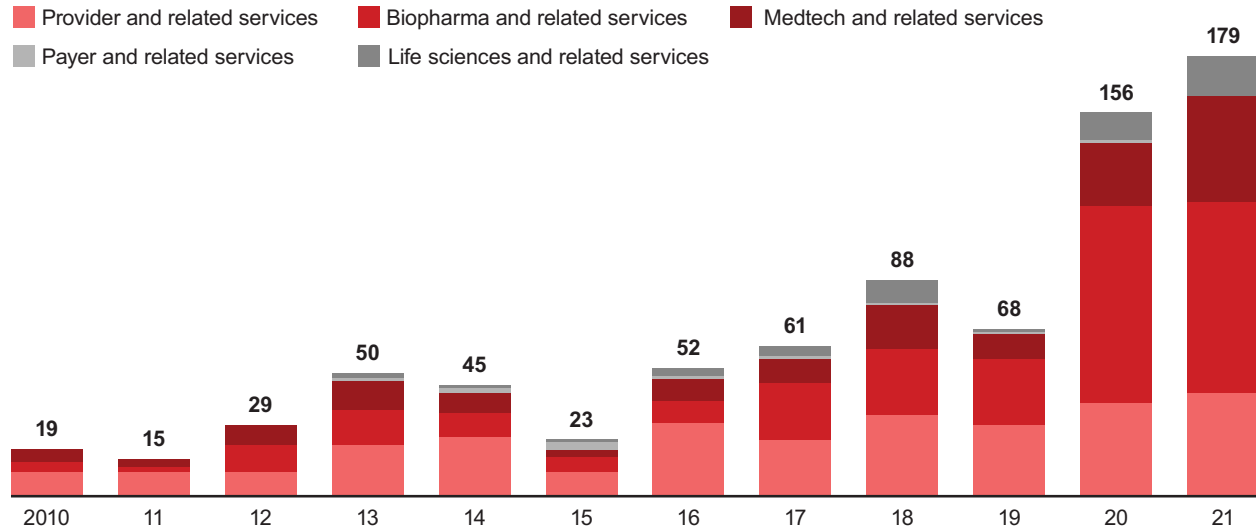
At a Glance

- ▶ Deal volume and deal value both rose in 2021 over the steep increases the prior year.
- ▶ Favorable consumer behaviors and government regulations have helped build private equity markets, especially in India, China, and Southeast Asia.
- ▶ Biopharma continues to make up the largest share of activity, though life sciences tools and medtech posted the largest annual growth, and providers showed sustained activity.
- ▶ The region attracted more sources of capital, including growth-equity and infrastructure funds.

The number of transactions in 2021 across Asia-Pacific increased to 179 from 156 in 2020, and disclosed value rose slightly to \$17.8 billion, from \$16.9 billion, as the region continued its multiyear growth trajectory (see *Figure 1*). Asia-Pacific markets are seeing increased consumerism and willingness to spend in healthcare, which has fueled activity, especially with investments in building a more robust consumer-centric digital health environment. Additionally, government regulations that support growth, combined with the maturation of many assets, continue to foster an environment for a reasonably strong year for private equity in India, China, and Southeast Asia.

Figure 1: In Asia-Pacific, medtech and life sciences tools grew the most

Number of Asia-Pacific healthcare buyouts



Notes: Excludes spin-offs, add-ons, loan-to-own transactions and acquisitions of bankrupt assets; based on announcement data; includes announced deals that are completed or pending, with data subject to change; deal value does not account for deals with undisclosed values; total buyout deal values updated based on Dealogic 2021 sponsor classifications
Sources: Dealogic; AVCJ; Bain analysis

Consumer behavior, government incentives, and new sources of capital

Healthcare is rapidly becoming more consumer-centric, with people more willing to spend out-of-pocket, as well as demand a better customer experience and better whole health outcomes. For example, more patients in Asia-Pacific are using private health systems because they value the experience and level of comfort.

Governments in the region are spurring this behavior through regulations generally supporting private healthcare. As the environment for healthcare assets improves, private equity has flowed in. Local deal volume thus rose in 2021 to 179, up from 156 in 2020, while cross-border deals plunged to 22 from 42 the year earlier.

The region also attracted more sources of capital, including growth-equity and infrastructure funds. The latter have widened their net to capture healthcare assets, and funds such as EQT Infrastructure and Infratrill made large plays for Icon Group and Pacific Radiology Group, respectively. Infrastructure funds have more access to capital, and they’re now seeking to take advantage of the attractive returns and inelastic demand in healthcare to diversify their portfolios.

Growth equity, meanwhile, has gained popularity as maturing assets require more capital to scale up, and as the region hungers for more sophisticated IT.

Healthcare providers: advanced delivery models and specialty providers

Advanced healthcare delivery models, including e-pharmacies and direct-to-consumer vendors, continue to attract investment, particularly as Covid-19 has accelerated the adoption of at-home care.

Consider digital-first and tech-enabled care, which were big in India. This activity was primarily driven by growth-equity investments such as API Holdings, an integrated digital healthcare platform, which raised \$323 million from Prosus Ventures. API Holdings also is the parent of TPG-backed PharmEasy, an Indian online pharmacy and medical store, which filed for an initial public offering in 2021. Additional activity focused on telemedicine; Temasek-backed Halodoc raised \$80 million in a Series C fund-raising round, and Singapore's Doctor Anywhere raised \$66 million in a Series C round led by Asia Partners.

Growth equity also played a role in assets focused on alternative sites of care, specifically in homes. Activity increased throughout Asia-Pacific, including Singapore's Homage, which focuses on home care for chronic illnesses and received \$30 million in Series C funding led by Temasek, and Australia's Mable, an at-home aged care and disability support services company, which received a \$100 million investment from General Atlantic.

Brick and mortar can still thrive, however, and primary care hospitals are focused on reducing costs and streamlining operations. General hospitals remain important throughout the region, through such acquisitions as Malaysian hospital management group Aurelius Healthcare, in which Navis took a majority stake, and New Frontier Health Corporation, including the Chinese hospital group United Family Healthcare, which was taken private by a consortium of investors. Among the deals involving Indian business-to-business services for providers, Baring Private Equity purchased Hinduja Global Solutions, a business process management provider covering the entire life cycle of a payer organization, for \$1.2 billion.

Brick and mortar can still thrive, and primary care hospitals are focused on reducing costs and streamlining operations.

Specialty providers also garnered a lot of interest in 2021, including the EQT Infrastructure's acquisition of Icon Group, Australia's largest integrated cancer care provider, and Japan's Tsukui Holdings selling a majority stake to MBK Partners.

Providers have encountered stiff cost pressures throughout the pandemic, and are trying to rein in expenses through outsourcing specialist services such as pathology and radiology. In turn, that spurs consolidation and further investment in these service providers. For example, Infratil bought a stake

in Pacific Radiology Group, the largest private diagnostic imaging service provider in New Zealand, on the heels of its diagnostics acquisition of QScan in 2020. Some companies also integrated offline and online operations, such as sponsor-backed PharmEasy buying 66% of Thyrocare, one of the largest pathology lab chains in India.

Biopharma investors in the region focused mainly on services in the drug development and commercialization process, especially on earlier-stage development that benefits from government support and the influx of new capital.

Biopharma: competition from capital markets cool dealmaking

Biopharma spiked in the region during 2020 to 81 deals and declined only slightly to 78 in 2021, despite greater competition with capital markets. Similarly, disclosed deal value decreased in 2021 to \$8.7 billion from \$8.9 billion, but overall, Asia-Pacific maintained the record activity of 2020.

Biopharma investors in the region focused mainly on services in the drug development and commercialization process, especially on earlier-stage development that benefits from government support and the influx of new capital. This logic informed GIC's and Sequoia Capital's acquisition of a more than 10% stake in Novotech Health Holdings, an Australian-based contract research organization, from TPG Capital. Novotech proved the investment thesis for pharma services, and there were several deals conducted on the heels of TPG's successful exit, including Riverside's investment in Avance Clinical, Blackstone acquiring Nucleus Network from Crescent Capital, and Cobepa-backed BioAgilytix acquiring 360biolabs.

India hosted activity in pharma commercialization and manufacturing. One such deal was True North's purchase of a minority stake in Anthem Biosciences, an integrated drug discovery, development, and manufacturing services provider. Another was Advent International buying a controlling stake in ZCL Chemicals, which manufactures active pharmaceutical ingredients and advanced intermediates.

Life sciences tools: centered on diagnostic equipment and services

Life sciences buyouts in the region surged to 16 in 2021 from 11 in 2020, most involving diagnostic equipment and services. Key investments include Catterton's \$181 million investment in Japan's PHC Holdings, which manufactures equipment for medical diagnostics, and the \$150 million funding led by ABC International for WuXi Diagnostics, a Chinese enabling platform for early diagnostic and clinical insights.

Medtech: China's local firms prevail

Governmental funding and incentives for home company innovation continued to spur medtech activity in Asia-Pacific, particularly China. Deal volume exploded in 2020 to 26 deals from 10 the prior year, and rose substantially again in 2021 to 43 deals, 34 involving Chinese assets. Many of these local manufacturers compete in high-tech fields such as heart valves and cardiac implants. For instance, NewMed Medical, a Shanghai-based artificial heart valve system supplier, raised over \$100 million in its Series C round led by Temasek, and medical devices developer Hangzhou Valgen Medtech has raised hundreds of millions of dollars in a Series B round led by DCP and Sequoia Capital China.

Healthcare IT: the digital transformation continues

PE firms logged only 7 healthcare IT deals in 2021, slightly above the 5 in the previous year. Many of these investments and acquisitions fueled an ongoing digital transformation, particularly in India and Southeast Asia. Growth equity participated, mostly in the provider sector, but activity also included biopharma deals such as the \$255 million Series C investment in the Hong Kong company Insilico Medicine, led by Warburg Pincus. Corporate acquirers landed 159 deals, including 3 exit opportunities for sponsors, such as Affinity Equity Partners' \$257 million exit of MedicalDirector, an Australian clinical and practice management software, by selling to Telstra Health.

Outlook: biopharma and medtech could draw more capital

Investors in Asia-Pacific will likely keep their eyes trained on the biopharma and medtech sectors. A few themes with legs include the continued adoption of digital-first and other advanced provider models, drug development and commercialization services, and more mature assets coming to market with government assistance.



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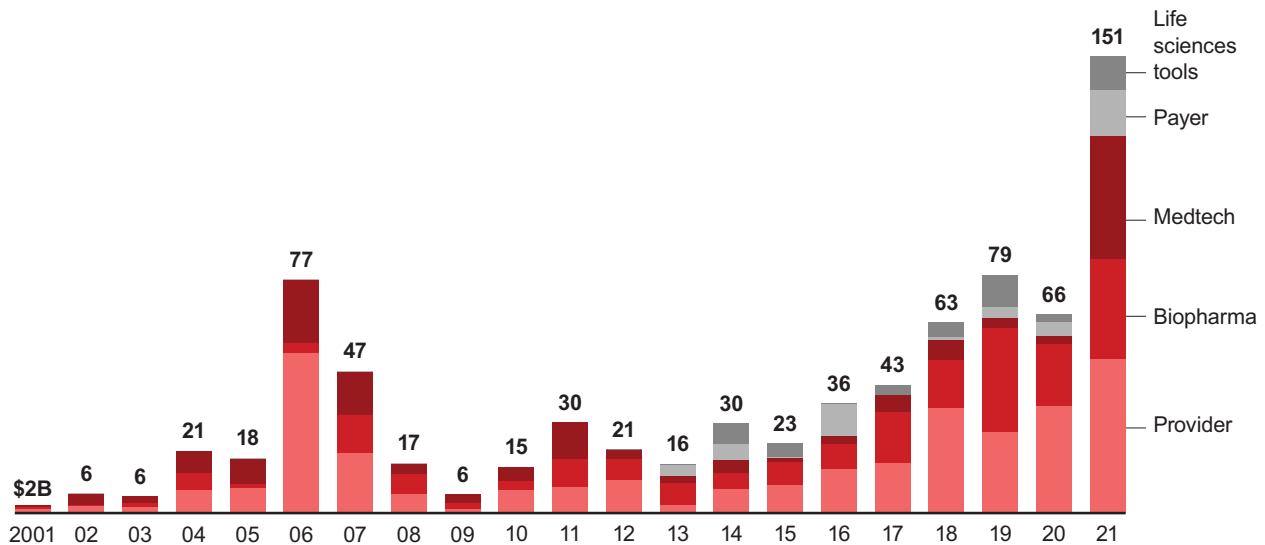
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Overview

Every healthcare sector rose in deal volume and value in 2021 (see Figure 1), with the provider sector taking the top spot in both categories. Biopharma volumes also rose, but unlike last year, trailed providers. Healthcare payers had the slowest growth in deal volume, due to the limited number of available assets. Medtech volume and value soared after the largest deal in healthcare buyout history. For the first time, this report breaks out life sciences tools, which drew more, and more varied, investments, in 2021. Healthcare IT surged as the digital transformation accelerated across sectors.

Figure 1: Disclosed deal value surged to a record, buoyed mainly by medtech and payer acquisitions

Global healthcare buyout deal value (\$B)



Notes: Dollar figures are rounded; includes deals in related services for each sector; excludes spin-offs, add-ons, loan-to-own transactions and acquisitions of bankrupt assets; based on announcement data; includes announced deals that are completed or pending, with data subject to change; deal value does not account for deals with undisclosed values; total buyout deal values updated based on Dealogic 2021 sponsor classifications; life sciences is broken out from 2012 on
Sources: Dealogic; AVCJ; Bain analysis



Sector Trends

Biopharma: Traditional Pharma Services Lead the Way

Big deals roar back, especially in Europe.

At a Glance

- ▶ Record levels of capital flowed in 2021 to the biopharma sector, which returned to a prepandemic growth curve.
- ▶ The number of deals grew modestly, but buyout deal value surged about 65%.
- ▶ Investors continued to gravitate to traditional pharma services assets, limiting clinical and pricing risk.
- ▶ Strong fundamentals, along with the rise of Covid-19-specific therapeutics, should create ample opportunities in the years ahead.

In contrast to the market uncertainties of 2020, strong fundamentals in biopharmaceuticals produced a number of large deals in 2021, especially in Europe. Traditional pharma services led the way. Global deal volume rose slightly to 147 from 137 the year prior, and disclosed value surged to \$33 billion from \$20 billion. (Because this report breaks out the life sciences sector for the first time, the 2020 biopharma data varies from last year's report.)

European deal value more than quintupled to \$11.4 billion, on the back of buyouts such as UDG Healthcare at \$3.8 billion and Cooper Consumer Health at \$2.6 billion. The story was different in the Asia-Pacific region, which continued a steadier growth and maturation of healthcare private equity

activity. There, deal volume dipped only 3% from the prior year's record high. While Asia-Pacific still accounts for 53% of total transactions, private equity sponsors encountered more competition from corporate buyers and capital markets.

One twist during the year was the cluster of attempted public-to-private transactions. However, Advent International and Singapore's sovereign wealth fund withdrew their bid to acquire Swedish Orphan Biovitrum after an insufficient percentage of outstanding shares approved the bid, Reuters reported, highlighting the execution difficulties sponsors can face.

Traditional pharma services remain solid

Covid-19 caused investors to gravitate in 2020 to pharma services assets, particularly in North America and Europe, thereby limiting clinical and pricing risk. This trend continued in 2021, with contract research organizations (CROs), contract development and manufacturing organizations (CDMOs), and clinical site organizations (CSOs) generating significant investor interest.

In a departure from 2020, several large organizations with broad therapeutic or product portfolios were acquired by private equity sponsors. For example, Goldman Sachs and EQT paid \$8.5 billion to buy Parexel, a global CRO focused on developing and delivering innovative therapeutics. And Partners Group acquired the CDMO Pharmathen from BC Partners for \$1.9 billion. Several CSOs traded, headlined by GHO Capital's buyout of Velocity Clinical Research, which conducted trials during Operation Warp Speed in the US.

Private equity funds and corporate buyers also targeted niche CROs that serve small to midsize pharma companies, such as Novo Holdings' purchase of Altasciences, and the WindRose recapitalization of Veristat.

Corporate M&A activity blossomed as buyers sought to enhance drug development capabilities and become more efficient. Large deals include Icon's \$12 billion purchase of PRA Health Sciences to expand and modernize its clinical trial offerings, and Thermo Fisher's \$17.4 billion (excluding net debt) acquisition of PPD to expand offerings into the lab and CRO space.

IT specialists supporting commercialization and clinical trials

Outside of traditional pharma services assets, specialized services companies that leverage technology to support a specific stage of drug development have seen an uptick in acquisitions, particularly firms that streamline commercialization and modernize clinical trials. These include firms offering software, consulting, data, and analytics.

Market access for pharmaceuticals figured in General Atlantic's buyout of CareMetx, a specialty patient hub, and the merger of Evaluate (an HgCapital portfolio company) with Managed Markets Insight & Technology (a Welsh, Carson, Anderson & Stowe portfolio company) to strengthen their position in pharma commercial intelligence. The combined entity then acquired Panalgo, a health-

care analytics platform. Commercialization and pipeline consulting services also drew deals. GHO bought Clearview Health Partners; Trinity Life Sciences recapitalized with Kohlberg & Co.; and Clayton, Dubilier & Rice purchased UDG Healthcare, an advisory, communications, commercial, clinical, and packaging services firm, for more than \$3.7 billion.

Assets that help clinical trials to operate more efficiently and, in some cases, in a decentralized model, became more relevant during the pandemic. Take software and services that digitalize core trial operations such as patient recruitment. Deals here include Thoma Bravo's purchase of Greenphire, a provider of financial process automation for clinical trials; Astorg-backed ERT's merger with Bioclinica, which sells software for clinical trial management and e-consent; and Carlyle's \$430 million investment in Saama, a clinical analytics company that played a role in the fast-tracked Covid-19 vaccine trials.

Capital also flowed to companies that use data analytics to improve the design and execution of trials. Notably, Nordic Capital and Astorg acquired Cytel, a provider of statistical software for clinical trial design and execution. On the growth equity side, Goldman Sachs invested in 4G Clinical, a provider of randomization and trial supply management, and Coatue Management led an investment in Reify Health, a technology platform optimizing patient recruitment, with a valuation of \$2.2 billion.

Assets that help clinical trials to operate more efficiently and, in some cases, in a decentralized model, became more relevant during the pandemic.

Producers of over-the-counter products and generics

Companies that make over-the-counter (OTC) products or generic medications benefit from low R&D risk, predictable revenues, and the potential for follow-on acquisitions. For example, CVC acquired Cooper Consumer Health, which owns OTC brands, from Charterhouse Capital for \$2.6 billion. Perrigo sold its Latin American OTC business to Advent International for an undisclosed sum and its generic business to Altaris Capital Partners for \$1.6 billion. And Nordic Capital bought Advanz Pharma, a manufacturer of generic specialty medicines, for \$846 million.

Cell and gene therapy innovation

Promising cell and gene therapies pipelines have lured investors looking to participate through derivative plays in suppliers, research tools, and support services. Derivative plays shield investors from direct pipeline risk while exposing them to much of the upside in this rapidly growing field.

Clayton, Dubilier & Rice; Merck; and McKesson Ventures made a noteworthy majority investment in M2Gen, which focuses on data and analytics that enable personalized cell and gene therapies to treat cancer.

Some investors, confident in their scientific prowess, opted to take on direct pipeline risk through growth-equity investments. For example, Vitruvian Partners acquired a stake in Oxford Biomedica, a cell and gene therapy company.

A bullish outlook

Structural characteristics of the biopharma industry have only been strengthened by the efforts to address Covid-19. Other factors also should work in the industry's favor in the years ahead. Aging populations in high-income countries will increase demand for therapeutics. Abundant government, university, and private funding for R&D in many countries has built strong innovation pipelines across therapeutic modalities and disease states. Moreover, the medium-term risk of major drug price reform in the US market has diminished as bipartisan negotiations at the end of 2021 produced a less ambitious reform plan.

Private equity has historically found opportunities in biopharma derivative plays among companies that service biopharma giants, and these opportunities should continue. We expect to see more attention on IT firms that leverage technology to modernize the drug development arc. Technology to modernize clinical trials will also present good prospects as the digitalization of clinical trials comes of age.

Cutting-edge therapeutic modalities, especially cell and gene therapies as well as mRNA, will grow and create openings for deals. As investors gain confidence in their scientific judgment, directly investing in assets with pipeline risk may present unique opportunities for high returns.

Biotech activity held stable in 2021, lagging the broader biopharma sector. Looking ahead, investors will need to be discerning, since public markets signal that valuations may come down from 2020 levels. However, investors should keep an eye out for the next BioNTech or Moderna, as Covid-19 becomes endemic and sustains a huge addressable market for therapeutics.



Sector Trends

Providers: Sparks of Innovation in Primary Care, but Labor Tightens

The upheavals of Covid-19 spurred providers to adapt and private equity to close a record year.

At a Glance

- ▶ Technology-enabled care models, many geared toward value-based payments, attracted a surge of investor interest, with deal volume and value reaching all-time highs.
- ▶ Practice acquisitions rebounded, with a ramp-up of activity within retail health, specialty physician groups, behavioral health, and home services.
- ▶ An exodus of healthcare workers has challenged operators while creating opportunities for organizations that are employers of choice or can mitigate labor imbalances.
- ▶ Investors should look for assets that excel in health outcomes, growth playbooks, central infrastructure, and engaged teams.

In the face of Covid-19's widespread upheaval, healthcare providers were forced to adapt in 2021. New care models and supporting businesses blossomed, leading to a record year for provider deals.

Investors closed 214 provider deals, up from 145 deals in 2020; disclosed deal value rose to \$51.3 billion from the previous high of \$35.8 billion. North America garnered the largest share with 126 deals, or 59% of the total, up from 74 in 2020. Deals also rose significantly in Europe, to 42 from 28. Deals in the Asia-Pacific region, meanwhile, rose only modestly to 42 from 39.

Scanning the global provider landscape, four major investment themes stood out in provider deals during the year:

- innovative primary care models to improve value and the patient experience;
- consolidation in retail health, specialty physician practices, behavioral health, and home services;
- private hospital acquisitions in Asia-Pacific; and
- global labor shortages exacerbated by the pandemic.

Innovative primary care models to improve value and the patient experience

A convergence of market trends has caused primary care in the US to evolve. First, value-based payment models, typically centered on primary care due to its critical role in managing overall population health, are on the rise. Second, Covid-19 has accelerated the adoption of virtual care. And third, patients are taking a more active role in managing their health.

These dynamics have fueled primary care investments from a range of financial sponsors, hospitals, health plans, pharmacies, and mass retailers. Investors gravitated to primary care organizations that use technology to improve access and the patient experience, often in the context of risk-bearing, value-based payment models.

Value-based models. In the US, the adoption of value-based payment models has steadily grown over the past decade across different types of insurance, encouraged by regulatory action. Value-based payment models (especially full-risk models) remain most prominent in Medicare Advantage plans. Following the playbook of Oak Street Health, next-generation primary care models that cater to the needs of older people and capitalize on capitated reimbursement models are continuing to attract private equity and corporate attention. In one of the larger 2021 provider transactions, One Medical acquired Iora Health, a value-based primary care group focused on Medicare, for \$2.1 billion.

National US retailers also made large investments to expand their primary care capabilities and operations. Walgreens Boots Alliance's acquisition of VillageMD, a value-based care provider, for \$5.2 billion sped up its plan to open at least 600 Walgreens primary care practices by 2025. Walmart also announced plans to install 4,000 primary care "supercenters" in stores by 2029. Similarly, CVS Health announced plans to expand its primary care and wellness offerings by revamping MinuteClinic and HealthHUB locations, while closing 900 of its physical stores. For CVS, which is already deeply imbedded in healthcare as a pharmacy benefits manager, payer, and retail pharmacy, this reflects an opportunity to create value through more complete coverage of the healthcare value chain.

Virtual first. Catering to consumers' demand for convenience and greater comfort with telemedicine, firms are building virtual-first primary care offerings. Large US payers and growth-equity investors made investments in this space. For example, Cigna, following its acquisition of MDLive, is launching virtual-

first plans with select employers. Centene subsidiary Ambetter also partnered with Teladoc Health to launch a virtual-first plan. And the benefit navigation platform Accolade acquired PlushCare, a virtual primary care provider, in a deal valued at \$450 million, in order to expand its care delivery capabilities.

As for the investor-funded innovators, Hydrogen Health, which delivers on-demand virtual primary care powered by artificial intelligence, was launched by Blackstone Growth, Anthem, and K Health. Firefly Health, a virtual-first primary health provider, also raised \$40 million in a Series B round led by Andreessen Horowitz. And Transcarent, a virtual-first, fully at-risk model aimed at employers, raised \$258 million in just over a year from multiple partners.

Concierge and membership-based primary care models. Private capital also flowed to providers that offer better patient access coupled with personalized care. For example, Goldman Sachs and Charlesbank Capital Partners acquired a majority stake in MDVIP, the largest national network of primary care providers operating on a private membership model. Forward Health, a prevention-focused, membership-based primary care network, raised \$225 million in a Series D offering with participation from Founders Fund, Khosla Ventures, and SoftBank.

Consolidation in retail health, home services, specialty physician groups, and behavioral health

With patient volumes returning to prepandemic levels while care continues to migrate out of the hospital, private equity firms found many ways to invest across the spectrum of healthcare providers.

Retail health. While 2020 was marked by Covid-related service disruptions, 2021 brought renewed activity in retail health.

Dental practices remain a hot category for investment. In North America, investors were active in the general dental service organization model, such as Jordan Company's acquisition of Premier Care Dental Management (Dental365) from Regal Healthcare Capital Partners. But specialty dental practices also drew investors as a fragmented category that's ripe for consolidation. For instance, Harvest Partners acquired Affordable Care, a US chain of denture and implant services providers, for \$2.7 billion. And Thomas H. Lee Partners joined Linden Capital Partners as equal investors in the orthodontics chain Smile Doctors at a \$2.4 billion valuation, while Pamlico Capital bought Canadian Orthodontic Partners from Sheridan Capital Partners. On the oral surgery front, Oak Hill purchased U.S. Oral Surgery Management from RiverGlade Capital.

Interest in dental firms extended outside of the US. In Denmark, Intermediate Capital Group acquired Godt Smil, a chain of clinics. In China, Arrail Dental Clinic, a premium dental service network, raised \$200 million in a Series E round led by Temasek Holdings, and later in the year filed for an initial public offering.

Covid-accelerated pet industry growth also helped fuel a surge in deal activity for veterinary care assets in Europe and the US. Silverlake and Nestlé purchased part of EQT's stake in Independent Vetcare, a UK veterinary practice group, for \$4.2 billion. CVC acquired a majority stake in Medivet, one of the

UK's largest veterinary groups with European expansion plans, for \$1.4 billion. In the US, JAB Investors-backed National Veterinary Associates acquired Ethos Veterinary Health for \$1.7 billion and SAGE Veterinary Care for \$1.25 billion, two national networks of veterinary hospitals. And Warburg Pincus provided \$170 million of growth financing to Bond Vet, a tech-enabled chain of veterinary clinics.

Bain research has identified cardiology and orthopedics as the fastest-growing procedural disciplines at ambulatory surgery centers (ASCs) through the mid-2020s, and investors took notice.

Specialty physician practices. Private equity firms in the US continued to invest heavily in physician groups. While the playbook varies by specialty, common themes include still-fragmented provider bases, opportunities in ancillary services, and the continued shifts of surgical volume to independent ambulatory surgery centers (ASCs).

While deals in established categories such as ophthalmology and gastroenterology are thriving, private investment also surged into specialties such as cardiology and orthopedics, which are more fragmented and often owned by hospitals. These new specialties stand to benefit from trends including Medicare approval to reimburse more procedures for ASCs, value-based care's traction across insurance types, and physician and patient preference for outpatient surgery centers. Bain research has identified cardiology and orthopedics as the fastest-growing procedural disciplines at ASCs through the mid-2020s, and investors took notice. In cardiology, Webster Equity Partners launched Cardiovascular Associates of America in partnership with Cardiovascular Medicine. In orthopedics, Welsh, Carson, Anderson & Stowe acquired Resurgens Orthopaedics.

Women's health continued to attract investments across a range of business models. Partners Group acquired Axia Women's Health, a network of providers in the US, from Audax Private Equity. Kohlberg purchased a large stake in Ob Hospitalist Group, the largest provider of obstetric hospitalists in the US. And Unified, a practice management platform in women's healthcare backed by Altas, partnered with CCRM Fertility, a clinically integrated fertility services platform.

Behavioral health. Last year may have been the calm before the storm in behavioral health investment. While there was less large-deal activity in some of the major behavioral health categories such as autism and substance abuse, the pandemic exacerbated the global burden of mental health conditions. Notable transactions in 2021 included Apex Partners and Oak HC/FT's acquisition of Eating Recovery Center for \$1.4 billion, and Medical Properties Trust's \$950 million investment in the inpatient behavioral facilities of Springstone. In the Netherlands, Apex Partners acquired Mentaal Beter, a network of mental healthcare clinics, and Holland Capital Management acquired a 50% stake in Yes

We Can Youth Clinics, which specialize in treating addiction, behavioral, and mental health issues in teenagers. Building on the theme of virtual care delivery, significant growth-equity investments were also made in mental health-focused digital tools and therapeutics.

Home services. The pandemic added momentum to services that help manage patients outside of a hospital. Traditional home care companies drew deals in the US and Europe. In a transaction valued at \$5.7 billion, US payer Humana purchased from TPG and Welsh, Carson, Anderson & Stowe the remaining 60% stake in Kindred at Home, a large US home health and hospice provider. By becoming full owner, Humana bolstered its push to vertically integrate with provider services. Alpine Investors-backed TEAM Services Group also acquired 24 Hour Home Care, another US-based home care service provider. In Germany, Amira Partners bought PflegeButler Häusliche Pflege mit Stil, which offers home health services and assisted living facilities. And Palatine Private Equity acquired Routes Healthcare, a UK home care provider, from Key Capital Partners.

Specialty services such as home and ambulatory infusion service providers also attracted considerable interest in the US. For example, Waud Capital bought PromptCare, offering home-based respiratory and infusion therapy services, from Halifax Group. And Great Hill Partners made a \$100 million growth-equity investment in IVX Health, a national provider of outpatient infusion centers.

Private hospital acquisitions in Asia-Pacific

As incomes rise across Asia-Pacific, demand for high-quality healthcare services follows. Both generalist and specialty models thus attracted considerable investment in the region. In Malaysia, Navis Capital Partners purchased a majority stake in Aurelius Healthcare, a private hospital system. In China, New Frontier Corporation acquired United Family Healthcare, a network of private hospitals and affiliated ambulatory clinics. In India, NewQuest Capital Partners acquired a minority stake in Cloudnine, an obstetrics and pediatrics-focused private hospital chain. And EQT Infrastructure acquired Icon Group, a network of cancer centers across Australia, China, New Zealand, Singapore, and Vietnam. Investor enthusiasm for private hospital groups in Asia-Pacific looks set for strong growth.

Labor shortages exacerbated by the pandemic

Labor force considerations have affected almost every category of investments in providers. Recruitment and retention issues took on greater importance during the pandemic. Healthcare workers who have burned out, worry about exposure to Covid-19, or are enticed by higher wages elsewhere have been leaving their jobs at an alarming rate. And the current inflationary environment raises concerns about further wage pressures.

Businesses that help address labor shortages have been in high demand in this environment. On that theme, Centerbridge and the Canadian pension fund CDPQ bought Medical Solutions, a travel nurse staffing company, for \$2.3 billion. Technologies that improve employee productivity also garnered investment. Olive, an artificial-intelligence-as-a-service company that automates administrative tasks, raised \$400 million in a round led by Vista Equity Partners and Base10 Partners.

Innovative provider businesses that manage to achieve a trifecta of improvements in the patient experience, health outcomes, and costs will continue to grow rapidly and stand out as attractive investment targets.

Look for superior outcomes, growth playbooks, central infrastructure, and engaged teams

When markets experience such profound shifts as a pandemic, big investment needs inevitably emerge. That continues to be the case with healthcare providers.

Innovative provider businesses that manage to achieve a trifecta of improvements in the patient experience, health outcomes, and costs will continue to grow rapidly and stand out as attractive investment targets. As competition among new entrants heats up, several factors will distinguish the winners.

- **Superior health outcomes at an affordable cost.** Value-based payment models are growing across insurance types, so affordable, accessible care that delivers superior outcomes will earn greater customer loyalty and financial rewards.
- **A strategic playbook for growth.** As multiples get bid up, the bar also rises for adding value. A strategic playbook should guide scalable same-store sales growth, a repeatable process for new locations, and synergies from M&A.
- **Scalable central IT infrastructure.** Healthcare IT, such as centralized revenue cycle management (RCM) and population health management tools, are critical tools for winning in value-based care.
- **Clinician and employee engagement.** With burnout and job vacancies rampant, what's the value proposition to internal stakeholders? Investing in a better work environment and technologies that streamline staffing and workflows will pay off with lower turnover and higher customer satisfaction.

Companies that help incumbent brick-and-mortar health systems compete with the upstarts will also present opportunities. Eager to preserve their market power and lucrative referral channels, legacy health systems will partner with companies that help them create a distinctive patient experience. Moreover, as value-based contracts account for more of their reimbursement pool, health systems will seek partners to help actively manage population health, sometimes through services that address the social determinants of health.



Sector Trends

Payers: A Shift from Insurance to Services

Payers look to advanced data analytics and member engagement in order to lower costs and improve outcomes.

At a Glance

- ▶ New payer business models attracted a surge of investment in 2021, with deal value more than tripling and five deals of over \$1 billion.
- ▶ Payers expanded investments in the provider space to strengthen patients' overall care and to tap the provider profit pool.
- ▶ Private equity also flowed to deals involving specialty-specific value-based care, Medicaid, and social determinants of health.
- ▶ With payers promoting the health of their members, investments that align incentives for all stakeholders could realize outsized returns.

As the lines between payers and providers continue to blur, companies that support new payer business models have benefited from a surge in investment. While the number of payer buyouts in 2021 increased slightly to 24 deals from 23 the year prior, disclosed value rose dramatically to \$15.3 billion from \$4.4 billion. Five of the deals were valued at more than \$1 billion, and three exceeded \$3 billion. Consistent with previous years, the activity was concentrated in North America, given the diverse and largely private payer landscape in the US. North America accounted for 83% of payer deals and 98% of disclosed deal value.

With costs rising rapidly and value-based care models maturing, the role of US payers is being redefined, leading to major opportunities for value creation. Outside the US, insurgent European companies such as Alan and Best Doctors received growth-equity investments, proving that tech-enabled, customer-centered insurance services can also thrive in different payer markets.

Our analysis finds that private equity funds pursued assets along four dimensions in 2021:

- expanding payers' role in providing services to patients;
- using data to improve member engagement and outcomes;
- Medicaid and the social determinants of health; and
- cost-containment solutions for specialty insurance markets.

Expanding payers' role in providing services to patients

Commercial payers ramped up investments in the provider space as part of a broader move to strengthen their role with patients' overall care and to tap the provider profit pool. UnitedHealth's Optum further expanded its physician network with the acquisition of physician groups Atrius Health and Beaver Medical Group, widening its lead as the largest employer of US physicians. Centene acquired Magellan Health, a benefits manager for behavioral health, for \$2.2 billion, to solidify its foothold in that field.

Private equity investors also found ways to partner with payers in strategic investments focused on value-based care. In primary care, Blackstone Growth, Anthem, and digital health start-up K Health launched Hydrogen Health, which delivers on-demand virtual primary care powered by artificial intelligence.

Turning to specialty-specific value-based care models, these target the roughly 90% of commercial healthcare spending controlled by specialists. For example, Welsh, Carson, Anderson & Stowe's subsidiary Valtruis led an \$83.5 million Series B for Cricket Health, a value-based kidney care provider, alongside Blue Shield of California, Cigna Ventures, and Oak HC/FT. Valtruis, Centene, and other investors took part in a \$75 million investment in Wayspring, which leverages data analytics to deliver value-based care for patients with substance use disorder.

Despite these investments, insurance hasn't truly integrated with care delivery to create value. These investments represent a long-term bid by payers to excel in an increasingly fee-for-value world where providers stand to capture more of the profits.

Using data to improve member engagement and outcomes

More and more payers view members' health outcomes as critical to their bottom line. Reining in costs for all members requires insights that can inform new ways of working, combined with outreach to targeted members derived from clinical and claims data sets.

Companies that help payers translate data into interventions attracted a surge in investor activity. Notably, Nordic Capital, Insight Venture Management, and 22C Capital acquired Inovalon Holdings, a healthcare data platform that offers a range of solutions that improve member health outcomes, for \$7.3 billion. CVC also took a majority stake in Icario, a technology platform that translates data into targeted member engagement for better health outcomes. And on the heels of 2020 purchases of Altruista and the Burgess Group, Blackstone portfolio company HealthEdge acquired Wellframe, a software platform that uses real-time member data and artificial intelligence to help payers identify when and how to intervene with high-risk members.

There's another ingredient in serving Medicaid patients: a greater emphasis on addressing the social determinants of health.

Medicaid and the social determinants of health

Inspired by the success stories in Medicare Advantage, investors have turned to Medicaid. As with Medicare Advantage, success in managed Medicaid involves actively engaging with members to keep them healthy and out of the hospital. However, there's another ingredient in serving Medicaid patients: a greater emphasis on addressing the social determinants of health.

In one such deal, Gainwell Technologies, a portfolio company of Veritas Capital, bought HMS Holdings, a Medicaid-focused healthcare technology, analytics, and engagement solutions provider, for \$3.3 billion. One HMS product identifies high- and rising-risk members, triggering adjustment of a members' disease management before they need to be hospitalized.

Growth-equity investors increasingly look for companies that address the nonmedical social conditions that influence health outcomes. Payers stand to reduce healthcare costs when they tackle the root causes of disease. For example, Cityblock Health, which helps Medicaid plans provide coordinated, tech-enabled care for physical, mental, and social health, raised \$400 million in a late-stage round led by SoftBank. Unite Us, which connects patients with social services, will expand its nationwide social care infrastructure with \$150 million of funding led by ICONIQ Growth. For-profit initiatives to address social problems are a mostly American phenomenon, and the infusion of private capital increases their potential for broad impact.

Cost-containment solutions for specialty insurance markets

While cost-containment tools for traditional payers have long attracted private equity, investors are now focusing on specialty insurance markets, especially workers' compensation, for returns. For example, CVC acquired a controlling stake in ExamWorks, a provider of independent medical examinations as well as medical record and bill-review services, from Leonard Green for \$4 billion. CVC also bought a majority interest in MedRisk, a managed care organization performing physical therapy under workers' compensation, for \$1.2 billion from Carlyle, which will retain a significant stake.

Aligning incentives could lead to outsized returns

We feel confident in noting several trends for the next few years.

First, payers will continue to build new business lines, seek partners, and make acquisitions that help them deliver a differentiated member experience and tap into new profit pools. In turn, valuations will rise for companies that support a better member experience or the integration of diverse health-care services businesses.

As payers evolve into diversified health services companies, technology that helps them streamline or automate core payer functions will attract investor interest. Digital brokerages, transparent pharmacy benefit managers, and other tech-enabled firms will present outsized opportunities.

Companies that work at the interface of payers and providers, through such things as data exchange or population health management, will grow quickly. In particular, firms that enable payers to reduce costs across member populations will remain in demand.

Larger physician groups will be attractive acquisition targets for payers building out their physician networks, particularly groups with a track record of accepting risk beyond simple upside-only agreements.

Investments will accelerate in value-based Medicaid and commercial models, as value-based care takes off in the Medicaid and employer-sponsored insurance markets.

Medicare Advantage will continue to attract investment as the fundamentals of an aging population, rising enrollment, and large profit pools remain strong. Investments will accelerate in value-based Medicaid and commercial models, as value-based care takes off in the Medicaid and employer-sponsored insurance markets.

Specialty-specific benefit management solutions—especially in high-cost disciplines such as cardiology, dialysis, oncology, and orthopedics—will see a surge in investor interest, but require thoughtful strategic planning to optimize value creation.

Finally, firms that help payers address the social determinants of health will attract more investment. The Covid-19 pandemic exposed the profound effects of social circumstances on health outcomes, and as payers take on more responsibility for these outcomes, they'll look for partners to address what influences health outside the traditional purview of medicine. And companies that can prove cost savings to managed Medicaid, other value-based care plans, risk-bearing providers, or self-insured employers will also benefit from new investment.

Payers are well along their transition from insurers to diversified healthcare services companies. It's a promising shift toward aligning incentives for all involved—payers, providers, and patients—in order to improve health. Investments that create value in this context could realize outsized returns.



Sector Trends

Medtech: The Pandemic Has Expanded Needs and Opportunities

Deals flow from provider demand for supply chain resilience, expense management, and support for alternative care.

At a Glance

- ▶ Investors completed 96 medtech deals in 2021, up sharply from 55 in 2020 and surpassing the previous high of 60 in 2018.
- ▶ This increase was fueled by Asia-Pacific transactions, which accounted for 45% of global deals, the largest share, as investors targeted local manufacturers.
- ▶ Deal value surged to \$40.8 billion from \$3 billion in 2020, largely reflecting the Medline deal valued at \$34 billion. Such swings typify the sector, where large assets are relatively scarce.
- ▶ Major themes for North American and European investors include supply chain resilience and cost containment, technology for alternative care, specialty contract manufacturing, and regulatory support.

The Covid-19 pandemic, for all its havoc, has highlighted opportunities in the medical technology sector, particularly involving supply chain vulnerabilities. For the second straight year, the sector's deal volume surged.

In 2021, new investment themes emerged, with sponsors focusing on services rather than products. This shift highlights emerging priorities of original equipment manufacturers (OEMs) and end customers. In 2021, investors sharpened their focus on companies that help reduce overall health-

care costs, including several companies that engage in remote monitoring, white-label equipment, and chronic disease treatment. But competition from corporate acquirers, along with longer innovation cycles, means the number of truly attractive assets is relatively low.

The number of deals rose to 96 from 55 in 2020, and disclosed value almost doubled, even excluding the \$34 billion Medline deal. The year had 4 transactions of \$1 billion or more, the highest count to date.

Five investment themes infused the deal flow in 2021:

- supply chain products and services to reliably deliver care;
- technology that enables care delivery in lower-cost sites;
- heightened interest in specialty contract manufacturing organizations (CMOs) with niche capabilities;
- more activity in regulatory support services; and
- more transactions in the Asia-Pacific region.

Let's review each in turn.

Supply chain resilience for medical equipment and supplies

Covid-19 put healthcare systems under extreme pressure and exposed vulnerabilities in their supply chains. In turn, healthcare companies have sought providers adept in logistics and infrastructure to reliably and cost-effectively supply essential tools and equipment. The standout investment in this area was the largest buyout of the year, Medline, executed by consortium of Blackstone, Carlyle, Hellman & Friedman, GIC, and ADIA. Medline has a robust private-label portfolio and distribution network that provides product and distribution savings for the entire healthcare continuum. Its end-to-end control of the value chain, from manufacturing through fulfillment, provides an additional layer of supply chain resiliency for customers.

Other notable investments in the physical infrastructure for distribution equipment include Platinum Equity's acquisition of NDC, an intermediary between manufacturer and small or regional providers, and Flexpoint Ford's acquisition of Canadian Hospital Specialties, a distributor and manufacturer of surgical products.

Besides physical infrastructure, digital supply chain and distribution infrastructure for providers attracted private equity. Warburg Pincus made a growth investment in Global Healthcare Exchange, a cloud-based trading network and supply chain automation software as a service for healthcare products.

Extending this attention to supply chains, healthcare companies are also trying to reduce costs related to equipment maintenance, repair, and refurbishment, spurring deals of providers in this area.

PartsSource, for instance, helps customers reduce costs by selling replacement parts, reducing the total cost of ownership for expensive medical equipment, and extending the useful life of medical equipment to help reduce overall hospital costs. We expect this to be a continued theme of investments as hospitals continue to feel pressure to reduce costs.

Support for patient care at alternative sites

As providers and payers continue to reinvent care delivery, medtech companies play a large role in supporting a shift to home-based care. This has created investment opportunities in remote monitoring. Key deals include Water Street's growth investment in Medical Guardian, a remote monitoring and emergency alert device, and Rockbridge-backed Connect America's acquisition of 100Plus, a remote monitoring device company.

Alternative-site and remote care have also increased demand for direct-to-consumer medical devices that remotely monitor patients and keep them in the outpatient setting, lowering hospital admissions and, ideally, overall healthcare costs. Two examples of such growth investments are Beecken Petty O'Keefe's investment in Home Care Delivered, a direct-to-patient provider of reimbursed medical supplies, and Advanced Diabetes's purchase of US Medical Supply, a supplier of glucose monitors for diabetes.

The ability to manufacture micro or precision components, which OEMs typically don't have, makes CMOs with specialized manufacturing capabilities attractive.

The rise of specialty CMOs

In Europe and North America, activity increased in CMOs and contract development and manufacturing organizations (CDMOs). However, acquisitions have shifted to target assets with specialized manufacturing capabilities focused on high-growth areas, including minimally invasive surgery, cardiac devices, and neurological devices. Niche CMOs and CDMOs are typically insulated from pricing pressure due to their unique applications and differentiated capabilities. In addition, the ability to manufacture micro or precision components, which OEMs typically don't have, makes CMOs with specialized manufacturing capabilities attractive. Buyouts included Altaris's investment in Minnetronix, the Canadian Pension Fund's \$1.2 billion investment stake in CeramTec, and Carlyle's acquisition of a 50% stake of Resonetics, a leader in micro manufacturing.

Help in navigating regulation

The prospect of more stringent regulatory requirements in the US, similar to those in Europe, is leading investors to explore companies that provide regulatory support services, such as compliance consulting and life cycle management. That logic underpins Linden Capital Partners' investment in RQM+ and JMI Equity's investment in Greenlight Guru. In another notable deal, Sverica Capital Management-backed Gener8 acquired RND, a provider of software development services focused on medical devices, including assessing compliance and verifying design outputs for US Food and Drug Administration approval.

A surge in Asia-Pacific

As the Asia-Pacific private equity market continues to mature, medtech activity has surged, particularly in China, fueled by governmental incentives and attractive assets. The region's medtech deals increased to 43 from 26 in 2020. The rise was propelled by China's 34 deals, up from 23 in 2020 and just 7 in 2019. Cardiac medical devices were a particularly active investment area in China, including investments in NewMed Medical, MagAssist, and Hanyu Medical.

Structural drivers of demand show no signs of letting up

Looking ahead, we expect pockets of the sector to continue attracting sponsors, although heightened corporate competition will reduce the number of viable opportunities. Cost pressures will continue to weigh on providers' income statements, reinforcing the value of equipment maintenance and repair specialists. Additionally, as doctors continue to seek innovative technology to deliver better care, specialty CDMOs and firms in preclinical, commercialization, and regulatory support will all warrant investor interest.



Sector Trends

Life Sciences Tools: Diagnostics Deals on the Rise

Diagnostics labs and R&D technology firms have attracted more investments from private equity firms.

At a Glance

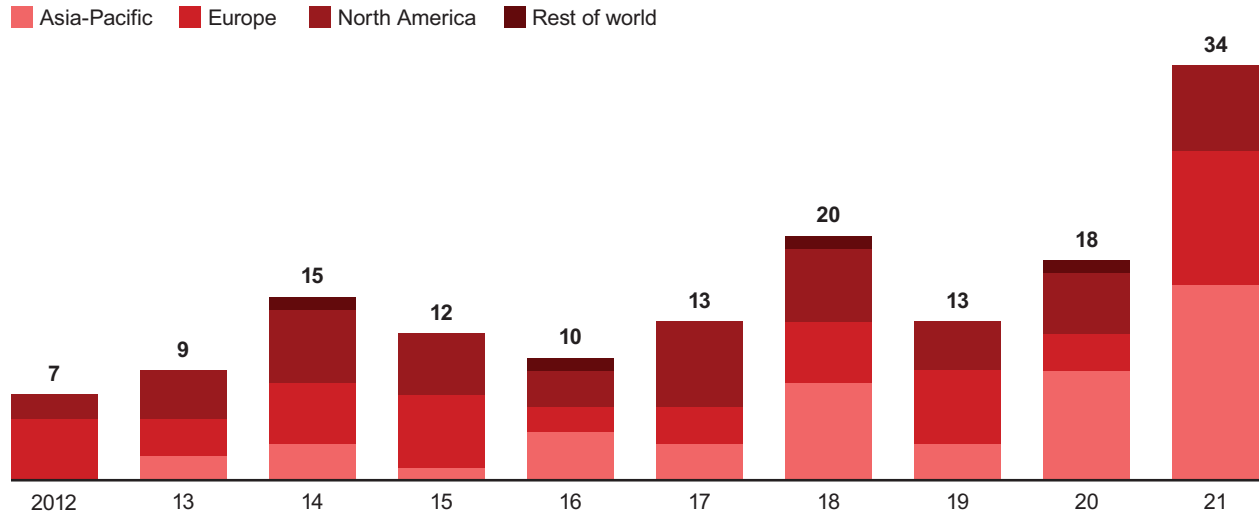
- ▶ Deals in life sciences tools deals nearly doubled to 34 in 2021, while disclosed deal value soared to a record \$11.1 billion.
- ▶ The sector traditionally has attracted mostly corporate buyers, but expanding treatment and detection of infectious diseases has allowed more private equity investors to get their foot in the door.
- ▶ Consolidation of diagnostics labs held appeal, particularly in Asia-Pacific.
- ▶ R&D companies also presented pockets of opportunity, notably when the company is a clear leader in a growing market.

What a year for deals in the life sciences tools sector, for both buyouts and corporate mergers and acquisitions. The number of deals nearly doubled to 34 in 2021 from 18 the prior year, with most of the growth in Asia-Pacific and Europe (see *Figure 1*). Disclosed deal value soared to \$11.1 billion from \$2.4 billion. Indeed, there was so much life sciences activity that this year's report breaks out the sector for the first time.

Traditionally, life sciences assets have been most attractive for corporate buyers, but as the industry evolved to focus more on treatment and detection of infectious diseases, private equity investors have been able to get their foot in the door. They've primarily targeted tools and technologies used for therapeutic research and diagnostics.

Figure 1: Deals in life sciences tools accelerated, especially in Asia-Pacific and Europe

Number of life sciences buyouts



Notes: Excludes spin-offs, add-ons, loan-to-own transactions and acquisitions of bankrupt assets; numbers based on announcement data; includes announced deals that are completed or pending, with data subject to change; deal value doesn't account for deals with undisclosed values; total buyout deal values updated based on Dealogic 2021 sponsor classifications
 Sources: Dealogic; AVCJ; Bain analysis

The appeal of diagnostics

Diagnostic labs have proven to be reliable long-term investments, and in 2021 investors showed great interest in lab consolidators, particularly in Europe and Asia-Pacific, as well as companies that specialize in earlier disease detection. Covid-19 testing has provided significant cash flows; while testing volumes fluctuated as vaccinations rose, waves of Covid-19 variants are likely to require further interventions from these operators.

In this context, private equity firms have targeted clinical diagnostic providers. Two notable European deals were the EQT acquisition of Cerba HealthCare, a European lab and diagnostics provider, for \$5.3 billion (an exit opportunity for Partners Group), and the Goldman Sachs, OMERS Infrastructure, and AXA purchase of Amedes Holding, a German-based operator of diagnostic laboratories. The Cerba and EQT partnership already started playing out its strategy by announcing the add-on acquisition of Viroclinics–DDL. In Asia, notable activity included Catterton Management’s \$181 million investment in the Japanese company PHC Holdings. Specialty diagnostics firms also stepped up their investments, such as ArchiMed’s acquisition of Zyto Group, a fully integrated cancer diagnostic test and equipment provider for clinical pathology labs.

Pockets of value in R&D

Life sciences R&D companies historically appealed more to corporate buyers, but now private equity firms have started to find pockets of opportunity. Sponsors are finding value in early growth investments where the company is a clear leader in a growing market. This logic underpins Vitruvian Capital's investment in MaxCyte, which offers electroporation technology. Another example is ArchiMed's investment in 42 Life Sciences, a developer and producer of reagents for immunohistochemistry, which is part of the Zyto Group.

Corporate buyers continue to pursue acquisitions as they complement their therapeutic portfolios, which should continue to provide meaningful exit opportunities for sponsor-backed companies. For example, PerkinElmer, which focuses on diagnostics, research, and industrial testing, bought BioLegend, a provider of antibodies and reagents for research, for \$5.25 billion.

Lab equipment raises its profile

As drug development and research advances, lab equipment has become more attractive for investors. Key deals in 2021 included Carlyle's acquisition of Unchained labs, a life sciences tool company and provider of biotechnology solutions, from Novo Holdings for \$435 million; Altaris's purchase of a majority stake in Solesis, specializing in biomaterials for life sciences companies; and the acquisition by Adelis Equity Partners of Nordic Biosite, a distributor of diagnostic and life sciences products.

Three themes for the near future

Looking ahead, risks will vary widely for life sciences investments. We expect three themes to stand out.

First, diagnostics providers will continue to expand as hospitals and other care facilities increasingly outsource testing services, and as direct-to-consumer testing ramps up.

Second, life sciences firms will benefit from using technology, such as mRNA, that aids development and testing components.

Finally, capital was directed last year toward miniaturizing, automating, and digitally integrating workflows in the lab setting, primarily through growth-equity investments. These investments will fuel the formation and maturation of integrated lab services companies that will attract even greater investor interest in the years to come.



Sector Trends

Healthcare IT: Faster, Smarter, Tuned to Value

It's all about streamlining operations or improving outcomes.

At a Glance

- ▶ After a Covid-19-related drop in 2020, healthcare IT deals rose to a record high as digitalization accelerated.
- ▶ Megadeals, notably Athenahealth and Inovalon Holdings, pushed disclosed value to an unprecedented level, reflecting the growing opportunity for value creation in this space.
- ▶ Buyout investors focused on value-based care, while growth-equity investors focused on digital tools.
- ▶ Investment will grow further as digital health tools continue to gain steam and incentives increasingly align to promote better health.

Larger deals and more of them characterized the healthcare IT (HCIT) market in 2021. Deal count rose from 48 in 2020 to 75 in 2021, a record. Disclosed value also surged from \$15.1 billion to \$38.1 billion. The share of HCIT deals held steady at around 15% of overall volume and 25% of total disclosed value, even though the size of deals grew significantly.

Two of the year's largest deals—the \$17 billion Athenahealth and \$7.3 billion Inovalon Holdings acquisitions—together accounted for 64% of disclosed HCIT value. North America continues to be the hub of these deals, contributing 80% of global deal volume and 94% of global value.

Four themes shaped most HCIT investments throughout 2021:

- redefining care delivery through digital health tools;
- using technology and big data to accelerate drug development;
- optimizing payer and provider operations; and
- supporting value-based care.

We'll review each theme in detail.

Redefining care delivery through digital health tools

Digital tools are changing how healthcare is provided at a large scale. They aim to make providers more efficient and improve outcomes for more patients. Through mobile apps and smart devices, digital health tools offer continuous care and give patients more control over their care.

Most digital health tools focus on chronic conditions such as diabetes, musculoskeletal pain, and obesity, which account for a growing share of disease burden and healthcare spending in a number of countries. Because many of these conditions stem from years of unhealthy habits, tools that continuously nudge people toward healthier behaviors could combat chronic disease at its source and meaningfully bend the cost curve for these conditions. While the academic evidence on platforms isn't yet sufficient to shift the clinician-defined standard of care, many employers and some payers have been early adopters, inspiring a surge of venture and growth-equity investments.

Growth-equity funding flowed into platforms that tackle some of the most prevalent and costly chronic diseases. For example, Noom, a subscription-based app focused on weight loss, raised \$540 million in a Series F round led by Silver Lake. Virta Health, a digital type 2 diabetes management program, raised \$133 million in a Series E led by Tiger Global.

Growth-equity funding for tools that specialize in behavioral health also surged as the pandemic increased demand for behavioral services, reduced the stigma associated with seeking support, and made such services more attractive to employers and payers. For example, Lyra Health, a virtual-first provider of mental health services, secured \$187 million in new financing led by Addition Capital. Other digital behavioral health platforms received growth-equity funding from such sources as BetterUp, Ginger/Headspace, Modern Health, and Spring Health.

Using technology and big data to accelerate drug development

Bringing a new drug to market now has a median cost of about \$1 billion. Technologies that reduce drug development costs and speed up the process thus stand to create immense value both for biopharma companies streamlining their pipelines as well as patients who benefit from earlier

access to new therapeutics. During 2020, the Covid-19 pandemic drew investor interest specifically for technical tools that could run clinical trials with fewer in-person visits. This past year saw broader HCIT investments to streamline every stage of drug development, from preclinical drug discovery to market entry after approval.

Continuing a trend seen in 2020, private equity investors were most active with companies driving efficiencies in later stages of the development process. Large investments flowed to software tools that make clinical trials more efficient and enable decentralized testing. For example, ERT, a portfolio company of Astorg, Novo Holdings, and Nordic Capital, acquired Bioclinica to form Clario, an end-point technology for clinical trial evidence generation. Thoma Bravo also pursued an investment valuing Greenphire at \$1.1 billion, which offers payment software for clinical trials. Growth-equity investors also invested in companies making clinical trials more efficient. Coatue Management led an \$220 million investment in Reify Health, a technology platform for optimizing patient recruitment, and Blackstone Growth and Tiger Global led a \$304 million Series D in Medable, a clinical research software-as-a-service (SaaS) company that supports digital and decentralized clinical trials.

Large investments flowed to software tools that make clinical trials more efficient and enable decentralized testing.

Analytics platforms that streamline postapproval market launches also merited large deals. Evaluate, an HgCapital portfolio company, completed a \$1.6 billion merger with Managed Markets Insight & Technology (MMIT), a Welsh, Carson, Anderson & Stowe portfolio company, to become a provider of global pharma commercial intelligence. The combined Evaluate-MMIT then added Panalgo, a health-care analytics platform serving the biopharma sector.

Growth-equity investors were also attracted to companies that accelerate preclinical drug discovery using artificial intelligence (AI). These companies are working to reduce risk in R&D pipelines, making drug candidates more likely to become successful medicines. For example, XtalPi, a Chinese company doing AI-assisted drug discovery, raised \$319 million in a SoftBank-led Series C round. Accutar Biotech, a biotech and software-as-a-service (SaaS) company that uses computationally enabled drug design to reduce the time and cost of drug discovery, raised \$100 million in a new round led by Yunfeng Capital.

Optimizing provider and payer operations

The payer and provider sectors face pressures to operate more efficiently. HCIT solutions that boost efficiency thus attracted a flurry of investment in 2021. Revenue cycle management (RCM) was the common thread linking megadeals in this space.

Athenahealth, a cloud-based software company that offers revenue-cycle-management software and services and electronic medical record software, was acquired by Hellman & Friedman and Bain Capital for \$17 billion, the largest HCIT leveraged buyout ever. Nordic Capital, Insight Venture Management, and 22C Capital acquired Inovalon, a provider of RCM as well as other data-driven services, for \$7.3 billion. On the corporate side, UnitedHealth's Optum is set to acquire Change Healthcare, which offers RCM and clinical information exchange services, for an estimated \$13 billion. These sums reflect the value created by companies that help providers and payers navigate the administrative complexity linking care provision with payment in the US.

Beyond RCM, growth-equity investors are fueling development of AI tools that raise employee productivity through automation. For example, Olive, an artificial-intelligence-as-a-service company that automates administrative tasks for providers and payers, raised \$400 million in a round led by Vista Equity Partners and Base10 Partners. Aidoc, selling radiology decision support software, raised \$66 million in a Series C round led by General Catalyst. If HCIT reaches its potential, the tedious and repetitive tasks that contribute to administrative burdens, employee inefficiency, and clinician burn-out may one day disappear.

Under value-based payment models, where better health outcomes affect returns, companies need a different strategic approach than under fee-for-service incentive systems.

Supporting value-based care

Since the passage of the Affordable Care Act in the US, the shift from fee-for-service to fee-for-value has been slow, but progress remains steady. Under value-based payment models, where better health outcomes affect returns, companies need a different strategic approach than under fee-for-service incentive systems. Innovative HCIT tools are helping providers and payers realize value as part of that transition.

Several platforms designed to engage patients and improve health outcomes had major buyouts. TPG and Leonard Green-backed WellSky acquired Careport Health, a SaaS company that allows clients to monitor patients throughout their care and intervene when appropriate to prevent unduly expensive care. CVC purchased a majority stake in Icario Health, which empowers payers to improve health outcomes through targeted member engagement.

Growth-equity investors also pursued many deals in this space. For example, Innovaccer, a SaaS company that helps providers unify patient data to generate clinical and financial insights for quality

and costs, raised \$105 million in a Series D round led by Tiger Global. Summit Partners led a group raising growth capital for TurningPoint HealthCare Solutions, which uses data and AI to help providers unlock better care, safer treatments, and lower costs.

Three factors to watch

With innovation so critical in healthcare, HCIT deal activity will likely accelerate. Digital health tools will continue to present outsized opportunities for returns as they go mainstream. We see three factors as determining the quality of digital health investments:

- **robust data that demonstrates both compelling return-on-investment and superior clinical outcomes**, strengthening the sales pitch to employers/payers and attracting more clinician referrals;
- **products that target more diverse patient populations**, especially marginalized populations that experience a disproportionate burden of chronic disease, thereby expanding the number of patients who can be served; and
- **partnerships or integration with brick-and-mortar health systems** to deliver coordinated care and a superior patient experience.

Tools that use technology and big data to accelerate drug development will also present major investment opportunities. Platforms that support next-generation, decentralized clinical trials will continue to be attractive investment targets. Emerging AI tools that leverage multiomics data to accelerate drug discovery will likely mature and trigger larger deals among biopharma companies in the coming years.

On the heels of the landmark Athenahealth deal, infrastructure investments to enhance interoperability and data flow limitations will continue to attract significant investor attention as more businesses try to break down barriers in today's often siloed healthcare IT systems.

Investors should also track the unique needs of the growing number of combined provider and payer entities in the US—payers with provider networks, providers with insurance plans, and providers operating under capitated payments. These entities are gaining share, and companies that meet their needs stand to grow as the transition to value-based care intensifies.



Healthcare Private Equity Outlook: 2022 and Beyond

Investors are hunting for value in a time of discontinuity.

Healthcare is enduring a period of discontinuity on several fronts. Most obviously, the Covid-19 pandemic continues to stress the supply chain, wrench forward the previously gradual progress of digital care, and stretch many sectors thin with labor shortages. In addition, strains on the healthcare market are likely to intensify following the invasion of Ukraine.

Apart from the pandemic and fallout from the Ukraine conflict, structural changes are washing through healthcare systems globally that give reason for optimism. One positive shift is that technological innovations—including digital tools that redefine how patients interact with care, the use of artificial intelligence in drug discovery, and software that enables value-based care—are helping companies build new business models.

Another structural change centers on the relative merits of private markets vs. public markets. True, 2021 set a record number of initial public offerings (IPOs) and special-purpose acquisition companies (SPACs) in healthcare. But many IPOs and SPACs haven't fared well, and SPACs in particular may face enhanced regulation. The pandemic further tips the balance in favor of private markets, because systemic disruption requires a rapid, nimble response that private ownership better affords. More broadly, the longer time horizon taken by private investors, not metered by quarterly earnings, affords investment in the innovations needed to inflect change in a system.

Because of these developments, the near- to medium-term future may see more healthcare assets going and staying private. The current superabundance of capital has fueled these developments, as new sources such as infrastructure funds, growth-equity funds, sovereign wealth funds, hedge funds, and crossover funds expanded their healthcare investments.

No one can foresee the implications of these discontinuities in detail. Rather, the uncertainties inherent in a time of flux raise the importance of thorough diligence and early planning for value creation. Investors and executives of portfolio companies can benefit by regularly revisiting a set of high-gain questions.

- **What's the impact of Covid-19 finally stabilizing and no longer causing major disruption to the healthcare ecosystem?** With widespread vaccination in high-income countries, 2021 marked the emergence of a new normal in some places, despite recurrent waves of novel variants. It's not clear when Covid-19 will cease posing systemic risks that cause widespread economic disruption. However, the pandemic already has permanently shifted how people live, work, and play, and this has wide-ranging implications for every healthcare sector.
- **Will private capital continue to flow into healthcare from new sources and in new forms?** Attracted to healthcare's high returns, recession resilience, and demographic tailwinds, more diverse investors with a broader range of strategies are pursuing opportunities in healthcare. Growth-equity investments helping disruptive innovators scale have surged. And consortium-led megadeals in 2021 broke deal-value records. With healthcare returns expected to remain strong, despite rising competition, we expect investors to continue diversifying how they deploy capital. Rigorous planning for value creation as part of the diligence process will become even more important. One development to watch over the coming years will be the rise of healthcare-focused funds that have a scale comparable to the tech megafunds.
- **Will the pace of public-to-private transactions pick up?** More for-profit healthcare enterprises may leave public markets so they can pursue transformations or investments in growth areas that increasingly appeal to private investors, given their longer-term outlook. Will we see more Medline- and Athenahealth-sized transactions as investors look to take larger public assets private? As private capital's involvement in healthcare grows, will it face more regulatory scrutiny?
- **Will deal activity continue to become more geographically dispersed?** The US's mix of high spending, large commercial payers, and dynamic capital markets has historically made North America the hub of global healthcare buyout activity. However, the distribution of deals in 2021 continued tilting toward Asia-Pacific, as investors gained confidence in the region's healthcare assets. Similarly, deal value for biopharma and life sciences tools grew significantly faster in Europe than in any other region. As competition for North American assets continues to rise, will companies in other areas offer better value and attract a greater share of investment? Will more investors look to Europe and Asia as part of their value creation plan?
- **How will AI continue to transform every healthcare sector?** Artificial intelligence (AI) is already accelerating therapeutic discovery, optimizing supply chains, automating payer and provider back offices, and enabling digital and value-based care models. As AI starts to guide diagnosis and clinical decision making at scale, how will precision medicine and the doctor-patient relationship evolve? How can we protect marginalized populations from the inequities sometimes perpetuated by AI? What role can AI play in addressing labor shortages and clinician burnout?

Looking at individual sectors, these investment themes are likely to emerge or intensify.

Healthcare providers

- Superior clinical outcomes, strategic playbooks for growth, central IT infrastructure, and engaged teams will distinguish successful provider businesses.
- A new wave of specialty practice roll-ups in disciplines with an eye toward value-based care, such as cardiology and orthopedics, will accelerate.
- Companies that help incumbent brick-and-mortar health systems compete with the disruptive innovators on value and customer experience will present opportunities.
- Labor shortages could persist, so organizations that invest in a better work environment and technologies that streamline workflows will be more resilient.
- Growth of disruptive home-based care models, such as hospital at home, will accelerate, creating opportunities to invest directly in these models as well as the technologies and services that support them.

Healthcare payers

- As payers evolve into diversified health services companies, technologies that help them streamline or automate core payer functions will attract investor interest.
- Companies that help payers deliver a differentiated member experience and better health outcomes through improved member engagement will attract more attention.
- Beyond Medicare Advantage, value-based Medicaid and commercial models will attract increasing investment as value-based care takes off in the Medicaid and employer-sponsored insurance markets.
- Specialty-specific benefit management solutions—especially in high-cost categories such as dialysis—will see a surge in investor interest, but will require thoughtful strategic planning to optimize value creation.
- Firms that help payers and risk-bearing providers address the social determinants of health will thrive.

Biopharma

- Tools that use AI and multiomics data to accelerate drug discovery and development will grow rapidly.
- Pharma services platforms across research and commercialization will continue to attract activity.
- Derivative plays in specialty pharmaceuticals, including specialty pharmacies and disruptive pharmacy benefit managers, will entice investors.
- As investors gain confidence in their scientific judgment, directly investing in assets with pipeline risk may present unique opportunities for high returns.
- Cutting-edge therapeutic modalities, especially cell and gene therapies and mRNA, will grow and create openings for deals.

Medtech

- Equipment management, maintenance, and repair specialists will become more valuable as cost pressures further weigh on providers' income statements, reinforcing the value of extending equipment life.
- As demand rises for technologies that deliver better outcomes, specialty contract development and manufacturing companies and firms in preclinical, commercialization, and regulatory support will all warrant investor interest.
- Particularly in medtech carve-outs, there will be opportunities to replicate proven playbooks for reigniting growth through commercial excellence and M&A.

Life sciences tools and diagnostics

- Diagnostics providers will continue to expand as hospitals and other care facilities increasingly outsource testing services and as direct-to-consumer testing ramps up.
- New technologies that miniaturize, automate, and digitally integrate lab workflows will attract growing investor interest.
- Enthusiasm for “pick-and-shovel” businesses that support the next wave of innovation will continue.

Healthcare IT

- Digital health tools that prove superior clinical outcomes, target more diverse patient populations, and integrate with in-person care will thrive.
- Platforms that enable customer-centric digital front-door care models, including digital triage, telemedicine, and digital payments, will attract growing attention.
- As fintech companies expand in healthcare, solutions that simplify and unify payments as well as take fraud, waste, and abuse out of the system will draw increasing focus.
- Investors should track the unique technology needs of combined provider and payer entities in the US—payers with provider networks, providers with insurance plans, and providers operating under capitated payments.

Discontinuity opens doors for innovators and incumbents alike, and for societies committed to health equity in the wake of immense suffering. The next few years are bound to bring substantial changes to an industry used to moving at a glacial pace. Healthcare investors who create value—in both health improvements and the financial returns that follow—will be the champions who stand out in the years to come.

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