



Global Healthcare Private Equity and Corporate M&A Report 2020

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Welcome letter

Healthcare private equity had another banner year, topping off a remarkable decade. Whatever macro-economic risks simmered in 2019—from slowing economies to ongoing or debated regulatory reforms—they did not temper investor enthusiasm for this resilient sector.

Deal count may have remained flat compared with 2018, but disclosed deal value rose markedly. Similarly, corporate M&A disclosed deal value rose to an all-time high on the back of two megamergers. Exits were steady and holding periods remained low as portfolios returned to healthier positions.

Investors grasp the benefits of robust demand based on demographics and rising incomes; technological innovations that can improve medical outcomes and reduce the complexity of processes such as payments; and new business models in response to cost pressures and calls for greater efficiency and effectiveness in delivering care.

New sources of capital continue to flow in from eager investors worldwide, who embrace the industry's fundamental strengths. Investors grasp the benefits of robust demand based on demographics and rising incomes; technological innovations that can improve medical outcomes and reduce the complexity of processes such as payments; and new business models in response to cost pressures and calls for greater efficiency and effectiveness in delivering care.

These strengths have powered the steady expansion of healthcare investing over the past decade, so that healthcare's share of all PE activity now roughly matches healthcare's share of GDP in many national economies. Think of the sweeping changes in the US, for example. The decade brought the Affordable Care Act (ACA), the expansion of private Medicare, advances in technology beyond the adoption of electronic medical records (EMR), a shift to specialty drugs and consolidation among providers. All of these were considerations that affected the investment landscape.

Our report this year covers a number of intriguing developments:

- **Finding new uses for data and analytics.** Health-related data has grown exponentially, but putting the data to valuable use and monetizing it has largely eluded companies to date. Our spotlight on data and analytics describes three business models that show the greatest promise.

- **Tracking the liftoff of HCIT.** A decade ago, much of healthcare information technology focused purely on adoption of EMR solutions. The advances since then now allow IT to help reduce costs and improve outcomes across a range of subsectors, from running pharmaceutical clinical trials more efficiently to managing costs of self-funded employer plans. Five distinct investment themes emerged during the year.
- **Going big in Europe.** Investors put the region squarely on the map with large deals such as Nestlé Skin Health. Further, European funds pursued assets in both Europe and North America, and their overseas interest is likely to continue.
- **Riding a wave of innovation in biopharma.** Advances in cell and gene therapy along with life sciences diagnostics sparked excitement and drew capital from both sponsors and corporates. These technologies require different R&D and commercialization models, and we expect to see more funds take the plunge.
- **Asset scarcity and intense competition in the payer sector.** Payer and related services continues to attract attention, particularly assets that improve financing flows, support Medicare Advantage and other complex populations, or lower the costs of self-funded employer health plans. We also see value chain realignment and build-out of services businesses as new levers of growth.
- **Monitoring regulatory and political changes.** In the US, the expansion of Medicare Advantage and the Food and Drug Administration's push to speed up the pathway to new drugs have been key parts of the regulatory scene. Now investors will be monitoring the US presidential and congressional election for possible changes to the payer system and drug pricing. In Europe, changes include new medical device regulations coming into force. Wherever a regulatory shift is underway, diligence and scenario planning around the probable effects become even more important.

What's next? The possibility of a recession will be palpable throughout 2020. Regardless of when, or whether, a downturn hits, the question of how investments perform during a holding period that includes a recession will figure in investors' plans.

We see several reasons why healthcare should remain a strong sector for private equity investments in the near future. The industry's performance has proved resilient through past recessions. Aging populations and the growing incidence of chronic disease will boost demand, and supply has not caught up in some countries, particularly in the Asia-Pacific region. Innovation has not abated, fueling practical solutions that attract private capital. Further, healthcare remains fragmented and inefficient in many service markets, affording opportunities for consolidation.

The ample stores of dry powder, moreover, must be put to work. Strong demand for assets, plus intense competition from a range of financial sponsors and corporate buyers, should keep valuations and multiples high for the near future, particularly for gem assets.

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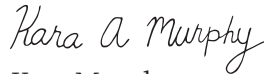
All of this leaves investors focused on creating good returns even if they can no longer confidently rely on multiple expansion. Higher prices raise the bar for planning early—incorporating more factors into diligences so that investors can start creating value right out of the gate. They will want to consider both where to play (what subsectors, geographies and products) and how to win (through levers such as commercial excellence and performance improvement), as well as creative deal approaches (such as bundling of assets).

One final thought. Healthcare has come under more scrutiny regarding what is “right” for the public well-being. All the efforts of the past decade have done little to curb rising healthcare costs in many countries, and now the bar has risen. Can the next wave of investments do anything to bend the cost curve? We are cautiously optimistic about what lies ahead.

We look forward to collaborating with you over the coming year and seeing what the next decade has in store.



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1. Healthcare private equity market 2019: The year in review

At a Glance

- ▶ Healthcare private equity activity in 2019 posted a very strong performance relative to the prior year. Total disclosed deal value reached \$78.9 billion, the highest on record, and the deal count of 313 was in line with the 316 deals of 2018.
- ▶ The average deal size rose roughly 25% as funds focused more on larger assets. There were 27 deals greater than \$1 billion in value in 2019, compared with 18 such deals in 2018.
- ▶ Consistent with most of the past two decades, North America remains the most active region, and provider and related services the most active sector.
- ▶ Biopharma had an exceptional year as disclosed value grew 146% to \$40.7 billion. HCIT across sectors also excelled, with value doubling to \$17.5 billion.

Private equity fended off macroeconomic risks in 2019 to log another solid performance, and healthcare in particular expanded its share of overall deal activity.

For all of private equity, a growing consensus expects a global recession in the near future. Geopolitical conditions ranked as the second-highest concern on average for PE fund general partners (GPs) worldwide, behind overheated asset valuations, a recent Preqin survey found. Yet despite a less favorable macro environment, global buyout deal value reached \$444 billion, lagging 2018 but on par with the past five years. The number of buyout deals, meanwhile, remained flat at roughly 1,800 (excluding add-ons).

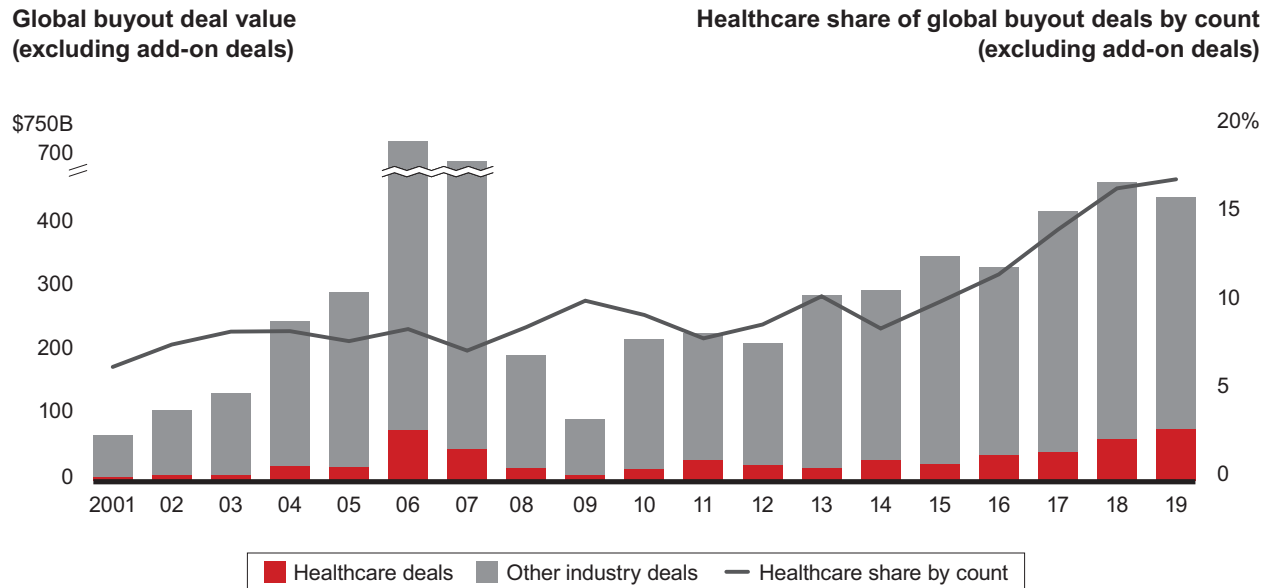
Healthcare private equity, however, had another banner year. It outperformed the broader PE market, representing 18% of all disclosed deal value, up from 14% in 2018 (*see Figure 1*). There were 313 healthcare deals in 2019, totaling \$78.9 billion in disclosed value (*see Figure 2*).

The average deal size rose roughly 25% in healthcare, as funds turned to larger assets with 27 deals greater than \$1 billion in value in 2019 compared with 18 such deals in 2018, including the largest buyout in at least the past decade: the \$10.1 billion acquisition of Nestlé Skin Health by EQT and Abu Dhabi Investment Authority (ADIA) (*see Figure 3*). Larger deals signal investor confidence in putting a greater share of the portfolio in healthcare assets. By contrast, in the broader PE market the average size dropped for the first time since 2014. GPs closed fewer megadeals across all of private equity due to stiff competition and rising asset prices.

Several factors account for the industry's durable investment performance, notably strong underlying demand for healthcare. This comes from an aging global population, a growing incidence and treatment

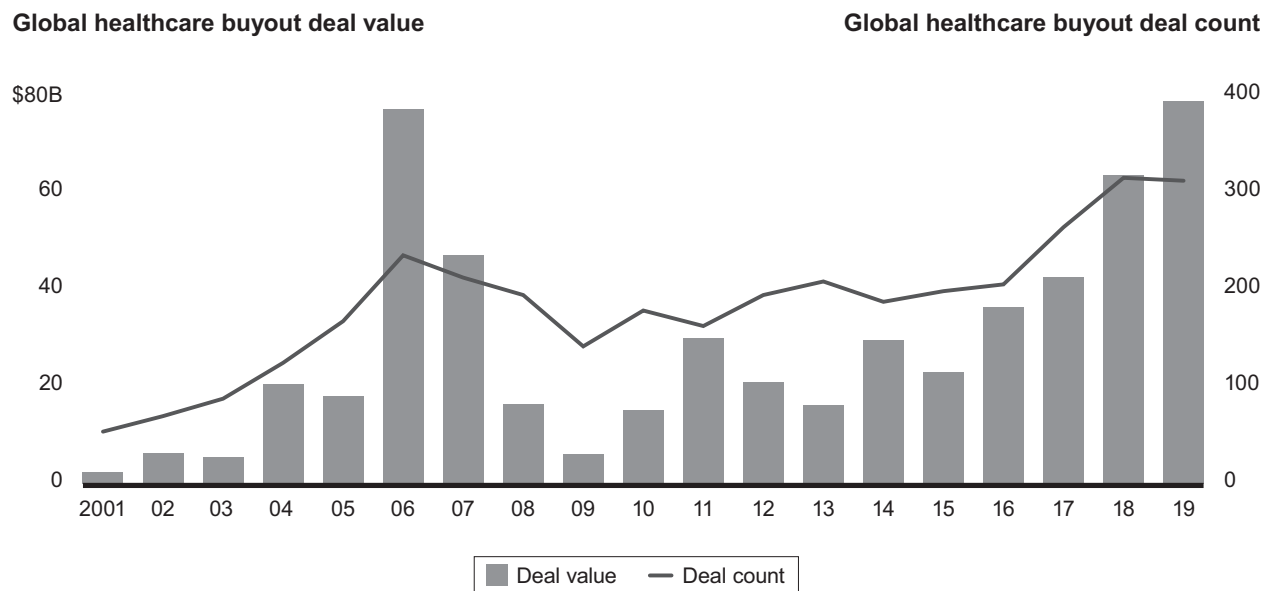
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Figure 1: Private equity investors increasingly flock to healthcare assets



Notes: Excludes spin-offs, add-ons, loan-to-own transactions and acquisitions of bankrupt assets; based on announcement date; 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 2019 sponsor classifications
Sources: Dealogic; AVCJ; Bain analysis

Figure 2: Healthcare private equity deals reached the highest disclosed value ever in 2019



Notes: Excludes spin-offs, add-ons, loan-to-own transactions and acquisitions of bankrupt assets; based on announcement date; 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 2019 sponsor classifications
Sources: Dealogic; AVCJ; Bain analysis

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Figure 3: The 10 largest announced deals of 2019 accounted for almost 40% of disclosed value

Target	Target region	Acquirer(s)	Acquirer region	Sector	Approximate deal value (\$ billions)
Nestlé Skin Health	Europe	EQT; ADIA; PSP	Europe	Biopharma and related services	\$10.1
Press Ganey Associates	North America	Leonard Green & Partners; Ares; GIC; British Columbia	North America	Provider and related services	4.2
Waystar	North America	EQT; Canada Pension Plan Investment Board	North America	Provider and related services	2.7
Capital Vision Services	North America	Goldman Sachs Capital Partners	North America	Provider and related services	2.7
Cambrex Corp	North America	Permira	North America	Biopharma and related services	2.4
EyeCare Partners	North America	Partners Group Holding	North America	Provider and related services	2.2
Zelis Healthcare/RedCard Systems*	North America	Bain Capital	North America	Payer and related services	1.9
China Biologic Products Holdings	Asia-Pacific	Centurium Capital Management; PW Medtech Group; CITIC Capital Holdings; Hillhouse Capital Management; Parfield International; Temasek Holdings (Private)	Asia-Pacific	Biopharma and related services	1.9
GoHealth	North America	Centerbridge Partners	North America	Payer and related services	1.4
Advarra	North America	Genstar	North America	Biopharma and related services	1.3
Top 10 deal value					30.8
Total healthcare PE buyout deal value					78.9

*Bain Capital acquired 34% ownership at an enterprise value of \$5.7 billion

Notes: Sum 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 time of announcement; deal values are approximate and based on information from press releases, news articles, Dealogic or AVCJ

Sources: Dealogic; AVCJ; Bain analysis

of chronic disease, and rising incomes in emerging markets. In addition, the levels of dry powder, or uncalled capital, keep mounting and must go to work. More PE funds are investing in healthcare, and more individual funds are trying to allocate more of their capital to healthcare. Given how healthcare's performance held up during the past recession, limited partners (LPs) view healthcare as resilient at any stage of an economic cycle and thus an increasingly attractive area for their capital, as referenced in our report last year. According to Bain & Company analysis in an exclusive partnership with CEPRES, North American healthcare PE investments made during the past recession had a multiple on invested capital (MOIC) nearly 50% higher than other sectors.

Moreover, 2020 Bain research shows that US healthcare industry profit pools will grow at a 5% annual clip over the next five years. Rising disease rates, new innovative therapies, increased enrollment in Medicare Advantage and continued (though slowing) growth in pricing will more than offset ongoing government reimbursement pressures and consolidation in some sectors.

Along with deal activity, healthcare exits also posted a banner year. Disclosed deal values rose 29% to \$40.8 billion and count rose 13% to 126.

In the adjacent field of corporate M&A, deal value rose roughly 24% in 2019 on the back of two mega-deals: Bristol-Myers Squibb's acquisition of Celgene for \$97 billion and AbbVie's purchase of Allergan for \$85 billion (both deals included net debt).

As in past years, corporates used M&A to build their core capabilities and place option bets on potential disrupters in their respective industries, while simultaneously divesting underperforming and non-core assets.

This proved to be a mixed blessing for PE investors. While corporate acquirers can create intense competition for assets, they also can serve as partners to PE investors that thereby gain access to highly valued assets. Corporates come with a set of complementary capabilities.

Deal activity showed some regional divergence in 2019. North American activity rose modestly, and disclosed value jumped to \$46.7 billion, compared with \$29.6 billion in 2018. In Europe, volume stayed relatively flat while disclosed value rose about 11% to a new high of \$19.7 billion, boosted by the \$10.1 billion Nestlé Skin Health acquisition.

Upward movement in those regions was partially offset by a decline in Asia-Pacific volume due to declining activity in China; however, disclosed value in the region was still over 60% above its five-year average, reaching the second-highest level since the most recent recession.

Across regions, we saw a few significant trends during the year, including the following:

- higher valuations prompting creative deal angles;
- biopharma rapidly gaining popularity;
- HCIT rising in popularity across sectors; and
- an increased appetite for select healthcare-heavy assets, along with pipeline risk in life sciences.

Higher valuations prompt creative deal angles

Competition for high-quality assets has intensified, pushing valuations steadily higher. Both financial sponsors and corporate acquirers had to get more creative in gaining access to deals and then figuring out how to generate outsize returns. Financial sponsors used a range of creative deal approaches, including partnering, looking to public markets, maintaining minority positions in investments and expanding their value-creation theses.

Take partnering: In 2019, half of the deals valued over \$1 billion included a consortium of financial sponsors or a corporate partner. For example, a consortium led by Leonard Green & Partners and Ares Management Corporation acquired Press Ganey Associates, the industry leader in patient surveys, for \$4.2 billion.

Buyout funds also retained minority interests in assets upon exiting, allowing these funds to lock in a portion of gains at current valuations while also maintaining access to continued upside. TA Associates maintained a minority stake in Aldevron, which it sold to EQT.

To ensure returns in the face of high valuations, more investors determined that they should no longer depend on multiple expansion, and must design more robust value-creation plans. Their levers range from buy-and-build, to buy-and-merge, to commercial excellence tactics that will grow organic sales. One indication of PE firms' sharper focus on value creation has been the record demand for operating partners, reported by executive search firm Heidrick & Struggles.

Biopharma

When we look across sectors, nearly all of the increase in deal value came in biopharma and related services. The sector rose by \$24.2 billion, including major deals such as the Nestlé Skin Health carve-out and also a number of others over \$1 billion, such as Advarra and China Biologic Products Holdings. Products, services and HCIT supporting R&D and commercialization efforts of drugmakers continue to be of highest interest, but early-stage technology investment also continues to grow.

HCIT

HCIT has doubled in value since 2018, rising by roughly \$9 billion to \$17.5 billion. Investors were especially excited about HCIT tied to payers (as illustrated by the Zelis Healthcare/RedCard Systems investment) and biopharma (such as eResearch Technology, or ERT), in addition to ongoing interest in provider IT (such as Waystar).

It's clear that HCIT has advanced to a new stage. Whereas it once involved narrower activities, like adoption of electronic medical records, now companies apply IT to reduce complexity, contain costs and fuel innovation throughout the system. Data and analytics have become prominent, as two notable deals of the year involved companies that create and compile data for customers—Definitive Healthcare and Press Ganey.

Taking on risks

Investors showed more appetite for taking on reimbursement risk and pipeline risk. More funds focused on niches such as behavioral health and home/hospice care, where they aim to develop category leadership or realize efficiencies through consolidation.

Large buyout firms continued to show interest in healthcare-heavy assets. For instance, TPG raised \$2.6 billion—the largest pool of capital dedicated to healthcare buyouts—and quickly deployed that capital into businesses on the front line of care delivery, like Kelsey-Seybold Clinic, a multispecialty, risk-bearing physician group and Medicare Advantage plan.

As for pipeline risk, life sciences, which typically involve early-stage risk, also proved hot during the year. For instance, Blackstone Life Sciences partnered with Novartis to create Anthos Therapeutics, a biopharma company dedicated to developing therapies for cardiovascular disease.

Healthcare data moves to center stage

From the heartbeat captured by a jogger's fitness tracker to the treatments at an emergency room, health-related data has been growing exponentially. Putting this data to valuable use and monetizing it has largely eluded most healthcare-related companies, though a few have recently begun to capitalize on proprietary data.

Several other industries have already found ways to use data to create entirely new business lines and upend established markets. In movies and television, researchers once could obtain only ticket sales and viewership estimates. As more people streamed shows online, companies such as Netflix began to harvest new forms of data that showed how viewers browsed, when they stopped watching an episode and what they switched to—all of which allowed Netflix to eventually compete against traditional movie and TV companies.

Healthcare faces a similar disruption by new, data-intensive companies. To be sure, healthcare has more regulatory complications than most industries, including strict privacy controls, as well as a fragmented system of providers, payers and patients that impede the collection and sharing of data. Still, the surge of interest in data affords opportunities that can be assembled within a PE portfolio. Potentially valuable use cases include the following:

- helping consumers make better decisions about healthy living;
- helping them find the right care and understand the true cost of that care;
- making care delivery more efficient for payers and providers;
- helping providers harness the power of artificial intelligence (AI) and robotic process automation;
- making clinical trials and R&D within biopharma more efficient;
- determining the commercial positioning of drugs through real patient data and evidence; and
- speeding up how a core business runs.

Where the value lies

Not all data will be equally valuable. What makes a data asset valuable for PE investors is a blend of several characteristics.

First, the data should solve an important use case, addressing a valuable pain point in some unique ways. While this may sound obvious, healthcare companies too often compile data without a clear purpose in mind.

Second, value lies in having a critical mass of data, so that it is solidly representative by being broad enough or longitudinal enough.

Third, the data should be unique or at least possess some proprietary aspect, through the data itself or a creative linkage of multiple sources, or through proprietary analytics.

Fourth, the data should be organized and structured such that it is easy to manipulate and analyze.

Finally, the data should come with access rights so that it can be shared with or sold to third-party organizations without violating privacy laws such as HIPAA controls on data sharing in the US.

Successful companies don't worry about building an elegant, perfectly scoped data set. Instead, they have improvised with scrappy, sometimes manual approaches to generate value from proprietary data.

Three promising business models

Healthcare's fragmented market, along with the strict privacy controls in many countries, makes it challenging to create longitudinal data that is sufficiently holistic, including clinical claims and pharmaceutical data.

Successful companies don't worry about building an elegant, perfectly scoped data set. Instead, they have improvised with scrappy, sometimes manual approaches to generate value from proprietary data. Companies are taking three promising tacks:

The core data provider. One option is to buy a traditional data company whose core business in its simplest form is to create and sell data. Such companies often have a beachhead of data into which investors can tuck other interesting data sources. Even when the data is not highly proprietary, its use and linkage to other data can make it valuable.

For instance, Advent acquired Definitive Healthcare, which has assembled and continuously refreshes a leading provider database incorporating links to other industry data, such as claims, that customers value for a range of uses.

The shape shifter. Other companies have realized that their core business is generating critical data that they could either use to transform their business model—as Netflix did—or resell for a different use case.

Flatiron Health, a healthcare technology and services company, illustrates this tack. Flatiron had an electronic medical records (EMR) platform designed for oncology care that touched 2.1 million

active patient records as of 2018 and had longitudinal data. Pharma companies were interested in applying the data to several use cases ranging from smarter R&D to reducing control groups required in clinical trials. Because the EMR data was not clean, Flatiron invested heavy scrubbing to turn unstructured data—low-resolution PDF lab reports, audio files and digital copies of handwritten notes—into structured data. Once Flatiron completed the scrubbing, it could sell a unique data set that served a clear need at a specific customer phase within pharma oncology R&D.

Individual data sources may or may not be interesting commercially, but when pulled together and subject to proprietary analytics could yield rich value.

The analyzer. A third option is to buy an analytics-oriented data company. Individual data sources may or may not be interesting commercially, but when pulled together and subject to proprietary analytics could yield rich value. Aetion, for example, serves as a bridge between pharma companies and payers, which need to agree on the real-world efficacy of a given treatment to support outcomes-based pricing agreements. Aetion's analysis provides a neutral and credible third-party perspective.

While the promise of healthcare data is intriguing, not all data has equal value. Due diligence should make a holistic assessment, including use cases and completeness of the data as well as whether investors can articulate the need for potential customers.

As data increasingly becomes top of mind for PE investors, there are a few things that best-in-class investors are starting to do:

- weigh the trade-offs of investing in a core data provider;
- assess the existing portfolio to understand hidden monetization opportunities or a business model that pivot data would enable;
- as part of diligence on new assets, think holistically about whether there is a data monetization play that could be made, or a business model pivot that data would enable; and
- do diligence on whether data could disrupt an industry, so that investors are not blindsided by a Netflix-like insurgent.

Investors will need to play both defensively and offensively in their data investments, and they should think expansively. Monetizing the wealth of healthcare data entails scrappy, hands-on work to polish data diamonds in the rough.

Investors must consider the potential effects of regulatory reforms worldwide

Regulation has been a key factor impacting the healthcare industry for decades. Although investors constantly assess the potential effect of regulation on specific investments as part of due diligence, we have not seen a material shift in investor behavior as a result of some of the recent regulatory rumblings, in part because of a belief in the continued positive macro fundamentals and increasing likelihood that new, game-changing regulations won't be forthcoming anytime soon.

With that context, let's turn first to the US. In any US election year, issues of regulation and reform surface. With the November US presidential and congressional election, potential reforms span the payer landscape, drug pricing and other administrative and legislative changes, and are particularly relevant if a Democratic candidate and a Democratic-majority House and Senate are elected. Europe and the Asia-Pacific region also have ongoing regulatory efforts that could have mixed effects on investors. Let's examine the US situation first.

With the November US presidential and congressional election, potential reforms span the payer landscape, drug pricing and other administrative and legislative changes, and are particularly relevant if a Democratic candidate and a Democratic-majority House and Senate are elected.

US payer reform

Several federal-level reforms could come after the November elections. Most options would increase the number of people covered by government or government-supported plans and would be likely to result in some compression of rates depending on the specific plan enacted. Here is a rundown of key options: single payer, private insurance retained with a buy-in option, and reversal of the Affordable Care Act (ACA).

The single payer option

A single federal program for all US residents would replace private insurance and Medicare for covered benefits, though it probably would not restrict supplemental insurance for noncovered benefits. While much of the discussion has focused on a publicly paid, publicly administered plan, one option would use private insurers to manage the single payer program—akin to Part D, Medicare Advantage or Medicaid managed care. A single payer system would be the most disruptive option, but many view that option as not politically feasible. Possible effects on each sector follow:

- **Payers:** Single payer legislation would largely eliminate the need for private major medical insurance, including Medicare Advantage programs, outside of supplemental insurance, assuming that it is publicly administered.
- **Providers:** Providers would see a potentially substantial negative effect on prices, but potentially higher volumes and somewhat streamlined costs.
- **Medtech:** Most medtech companies would be affected indirectly as providers pass on costs to suppliers, though this will vary by product type. A single payer plan might also reduce the willingness to pay for innovation.
- **HCIT:** The fallout would vary by type of technology. IT that spurs efficiency might get a boost, depending on adoption. Other areas, such as the revenue cycle, would be negatively impacted, with an open question on any potential transition plan and the required technology to support this option.

Private insurance retained with a buy-in option

Private insurance with a buy-in option could be publicly or privately run. The publicly run version would be a federal health insurance option offered to eligible residents that competes with private insurance options—probably akin to the public option entertained during the Affordable Care Act debates in 2009–10. The privately run version would include buy-in options for all eligible residents, such as a Medicare buy-in to expand eligibility. Across all options, there is also a question on whether employers would be allowed to subsidize a buy-in for employees, potentially affecting the coverage of more lives. Possible effects:

- **Payers:** If the outcome is a Medicare buy-in, broadening the scope of privately run public plans, this could expand the opportunity for Medicare Advantage payers.
- **Providers:** Expanded coverage could mean higher covered volumes, with an open question on the rate impact depending on the chassis (private or public) and who is allowed to buy in. The consequences for rates are unclear.
- **Medtech:** There is some risk of derivative pricing pressure if providers are compressed. On the other hand, greater volume uplift from a newly insured population could benefit medtech companies.
- **HCIT:** There could be a positive effect given the added complexity of managing populations from new or expanded plans.

Reversal of the Affordable Care Act

The ACA increased access to insurance for those who were previously uninsured. It's possible that a Republican administration would further roll back many of these changes. Possible effects:

- **Payers:** If the ACA were repealed, payers with an exchange presence would potentially lose those patients and the associated margin (public data indicates that many payers are margin-positive on this population).
- **Providers:** The effect of volumes and rates would vary by specialty but would probably depress volume as more people are thrown onto the rolls of the uninsured. Hospitals would be likely to return to higher levels of uncompensated care.
- **Medtech:** There could be some risk of derivative pricing pressure if providers' profits get squeezed.
- **HCIT:** By contrast, HCIT firms would probably experience limited effects. Reversal might benefit patient-pay-focused solutions.

For biopharma, the question is tied up with separate drug pricing reform, although the sector could feel effects under a single payer scenario or as part of broader healthcare reform. A single payer model would most likely mean that the government plays a larger role in establishing rates, which would probably lower prices. Other options depend on what prescription drug reform looks like and the number of lives affected by the reform.

Drug pricing reform

Government officials have been discussing a number of options to reduce drug prices. The structure of future programs will hinge on several choices:

- **Whether price increases will be controlled.** The most likely option here would copy what already exists in Medicaid—the government recoups any price increases above inflation through increased statutory rebates from pharma companies. Democratic proposals have used this mechanism, including rolling back the past couple of years of price increases by backdating the baseline price.
- **Whether list price will be controlled.** The most extreme option here is international reference pricing, though that might not be feasible. A more likely route is statutory rebates off list price, again copying current Medicaid.
- **Whether all branded drugs are affected.** Some proposals (such as international reference pricing) apply only to the top 50 or top 250 drugs based on government spending.
- **Whether the private market is included.** One Democratic House proposal extends Medicare price reforms to the private market, so that private payers automatically get the same price as the government sets.
- **Whether patient out-of-pocket spending is controlled.** As is current practice, the main options are an out-of-pocket cap (either per prescription or annual), or moving to share rebates with patients by basing co-pays on the net price of the drug rather than the list price. The latter does not always

require eliminating rebates; that is what the Trump Administration proposed for Part D, which it could do through administrative rulemaking rather than requiring legislation. If legislation passed, the rebate system would have a better chance of being retained. Anything that reduces patient out-of-pocket spending would have positive effects for pharma companies.

There is a range of possible effects on the biopharma sector. Severely negative reforms would include the imposition of European-style health technology assessment-based price caps, as well as the extension of government pricing into the private market. Reforms limiting patient out-of-pocket spending would generally benefit the industry.

In addition, a debate continues over drug importation, mainly from Canada. Importation comes with its own concerns, such as the security of the supply chain, and actions that manufacturers could take on drug prices in Canada to close the arbitrage opportunity.

Other potential US regulatory and administrative changes

Outside of major payer reform, other areas could see movement on reform, including some that do not necessarily depend on the outcome of the elections. Potential incremental reforms would have mixed effects on investment, although across all sectors, being on the “correct” side of the cost curve, and continuing the digital and data evolution in healthcare will be advantageous.

The efforts below represent a selection of reforms that are now under discussion, ranging from comprehensive (pricing transparency reform) to narrow (increasing scrutiny of the Institutional Review Board).

Surprise billing

This topic has been hotly debated over the past year. Reform of the unexpected charges that hospital patients face when they unknowingly receive treatment from a doctor who doesn’t accept their insurance would mostly affect out-of-network providers. In that situation, the rate billed typically exceeds in-network rates. Select provider specialties will most likely be affected, with minimal effect in HCIT, medtech and pharma. Depending on the final rule, payers may see modest increases in cost in the short term, but these are easily priced into premiums in subsequent years.

Pricing transparency

The federal government might require hospitals to display prices in a consumer-friendly format. This would include list prices that hospitals use as the charge master as well as negotiated, discounted prices that providers agree on with insurers.

While reform proposals have not yet taken shape, interest in transparency is mounting. Advocates argue it would promote competition and reduce costs as consumers gain the choice to move to lower-cost facilities and more providers compete on price.

While the concept makes sense, a few aspects make the execution difficult or nuanced:

- No procedures are exactly the same, which has allowed providers to justify charging different prices.
- In theory, transparency would lower overall prices across providers in a region, but some lower-cost providers might decide to raise rates to be more in line with higher-priced providers.
- Consumers don't always decide based solely on pricing. Insurance coverage and perceived quality matter as well. Historically, transparency tools haven't achieved their penetration ambitions, raising a question on the ultimate effect of transparency, particularly for more complex services.
- Powerful provider health systems will continue to resist sweeping reform on transparent pricing.

Even absent step-change regulatory reform, investors should expect to see more results from public and private price transparency efforts, especially in consumer-facing aspects of healthcare, such as outpatient MRIs, where people can more easily understand prices. Companies in these markets that choose to introduce transparency even before a mandate might gain a competitive advantage.

Clinical trials acceleration

There has been a change in the FDA administration, and an open question remains on investment posture on clinical trials.

European reform

Except for harmonized centralized product approval processes, no common European reimbursement regulation exists. Rather, each social system acts on its own. Several legislative trends in Europe have a bearing on healthcare companies and investors.

In Germany, DVG, or the Digital Healthcare Act, will allow for a broad range of digital provision of care, such as telemedicine and online consultations or apps that help patients in recovery, to be reimbursed. That will fuel growth in digital health companies and make them more attractive investments.

In the UK, the main regulatory change in 2020 will come through the Community Pharmacy Contractual Framework, which overhauls pricing and reimbursement for certain categories of drugs sold in community pharmacies, disrupting current profit pools involving manufacturers, wholesalers, community pharmacies and payers. The legislation will open the door for generic manufacturers to capture market share from branded drug manufacturers, and will squeeze the margins of some drug distributors.

While 2020 will be the year of Brexit in the UK, the effect on healthcare regulation is likely to remain limited. Statements by regulatory agencies suggest continued collaboration and alignment between the UK and EU regulatory regimes. The immediate effect on sectors such as medtech might be a need to ensure recognition by the European Medicines Association of dossiers that were submitted through the UK-notified body in previous years.

In France, a subsegment of the market will be affected by the 100% *santé* law of 2019, which aims to limit the level of an individual's out-of-pocket spending after the social security reimbursement. The state has also limited the prices for eyeglasses, hearing aids and dental prostheses.

In Italy, after years of drug price contractions due to government interventions, that trend has slowed and prices have flattened. No further drug price cuts are expected in the near term.

Across the EU, Medical Devices Regulation (MDR) and In Vitro Diagnostic Medical Devices Regulation (IVDR) establish a higher data standard on devices approved for use. Key dates are May 2020, when the MDR regulation comes into force, and May 2022, when the IVDR regulation comes into force. Any new market entries will have to undergo the new procedure as of these dates, but could do so voluntarily before then. Noncompliant devices will leave the market at the latest by 2025.

The law has several implications for manufacturers. They will face higher operating costs over the next few years due to investments in data generation and regulatory advisory. They also risk having products taken off the market due to a backlog with the notified bodies, and potentially more complexity in executing clinical trials. Some manufacturers that have planned ahead could take market share, while others are using the occasion to prune their portfolios.

During due diligence, investors should understand the status of compliance for the product portfolio of potential targets, accounting for the costs that full compliance will entail. They should also evaluate whether being late to the game might force some parts of the portfolio out of the market. Conversely, there may be new investment opportunities in regulatory outsourcing organizations.

Asia-Pacific reform

Across Asia, regulators play an increasingly active role in addressing access, cost and quality constraints as evidenced by moves toward universal healthcare in China, Indonesia, India and the Philippines. Many regulators also recognize that digital solutions will be critical to care delivery, which shapes policy reform and raises the value of greater regulatory coordination.

China is in the midst of a multiyear national government reform to increase the quality and affordability of healthcare. A pilot program aims to accelerate the migration away from high-priced, off-patent branded drugs to generics through volume-based procurement. This program could dramatically reduce the cost of drugs through bulk buying in hospital systems, which are the primary distribution channel.

The program is likely to produce a winner-take-all outcome, and while prices will drop substantially, the winners will benefit from large volume increases. The next phase of these pilots covers medical devices and has begun to affect profit pools across the healthcare ecosystem. For investors, of course, this creates a window to identify and invest behind the winners.

In every region and country where regulatory change is underway, diligence and scenario planning around the probable effects of regulation will be essential to mitigate the risks and seize the upside opportunities.

2. Geography trends

Overview

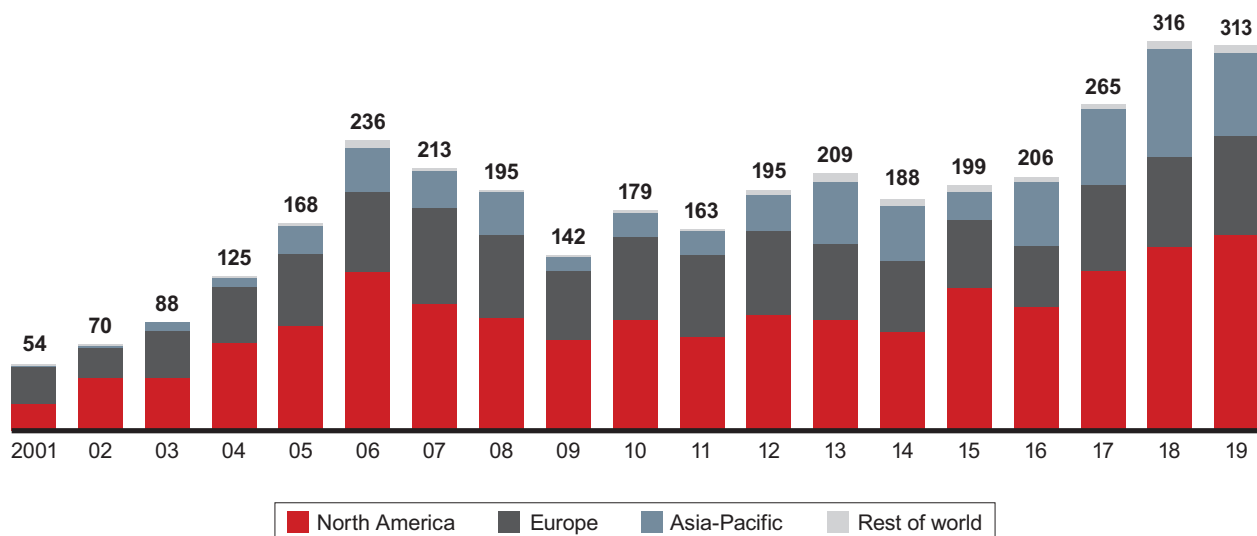
North America: North America continues to be the largest market for healthcare PE (see Figure 4). Deal values increased roughly 58% from \$29.6 billion in 2018 to \$46.7 billion in 2019, despite public-to-private deals representing a smaller share of deal value (12% in 2019 vs. 61% in 2018). Deal count increased from 149 in 2018 to 159 in 2019.

Europe: European activity increased slightly from 73 deals in 2018 to 80 in 2019. Disclosed value rose to \$19.7 billion in 2019, just above the \$17.8 billion in 2018. Deal value rose in part due to a \$10.1 billion carve-out of Nestlé Skin Health, continuing the trend of gem biopharma assets composing most of the value in Europe.

Asia-Pacific: The industry continued its long-term trajectory of growth in the Asia-Pacific region. Although disclosed value dropped from \$16.2 billion in 2018 to \$11.5 billion in 2019. The swing resulted mostly

Figure 4: Deal activity increased in North America and Europe, offsetting a decline in Asia-Pacific

Global healthcare buyout deal count



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

from a deal that was announced in 2018 and recorded in 2018 deal values, but closed in 2019: Brookfield Business Partners' \$4.1 billion acquisition of hospital operator Healthscope. Deal count declined from 88 deals in 2018 to 68 deals in 2019, potentially in part due to geopolitical tensions in China.

Rest of the world: As for the rest of the world, there were six deals, centered in South America and the Middle East, in line with 2018 deal count. The only disclosed deal value in 2019 was the \$1 billion acquisition of Lumenis, an energy-based medical solutions provider, by Baring Private Equity Asia. There were no disclosed deal values in 2018.

North America: Investors flock to healthcare, intensifying competition for assets

Section highlights

- Intense competition for assets came from many different entities, including very large buyout funds, European funds, tech-focused funds and corporates. That led to creative partnering as well as some funds maintaining a minority stake after a partial exit.
- Disclosed deal value rose to \$46.7 billion in 2019, compared with \$29.6 billion at slightly higher deal volume compared with 2018, as the average deal size continued to increase.
- Value rose on the back of deals between \$1 billion and \$5 billion, but there were no megadeals or large public-to-private takeovers. Provider remained the most active sector with 96 deals, or 60% of all deals in 2019.
- Healthcare remains quite resilient to macroeconomic factors, as shown by its solid performance in previous recessions.

Healthcare investment in North America has been riding a wave of favorable long-term trends, notably an aging population, the rising incidence of chronic disease and expanded access stemming from legislative action.

In 2019, regulatory uncertainty has played a bigger part of the diligence approach in many sectors. The extra scrutiny required gives slight advantages to investors who are more comfortable with healthcare-heavy assets, such as in behavioral health (see the chapter “Investors must consider the potential effects of regulatory reforms worldwide”).

Despite some uncertainties in the market, deal value rose substantially from \$29.6 billion in 2018 to \$46.7 billion in 2019, as financial sponsors continued to execute large deals.

More capital than ever has been chasing healthcare investments in North America. A broad set of funds are pursuing deals in the space:

- European funds such as Cinven, EQT, JAB Holding, Nordic Capital and Partners Group;
- some tech-focused funds such as Genstar Capital and Vista Equity Partners; and
- funds that historically have excelled in this North American sector.

Getting creative through partnerships and minority interests

Strong competition for assets and high valuations have prompted buyout firms to employ more creative strategies in order to win deals.

For example, some firms teamed up as a way to spread risk and gain access to large assets with high multiples. EQT sold Press Ganey, a provider of industry-leading patient surveys and support for understanding the patient experience, to a consortium including ADIA, Leonard Green, Ares and British Columbia Investment Management Corporation, for \$4.2 billion. Press Ganey's value had doubled since EQT bought Press Ganey through a public-to-private transaction for \$2.35 billion in 2016, making for an attractive equity outcome.

In another PE fund-corporate partnership, TowerBrook Capital Partners and Ascension Health, a health system, acquired Compassus, a hospice provider based in Tennessee, for \$1 billion. This was the third time that TowerBrook and Ascension had partnered with each other. And Welsh, Carson, Anderson & Stowe and Walgreens invested in Shields Health, a specialty pharmacy services provider.

Other buyout funds retained minority interests in assets upon exit, allowing them to lock in a portion of gains at current valuations while also potentially enjoying upside in the future.

For example, Bain Capital retained a minority interest in Waystar, which it sold to EQT and Canada Pension Plan Investment Board (CPPIB). Nordic Capital retained equity in ERT after Astorg Partners invested.

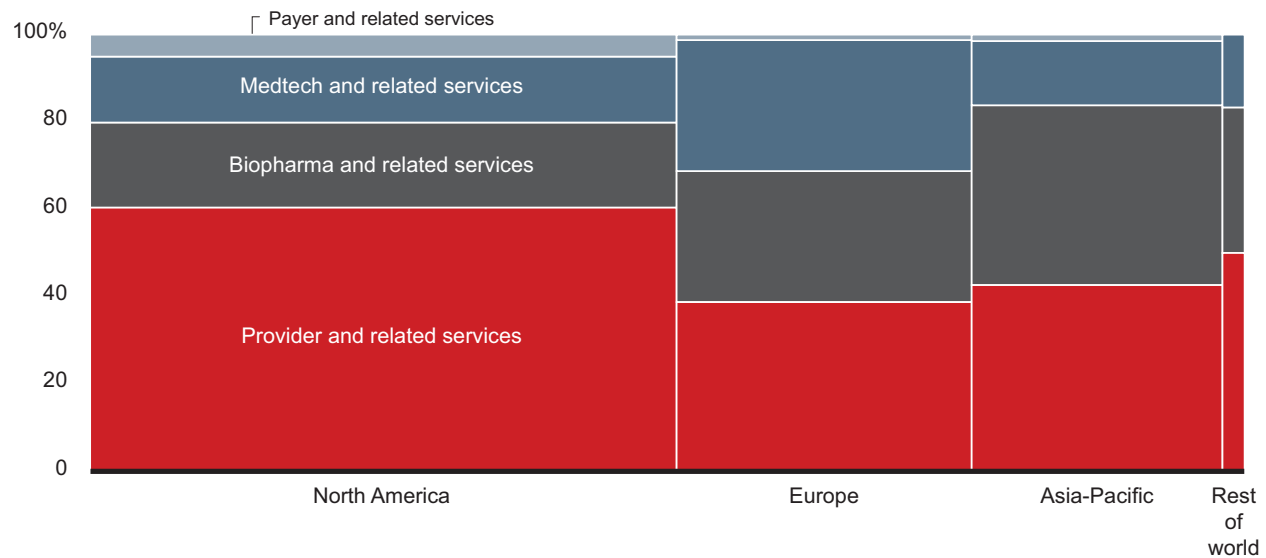
Retail health continued brisk activity on the strength of its underlying fundamentals, including favorable demand, lower reimbursement exposure and buy-and-build potential.

Providers and related services: The largest sector keeps getting larger

The provider and related services sector once again accounted for the most deals, with 96 in 2019, up from 84 in 2018 (see Figure 5).

Retail health continued brisk activity on the strength of its underlying fundamentals, including favorable demand, lower reimbursement exposure and buy-and-build potential. For example, Partners Group acquired EyeCare Partners, an operator of optometry clinics, from FFL Partners for \$2.2 billion.

Behavioral health also attracted investors who recognize the positive macro factors of population growth, an increasing awareness and destigmatization of mental health and substance abuse, treatment gaps

Figure 5: The provider sector continued to be the most active across all regions**2019 global healthcare buyout deal count****Total=313 deals**

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

and a favorable regulatory environment. One hot area was treatment for autism, as evidenced by deals such as Thomas H. Lee Partner's acquisition of Centria Healthcare, a provider of therapy services to children with autism, as well as other nursing services.

Likewise, investors in home/hospice care looked to establish delivery models to benefit from macro trends such as an aging population, as well as the chance to further consolidate a fragmented segment. Advent bought AccentCare, a provider of home health services, and Centerbridge Partners acquired Civitas Solutions, a provider of home- and community-based health services, in a deal announced in 2018 and completed in 2019.

Investors see attractive opportunities for physician practice management (PPM) across specialty areas including radiology, gastrointestinal (GI), ophthalmology and dermatology that are still fragmented compared with more traditional specialties such as emergency and anesthesia. There is a lot to like about certain assets if they have the right model to drive organic and inorganic growth.

Payers and related services: A scarcity of assets

Asset scarcity and intense competition in the payer and related services sector pushed multiples higher, particularly for gem assets. Prominent investment themes included the following:

- payment and revenue cycle management solutions;
- businesses that support Medicare Advantage delivery, to capitalize on growing enrollment;
- businesses that reduce costs of self-funded employer plans; and
- realignment of the value chain as payers looked to expand revenue streams outside of risk-bearing revenue.

While deal activity in 2019 matched 2018 levels, with 8 in 2019 and 10 in 2018, disclosed value rose sharply to \$3.5 billion in 2019 compared with less than \$1 billion in 2018. This resulted largely from two deals: Bain Capital's investment in Zelis Healthcare and RedCard Systems, and Centerbridge's acquisition of GoHealth, an online health insurance marketplace, for \$1.35 billion.

Biopharma and related services: Services and branded pharmaceuticals

Biopharma and related services disclosed deal value surged from \$1.9 billion in 2018 to \$17.3 billion in 2019, representing 37% of North American value and 19% of deal activity.

Investments in biopharma included services like contract design and manufacturing organizations as well as cell and gene therapy. TPG and Vida Ventures joined for a \$235 million investment in Asklepios BioPharmaceutical, a manufacturer of adeno-associated virus gene therapeutics. In addition, branded pharmaceuticals found buyers.

Bain Capital exemplified the trend of large-cap buyout firms establishing life science funds as it raised \$900 million for its second such fund.

Medtech and related services: Investors like category leaders and outsourced services

Medtech and related services represented 15% of deals and 5% of the disclosed value. This share of deal count remained in line with previous years, though the share of value declined from 15% in 2018. Deal activity in the medtech space has been lumpy, so a decline in one year's deals does not necessarily indicate a larger trend.

Investors showed continued interest in category leaders. They also focused on outsourced services, which allow investors to tap into medtech's attractive fundamentals and capitalize on the growing trend of outsourcing noncore functions. For example, Nordic Capital acquired Orchid Orthopedics Solutions, a medical device outsourcing service that does contract design and manufacturing, for nearly \$1 billion.

Corporate acquirers kept their hand in medtech. Carlisle Companies, for instance, acquired Providien, a provider of comprehensive manufacturing solutions for medical device companies.

In consumer medtech, PE firms also took advantage of opportunities to carve out business units that had been overlooked by their corporate parent, such as Hologic selling Cynosure, a medical aesthetics

company, to Clayton, Dubilier & Rice for \$205 million. It is worth noting that consumer medtech assets are beginning to reach a scale that draws interest from public markets. For example, SmileDirectClub, an affordable direct-to-consumer teeth-straightening service, raised \$1.3 billion in an IPO.

HCIT: A number of hot segments

A wide range of investors flocked to HCIT. They propelled growth to 42 deals in 2019, up from 32 in 2018, with a disclosed value of \$17.1 billion, up from \$8.3 billion.

Several segments drew particular interest. For instance, financial sponsors favored derivative plays of high-growth sectors, such as solutions for pharma trials and alternative site electronic medical records (EMR). Warburg Pincus invested in Qualifacts, an EHR software for behavioral health and human services, and in WebPT, an EMR provider for physical therapists.

Other hot segments include assets designed to improve financing flows, an example of which is the Golden Gate Capital investment in RCM provider Ensemble Health Partners. Companies that manage costs in self-funded employer plans also drew interest, as evidenced by Great Hill Partners' investment in Pareto, following its previous investment in Quantum Health in 2017.

Finally, financial sponsors jumped at opportunities in healthcare data. Case in point: Advent's acquisition of Definitive Healthcare.

North American healthcare assets acquired during a recession tend to outperform investments in most other sectors.

Strong fundamentals will continue, but there is less room for error

We expect the North American buyout market to remain robust based on attractive underlying fundamentals, high levels of dry powder chasing assets, and the recession-resilient nature of the industry. North American healthcare assets acquired during a recession tend to outperform investments in most other sectors. According to Bain analysis in an exclusive partnership with CEPRES, North American healthcare PE investments made during the past recession had a multiple on invested capital (MOIC) of 2.7, vs. 1.8 for other industries.

Strong demand for assets and intense competition from a range of financial sponsors and corporate buyers are likely to keep valuations and multiples high for the foreseeable future, particularly for gem assets. That leaves investors with less room for error, highlighting the need for integrated due diligence and delivering on an ambitious value creation plan.

Europe: Deal values move higher as investors look for scaling opportunities

Section highlights

- European deal activity maintained historically high levels as deal count grew to 80 in 2019, slightly higher than the 73 deals in 2018. European investors were active in both Europe and North America.
- Total disclosed deal value reached a new high at \$19.7 billion, compared with the previous high in 2018 of \$17.8 billion. Europe was more on the map with respect to prominent deals, including the \$10.1 billion carve-out of Nestlé Skin Health and the acquisition of LGC.
- The provider sector including retail health continued to be the most active sector, accounting for roughly 40% of deal activity. Biopharma again drove a majority of the total disclosed deal value.
- Regulatory uncertainty, ranging from the broad impending medical device and in-vitro diagnostics reforms, to more national-level reforms, did not deter investor interest. Brexit also seems to have had no measurable impact.

Healthcare buyout activity in Europe proved resilient through 2019, despite economic uncertainty in some countries and continued regulatory changes. Deal count increased slightly compared with 2018, stabilizing the long-term trajectory. Total disclosed deal value reached a record high of \$19.7 billion, an 11% increase from the previous peak of \$17.8 billion in 2018.

Megadeals stood out, consistent with the rise in sponsor partnering for very large deals – for example, the \$10.1 billion acquisition of Nestlé Skin Health, now Galderma, by a consortium of EQT, GIC, Public Sector Pension Investment Board (PSP), ADIA and other institutional investors.

Provider and related services: Stable demand but limited scalability across borders

The provider sector accounted for the greatest share of deal volume at roughly 40% of the region's deals, despite disclosed deal value declining from the previous year. Retail health remained a favorite subsector, due to underlying stable demand and to revenues mostly paid out of pocket and therefore not subject to reimbursement risk. Retail health also had a record of outsized returns in a few landmark deals.

These stable fundamentals allowed funds to execute buy-and-build strategies and other value-creation plans, expanding into new retail health categories. For example, Fidelio Capital acquired VetFamily, an

operator of veterinary clinics. Oaktree Capital Management acquired IASO, a Greek network of maternity/gynecological diagnostic centers and clinics. Impilo acquired The Fertility Partnership from White Cloud Capital and then acquired VivaNeo from Waterland Private Equity in an effort to build a European fertility market leader.

Political, regulatory and language constraints still limit the scalability of certain retail health provider platforms across borders, limiting broader investor interest in this space. Investors have been less interested in healthcare-heavy providers with direct exposure to reimbursement trends.

That said, some investors are pursuing scale and multiple arbitrage (adding cheaper individual practices as bolt-ons, at a lower multiple than the main platform) across nearly all verticals in retail health. These add-on acquisitions are active in Europe, but not reflected in overall healthcare deal count because they take place in the name of the platform, not the fund.

Investor interest spread to retail health derivatives that play upstream, providing services to consumer-facing providers. For example, EQT acquired Igenomix, a provider of fertility laboratory services, for \$450 million. As the market for traditional retail health assets tightens, we expect to see greater interest in companies that provide tangential services to direct-to-patient providers.

We expect investors will soon seek out smaller assets ripe for consolidation as well as a few large assets waiting to be sold—nursing homes and radiology chains among them.

Many smaller provider assets in nontraditional retail health verticals are building scale and will soon reach a size that appeals to PE funds. We expect investors will soon seek out smaller assets ripe for consolidation as well as a few large assets waiting to be sold—nursing homes and radiology chains among them.

Biopharma and related services: Both branded and generics keep growing

Biopharma activity ticked higher in 2019 to 30% in all deals in Europe, up from 25% in 2018. Investors made large bets that included the \$10.1 billion Nestlé Skin Health carve-out, the region's largest deal of the year. This carve-out was predicated on favorable underlying growth in the aesthetics business, a strong prescription dermatology pipeline, few difficulties carving out from the larger corporate parent, and opportunities for performance improvement.

While the largest deal of the year came in the branded pharmaceutical space, generics also continued to generate acute interest. The market offers sustained profit opportunities across most countries, and the fragmented nature of the sector calls for consolidation.

Two large platforms completed numerous deals in branded generics. Bain Capital and Cinven-backed STADA Arzneimittel made four healthcare acquisitions, including Biopharma's pharmaceutical prescription and consumer health business to expand presence in Ukraine, and six of GlaxoSmithKline's over-the-counter products. Advent-backed Zentiva completed multiple healthcare acquisitions, including the Central and Eastern European business of Alvogen. Next to this deal, Alvotech struck a strategic partnership deal with STADA Arzneimittel on the commercialization of biosimilars, reinforcing sectoral activity and supporting exit valuation for CVC Capital Partner's Alvogen.

Investors' interest in biopharma continued to extend to services as well, including contract development and manufacturing organizations (CDMOs) and commercial research organizations (CROs). For example, Ampersand Capital acquired Vibalogics, a CDMO that specializes in viridae, live bacteria and aseptic processing, and Permira acquired Quotient Sciences, a UK-based provider of early-stage drug development services.

Investors' interest in biopharma continued to extend to services as well, including contract development and manufacturing organizations and commercial research organizations.

Medtech and related services: A focus on outsourced services

Turning to medtech, activity remained relatively flat at 24 deals in 2019 compared with 23 in 2018.

Notable product-oriented deals included Eurazeo Capital's acquisition of DORC from Montagu Private Equity. However, investors focused mainly on services that benefit from underlying end market growth, as well as the increasingly common practice of outsourcing noncore functions. Thus, Dentressangle bought specialty orthopedics CMO Marle from IK Investment Partners and The Carlyle Group.

Investors in Europe are still navigating the Medical Devices Regulation (MDR) and In Vitro Diagnostic Medical Devices Regulation (IVDR) reforms. They struggle to price these risks or opportunities into asset valuations. In addition, European healthcare systems are giving closer scrutiny to prices.

HCIT: Investors search for companies that can expand in multiple countries

HCIT deal activity in Europe, meanwhile, remains limited. Historically, the European market for HCIT grappled with impediments to growth compared with the US, due to the diversity of languages, regulatory systems and healthcare markets across Europe.

Yet investors are starting to pay closer attention to the sector, as it holds substantial opportunity and high valuations. This is particularly true for companies whose software does not touch reimbursement issues. This group includes staffing management software, clinical trial management software, and software that addresses pharmacological and medical issues, such as digital therapeutic and diagnostic solutions. The industry still needs to find an alternative to recoding for differences in reimbursement systems, where modularizing for language can bridge the other barrier to seamless cross-country growth.

A second wave of assets in the space has emerged, with companies coming out of their growth equity phase and generating interest among PE funds. Most European HCIT investments in 2019 centered on patient outcomes and provider efficiency. For example, Vitruvian Partners invested \$50 million in Dental Monitoring, which helps orthodontists measure patients' aligners. Investcorp acquired Cambio Healthcare Systems, a provider of clinical decision support, clinical information systems and patient flow management.

We expect even more interest in 2020, as several assets using more traditional software solutions (such as software for managing hospitals) will come to market, as well as newer digital platforms that are starting to emerge as market leaders and cross a size threshold that makes them more relevant to PE investors.

European funds also displayed greater interest in North American assets in 2019, taking part in a large share of the top deals there. For example, JAB Holding invested in two US healthcare companies in 2019, including Compassion-First Pet Hospitals and National Veterinary Associates, both US providers of veterinary services. Nordic Capital invested in US-based Orchid Orthopedic Solutions and ArisGlobal.

European investors have started to raise dedicated healthcare funds because they have seen the gem investments that experienced strong exits and returns through the years.

Returns: Still lower than in the US

European healthcare returns historically have been lower than in North America. Healthcare investments made between 2009 and 2016 in Europe averaged a gross multiple on invested capital (MOIC) of 1.95, vs. a 2.42 MOIC in the US, according to Bain analysis in an exclusive partnership with CEPRES. Several factors contribute to the gap: a subscale, fragmented private payer landscape with a partly uncertain future, more public activity in the provider sector and cost containment efforts that hit healthcare-heavy assets.

However, European investors have started to raise dedicated healthcare funds because they have seen the gem investments that experienced strong exits and returns through the years. GHO Capital raised the largest dedicated European healthcare fund of roughly \$1 billion, and with the ADIA involved in the LGC and Nestlé Skin Health acquisitions, other sovereign wealth funds and family offices may play more active roles in European healthcare. For example, as previously mentioned, Dentressangle, the family office of Norbert Dentressangle, acquired Marle, the French manufacturer of implants and prostheses.

Outlook: The strongest interest in companies with little reimbursement exposure

Looking across the regulatory and political landscape, we see a number of changes continuing to affect investment at the country level: MDR, Brexit, German healthcare reforms and UK pharma reform. We explore these in detail in the chapter “Investors must consider the potential effects of regulatory reforms worldwide.”

By and large, governments in Europe will actively monitor and secure the availability of required healthcare services. Pressure on budgets will create further opportunities for investors who can help promote efficiencies in the space.

Investor interest in assets with less reimbursement exposure will remain high, particularly for investors weary of regulatory reforms.

Therefore, demand for healthcare assets should remain high across Europe in the near future, on the back of strong underlying market dynamics, healthcare’s outperformance relative to the general market, record levels of dry powder, greater appetite for carve-outs due to high multiples, appetite for public-to-privates, and the pipeline of secondary assets. Investor interest in assets with less reimbursement exposure will remain high, particularly for investors weary of regulatory reforms. We also expect demand to spike for HCIT assets and specific areas within retail health, such as in vitro fertilization and ophthalmology.

No doubt, investors will scrutinize asset valuations, potentially pushing back on some assets deemed too expensive. Some funds postponed the exit from several assets last year because of lower-than-expected valuations. This could accelerate in 2020, unless sellers back their equity story with solid facts, and potential buyers underwrite higher multiples with solid upside cases and value creation plans.

Asia-Pacific: A multiyear growth trajectory amid rapid digital adoption and a transforming regulatory landscape

Section highlights

- Healthcare investing in the Asia-Pacific region continued its sustained growth on the strength of aging populations, more chronic disease and rising incomes. Disclosed deal value reached the second-highest level since the past recession, at \$11.5 billion in 2019. Buyout volume dropped to 68 deals in 2019 compared with 88 in 2018, due to declining activity in China.
- Investment was more geographically dispersed than in the past, as China, India and Australia represented 51% of disclosed deal value in 2019, compared with 90% in 2018. In particular, deals in Southeast Asia surged to 21% of disclosed deal value. The provider sector continued to see the most activity, with 29 deals and \$4.4 billion of disclosed value.
- We saw three major investment themes: consolidating providers to execute buy-and-build strategies and achieve scale; investing in digital platforms and innovation to compensate for the gap in meeting the region's healthcare needs; and biopharma innovation as China looks to build out a local ecosystem.

Several trends have converged to put the Asia-Pacific region on a sustained growth trajectory for healthcare private equity. Aging populations, more chronic disease and rising incomes add up to strong fundamental demand. Governments are spending more, such as the universal healthcare initiative in the Philippines and Ayushman Bharat in India, and assets are attaining a scale conducive to private capital.

While total disclosed deal value of \$11.5 billion in 2019 dropped from \$16.2 billion in 2018, the 2019 level represents the second highest since the financial crisis. In addition, the largest acquisition of the past two years, Brookfield's \$4.1 billion acquisition of Australian hospital provider Healthscope, was announced late in 2018 and closed in 2019, tilting deal value to 2018.

Compared with prior years, deal activity was dispersed more widely across the region. China faced geopolitical uncertainties and regulatory reform throughout the year, resulting in what should be a short-term dip in activity. Still, disclosed deal value was over 60% above its five-year average.

Looking across borders

Southeast Asia, which historically constituted a small share of the region's deal value, expanded as assets reached the buyout sweet spot. Value increased from nearly \$720 million to \$2.4 billion in 2019. Southeast Asia saw the second-largest deal of the year in the region, the \$1.2 billion acquisition of the Southeast Asian assets of Malaysia-based Columbia Asia Hospitals by a consortium of TPG and Hong Leong Group.

Investors continued to look across country borders to place capital, including assets that have a large exposure across the region, even if not headquartered in the region. For example, Baring Private Equity Asia made two notable investments with this profile. The fund acquired CitiusTech, an India-domiciled but US-headquartered HCIT platform that serves healthcare companies across sectors, for over \$1 billion. Baring Private Equity Asia also bought Lumenis, a medical equipment manufacturer that sells laser equipment for minimally invasive surgery, from XIO Group, valuing the company at over \$1 billion.

We saw a few key investment trends during the year:

1. provider platforms with buy-and-build strategies;
2. HCIT and digital health; and
3. Chinese biopharma innovation amid restructuring.

1. Provider platforms with buy-and-build strategies

The provider sector continued to attract the most attention, representing 43% of deals in 2019 compared with 44% in 2018. Investors focused on consolidating hospitals and labs to execute buy-and-build strategies and develop scaled platforms. The private sector has stepped in to build hospital platforms where people lack access to care.

For example, KKR Asia and GIC Special Investments invested more than \$684 million in Metro Pacific Hospitals, the operator of the largest private hospital network in the Philippines. In laboratories, TPG added to its Pathology Asia Holdings platform by acquiring a minority stake in Australian drug testing company Safe Work Laboratories.

2. HCIT and digital health

As a sizable gap in healthcare access persists across most of the region, physical infrastructure cannot be built quickly enough to meet the unmet healthcare needs. However, a propensity for digital adoption throughout Asian countries has allowed digital platforms to help address those needs, often with the participation of PE investors.

For example, CITIC Private Equity Funds Management, CICC Capital and Baring Private Equity Asia made a \$1 billion investment in JD Health, an online pharmacy that is beginning to expand into online appointments and diagnoses, connecting doctors to patients in rural areas with little access to care.

PharmEasy, an Indian digital pharmacy platform, received \$220 million in an investment round led by Temasek Holdings that included a number of other funds and investors. And Halodoc, an Indonesian telemedicine platform providing doctor consultations and pharmacy services, raised \$100 million from the Bill & Melinda Gates Foundation, venture groups, Allianz and Prudential.

3. Chinese biopharma innovation with volume-based drug procurement

Underlying fundamentals make the sector attractive to investors. This is particularly true in China, where the government is investing to fuel a local biopharma ecosystem. Biopharma investments held flat at 17 in 2019, and deal values grew, despite uncertainty around the introduction of the Chinese national government's volume-based procurement pilot program.

In fact, the region's largest deal of the year was Centurium Capital's \$1.9 billion take-private offer for the remainder of China Biologic Products Holdings, a plasma collection network and fractionator. The deal provides exposure to a profitable and rapidly growing industry in the plasma-derived therapy market. Outside of China, biopharma remains a promising area as well. For example, in India, Advent acquired Bharat Serums and Vaccines, a developer and manufacturer of specialized injectable medicine, from OrbiMed PE and Kotak PE.

A pilot program in China aims to migrate away from high-priced, off-patent branded drugs to generics through volume-based procurement. This program could dramatically reduce the cost of drugs through bulk buying in hospital systems, which are the primary distribution channel.

Over the past several years, the Chinese government has been trying to increase the quality and affordability of healthcare. A pilot program aims to migrate away from high-priced, off-patent branded drugs to generics through volume-based procurement. This program could dramatically reduce the cost of drugs through bulk buying in hospital systems, which are the primary distribution channel. The program is likely to result in a winner-take-all outcome, and while prices will decline substantially, the winners will benefit from large volume increases.

In the first wave, 11 cities implemented a bulk purchase of 25 drugs, reducing some prices by over 90%. The second wave of the volume-based procurement program rolled out to the rest of China in the second half of 2019, leading to broader price cuts in off-patent drugs manufactured by foreign multinationals. We expect that Chinese biopharma companies will be best positioned to win the major contracts, which should lead to expanded investment in the near future. Longer term, Chinese companies might compete on the global stage in a fashion similar to Indian generics.

Poised for growth

Looking over the next five years or so, we expect several factors to have a big influence on healthcare in the region:

- **An aging population.** By 2025, 460 million people will be over 65 years old, with 60% of the growth in this cohort living in Asia-Pacific. They will require more health services.
- **Rising costs.** As healthcare costs rise faster than real wages, newer and more cost-effective delivery models could gain a foothold.
- **Constrained physician resources.** A recent Bain survey found that nearly half of physicians believe it will be more difficult to deliver high-quality care over the next five years due to lack of funding and resources, rising costs and a shift toward treating chronic patients.
- **Consumer expectations.** Consumers are frustrated with wait times, lack of affordability and other aspects of the care experience, which opens the door to solutions that can address these concerns.
- **Technological and medical transformation.** Asia-Pacific consumers have embraced digital tools, and digital solutions already are changing care delivery.
- **Regulatory environments.** Regulators have taken a more active role in addressing access, cost and quality constraints as evidenced by moves toward universal healthcare in China, Indonesia and recently in India and the Philippines. Many regulators recognize that digital solutions will be critical, which shapes policy reform and suggests a need for coordinating their programs.

Deal activity is likely to continue the trends of digital health, development of buy-and-build provider platforms benefiting from a fragmented and unorganized market, and a push into biopharma. We also expect cost and margin pressures to drive consolidation of smaller companies, particularly among providers.

Developments with the coronavirus, as of this report's publication, might create volatility in China deal activity in 2020. However, activity in China should pick up as regulatory reform flows through and if geopolitical tensions and virus concerns subside, particularly in biopharma, where Chinese companies are best positioned to win contracts in the future bulk-buying program. Interest in local Chinese medtech platforms could also surge as investors come to expect government reforms to spill into this sector, again benefiting local companies.

3. Sector trends

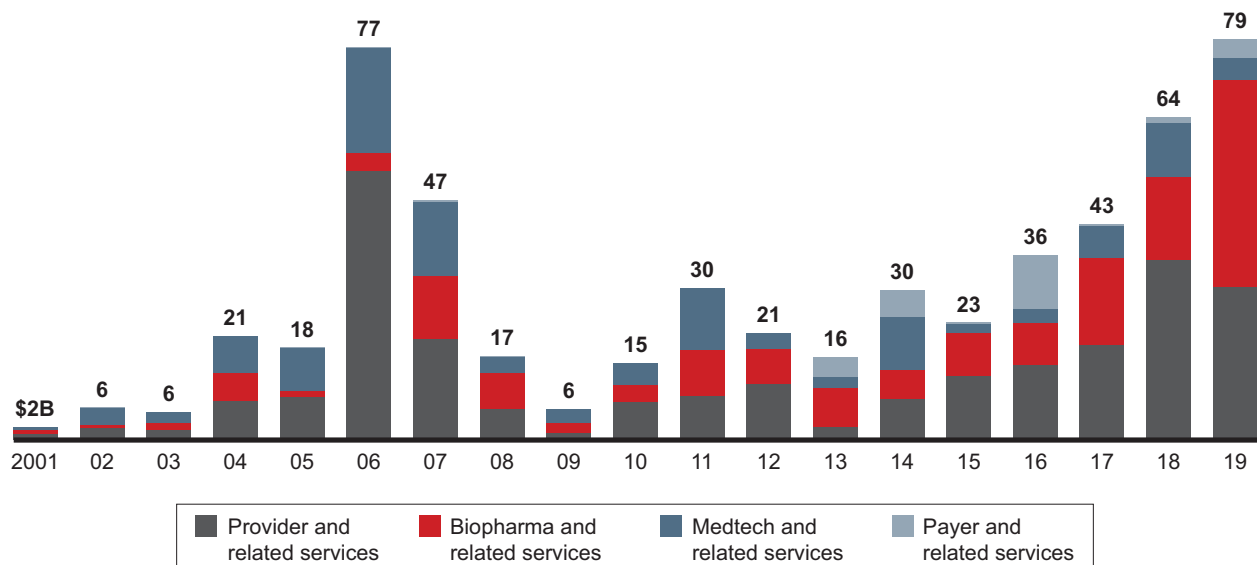
Overview

The provider and related services sector once again ranked as the most active sector, by deal volume, in global healthcare private equity during 2019. Investor interest in the payer and related services sector continued to be substantial, though deal volume remained low due to the limited pool of assets for sale. Biopharma and related services value surged. Medtech and related services declined, but because the sector tends to fluctuate, any single year does not indicate a larger trend (see Figure 6).

Finally, a surge of innovation from HCIT assets and high multiple on invested capital (MOIC) levels have attracted a wide range of investors, including corporates and buyout firms that traditionally have less history investing in healthcare.

Figure 6: Disclosed deal value reached the highest level ever in 2019 as biopharma surged

Global healthcare buyout deal value



Note: Totals are rounded
Sources: CEPRES; Bain analysis

Provider and related services: Lower-cost and consumer-focused sites of care, efficiency and models for a value-based world

Section highlights

- The provider sector had the second-highest disclosed deal value globally after biopharma, despite deal value declining to \$30.3 billion compared with \$35.5 billion in 2018. Provider volume remained flat at 159 deals in both 2018 and 2019.
- Deal activity remained stable as North America deal count increased to 96 compared with 84 in 2018, Europe deal count remained relatively flat, and Asia-Pacific deal count dropped in 2019.
- We saw three major investment themes: lower-cost and consumer-focused sites of care; the expanding role of the provider in a value-based world; and the enabling of physicians to focus on care delivery.

The provider sector continued to be very active in healthcare, accounting for 159 of the 313 healthcare PE deals done in 2019, with activity consistent with 2018. While deals in North America rose and Europe remained flat, the Asia-Pacific region returned to levels in line with historical norms following a spike in 2018.

North America still accounts for most of the provider deal activity. Eight of the top 10 deals took place in the region, led by the \$4.2 billion investment in Press Ganey.

In Europe, providers contend with limits on scaling due to the disparate healthcare systems and different languages across borders. European provider deals focused mainly on retail health companies that have limited reimbursement risk, and increasingly on HCIT. Many assets continued to execute buy-and-build strategies with add-ons to establish scale before being traded in the coming years.

Although deal volume dipped in Asia-Pacific, investors continued to focus on executing buy-and-build strategies to develop hospital and services platforms in fragmented markets. These private-sector solutions address issues of patient access and affordability across the region. For example, medical e-commerce and e-health business JD Health raised \$1 billion from a consortium of buyout funds, including CITIC Private Equity Funds Management, CICC Capital Management and Baring Private Equity Asia, in order to develop its data and technology capabilities.

Three major investment themes stood out during the year globally:

1. a continued focus on lower-cost and consumer-focused sites of care;
2. the expanding role of the provider in a value-based world; and
3. the enabling of physicians to focus on care delivery.

1. A continued focus on lower-cost and consumer-focused sites of care

The ongoing shift to sites of care that deliver a better or lower-cost patient experience has created opportunities to build scale businesses in traditionally fragmented provider landscapes. In addition, some subsectors such as behavioral health have tailwinds from growing awareness and coverage. Retail health, behavioral health and home/hospice care all attracted interest.

Retail health. Investors continue to put capital into retail health and its derivative plays. Historically, the investment thesis relied on consolidation, multiple arbitrage and limited exposure to reimbursement risk.

Today, many of the assets have reached scale, so value must also come from increasing same-store sales and trimming costs. Given the high valuations for retail health assets, investors will need to do thorough due diligence and have a clear, multipronged value creation plan beyond consolidation.

For example, JAB Holding acquired National Veterinary Associates, a veterinary clinic chain. Goldman Sachs Capital Partners acquired Capital Vision Services, which runs the MyEyeDr. optometrist chain, one of the largest transactions ever in vision care at \$2.7 billion. And Advent acquired Vitaldent, the Spanish dental chain leader, which signals that opportunities still exist in the well-known dental space.

Behavioral health. Investors continued to embrace a wide range of behavioral health companies in mental health, substance abuse, eating disorders and autism/applied behavior analysis. The broader segment is benefiting from underlying trends including greater awareness of mental health and substance abuse issues, destigmatization of treatment, supply shortages and a favorable regulatory environment.

Autism is one of the hottest markets within behavior health. It's fragmented and undersupplied, with coverage tailwinds in certain geographies. That presents an opportunity for autism platforms to rapidly expand, professionalize the industry and create benefits of scale in recruiting and training, payer relationships and systems to support the patients and staff.

For example, TPG Capital formed Radiant Inc., a behavioral health platform focusing on autism. A number of platforms acquired in previous years have been executing add-on investments to expand their footprints, as illustrated by KKR-backed BlueSprig Pediatrics' acquisition of Thrive Autism Solutions.

Home/hospice care. Home-based care models continue to gain share given patient preferences and the cost advantages. Models are long established and will benefit from long-term volume trends and

consolidation opportunities. Investors are taking advantage of this trend. For example, in Germany, Advent acquired Bonitas Medical Fund, a home healthcare services provider. Additionally, Medicare Advantage in the US also creates more opportunities to shift toward the home.

While reimbursement risk remains an overhang, the longer-term shifts around site of care and the fragmentation in these spaces continue to provide opportunities for investors. Since the success of such assets also tends to be tightly linked to the strength of their operational ground game, gaining a deep understanding of operations during diligence is critical.

Investors have again turned to creative investment theses and structures that involve both vertical integration and horizontal capability expansion—all in the pursuit of enabling better management of patient outcomes and financial risk.

2. The expanding role of the provider in a value-based world

Some investors are expanding the role of a provider by positioning the organization to assume risk in a value-based care environment. They have again turned to creative investment theses and structures that involve both vertical integration and horizontal capability expansion—all in the pursuit of enabling better management of patient outcomes and financial risk.

Consider vertical integration first. “Payviders”, organizations that blur the lines between payer and provider, continue to be an emerging segment of the market, as evidenced by Optum’s acquisition of DaVita Medical Group. For investors, this could signal more competition for assets, or opportunities for creative partnerships with payers.

In a variant of this theme, TPG made an investment in Kelsey-Seybold Medical Group, a multispecialty group that owns a Medicare Advantage plan.

Investors also are looking horizontally for complementary provider-focused assets. Warburg Pincus merged Summit Medical Group, an independent multispecialty group, with CityMD, an urgent care provider. With a complementary geographic footprint and an ability to increase access to Summit’s patients and divert emergency department visits with CityMD’s footprint, the merged company is positioning itself for a fee-for-value environment.

In the gravitational pull of value-based care, investors look for assets that can be successful in a fee-for-service world, yet have the capabilities to enable them to manage risk in a value-based world as well.

3. Enabling physicians to focus on care delivery

As regulatory and administrative burdens mount for providers, investors are pursuing themes that seek to alleviate the situation, including next-generation physician practice management (PPM), HCIT and outsourced services.

Next-generation physician practice management. The PPM segment has historically been active as physicians prioritize clinical care over administration and recognize the benefits of scale from being part of a larger organization. The first wave of PPM investment focused mainly on in-hospital cost centers such as anesthesia and emergency departments. However, investors now are setting their sights on emerging segments such as radiology, gastrointestinal (GI), ophthalmology and dermatology.

Radiology is an attractive category given the long runway for consolidation and the growing benefits of scale for both groups and imaging centers, especially with the promise of artificial intelligence and other advanced technologies. US Radiology Specialists, a provider group founded by Charlotte Radiology and Welsh, Carson, Anderson & Stowe, added a range of assets to its platform, including American Health Imaging, an Atlanta-based radiology practice group, and Radiology Ltd., an Arizona-based radiology practice. Radiology Partners also received a \$700 million investment from Starr Investment Holdings, bringing up its valuation to more than \$4 billion.

Platform building within GI also was active through 2019. Waud Capital Partners-backed GI Alliance made nine acquisitions and partnerships over the course of 2019.

Capitalizing on provider organizations being squeezed on profit margins and mired in administrative and regulatory burdens, HCIT companies are finding ways to make their life easier.

HCIT. Capitalizing on provider organizations being squeezed on profit margins and mired in administrative and regulatory burdens, HCIT companies are finding ways to make their life easier. Provider HCIT activity increased slightly from 35 deals in 2018 to 36 deals in 2019, with total disclosed deal value rising from \$8.2 billion to \$10.1 billion.

Revenue cycle management and payments investments continued to be attractive as providers looked for solutions to reduce denials, maximize revenue and get paid faster. The increasing share of patient payments creates even further complexity.

As discussed further in the HCIT section, Golden Gate Capital bought Ensemble, an RCM provider.

Outsourced services. Beyond IT-related plays, investors showed interest in a range of possible outsourced services to providers spanning clinical, financial, operational and administrative areas. For example, FFL Partners sold Crisis Prevention Institute, a provider of crisis prevention and behavior management training programs, to Wendel for \$590 million. Igenomix, a provider of fertility laboratory services, was acquired by EQT for \$450 million.

Asset quality matters more than ever

Over the next few years, investors in the provider sector have an opportunity to simultaneously bend the healthcare cost curve, create better outcomes for patients and improve the performance of their assets. They will also need to monitor a few trends in this dynamic sector:

- patients gaining more skin in the game;
- a continued shift to fee-for-value reimbursement models;
- continued consolidation; and
- inefficiencies in the current healthcare model.

In the near future, we expect interest to focus on alternate sites of care, behavioral health, post-acute and emergent PPM segments. Derivative plays on these segments, such as HCIT assets selling into these attractive end markets, will also be appealing.

Investors will push the envelope on developing capabilities of their provider assets, in order to position them to take on risk in a value-based world. Given the high multiples for scale assets, more investors may pursue a buy-and-build approach.

In general, we expect deal theses to rely more on go-to-market and operational improvements as well as market due diligence. Information on clinician variation, quality of patient care, clinician recruiting and retention, variation in site and practice performance over time, and management of referral sources have become critical during diligence.

Given high multiples and the scale of some of the assets, winning requires more than just participating in a growing market; sponsors will have to pull on every performance lever. They need to rev up the dual engine of differentiated same-store sales growth and differentiated M&A, fueled by a best-in-class playbook. In addition, at least in Europe, we also expect expansion into new verticals (physio, aesthetics, vision care) that have had limited participation by PE to date, as investors try to replicate successes they've seen in dentistry, pet care and IVF.

Payer and related services: Scarce assets and stiff competition from corporates

Section highlights

- While the payer and related services sector continued to attract PE investment, there was a limited pool of assets available for sale.
- Disclosed deal value posted its highest level since 2016 at \$3.6 billion, driven largely by the Zelis Healthcare and RedCard Systems investments. Disclosed values vary from year to year because only a few large assets traded. Deal count came in at 10 in 2019, in line with the 11 in 2018.
- Four themes accounted for most deals: financing flows and payments; businesses that support Medicare Advantage; businesses that make employer self-funded plans more cost effective; and businesses that realign the value chain.

Payer and related services reached \$3.6 billion of disclosed deal value in 2019, the highest level since 2016 as deal activity remained flat. The scarcity of payer assets has led to high multiples, particularly for gem and scale assets that are able to create network effects. In addition, there is strong competition from corporate acquirers that can pay a premium thanks to synergies with existing businesses. For example, UnitedHealth's Optum unit purchased Equian, a provider of payment integrity.

A couple of structural factors make payer and related services an attractive space for private equity investors. Aging populations along with a rising incidence of chronic disease drive growth in Medicare Advantage and raise spending on healthcare. And advances in data analytics create new opportunities for innovation.

We saw four major investment themes across the sector:

1. financing flows and payments;
2. support for Medicare Advantage;
3. cost reduction for employers' self-funded plans; and
4. value chain realignment and build-out of services businesses.

1. Untangling complexity in financing flows and payments

Payments is a virtual glue binding together payers, providers, members and employers. However, patient out-of-pocket expenses are rising, and various aspects of the payment ecosystem and network benefits suffer from complexity.

Moreover, in many cases, providers have little incentive to go through the trouble of setting up an automated clearinghouse for a new or infrequently used payer. Other methods of payment delivery, such as virtual cards or payment checks, may add more cost or complexity to some providers.

Payers thus want to streamline their relationships as well as create ancillary revenue streams where possible.

Various technologies have improved to the point where they have begun to help tame the complexity, drawing the interest of investors. Among the prominent deals in this space, Bain Capital acquired stakes in Zelis Healthcare and RedCard Systems, which offer tools to help payers manage out-of-network expenses, claims communication and payment solutions.

Investors have identified opportunities in businesses that support Medicare Advantage across the value chain, including member recruitment and enrollment, network development and management, care and utilization management, and risk assessment and analytics management.

2. Supporting Medicare Advantage

Medicare Advantage has grown to serve about one-third of all Medicare beneficiaries in the US. Investors have identified opportunities in businesses that support Medicare Advantage across the value chain, including member recruitment and enrollment, network development and management, care and utilization management, and risk assessment and analytics management.

Consider TPG Capital's purchase of Convey Health Solutions. Convey offers administrative software solutions for government-sponsored health plans and administration of supplemental benefits for Medicare Advantage plans. Convey's business benefits from the growth of Medicare Advantage.

3. Reducing costs for employers' self-funded benefit plans

Costs for employer-sponsored healthcare coverage continue to rise, leading more small and midsize employers to choose self-funded plans as a way to manage their costs. Companies are offering solutions aiming to make self-funded plans more cost-effective and feasible for smaller employers.

One deal addressing these needs was Great Hill Partners' recapitalization of Pareto Health, an employee benefit group captive manager that helps self-funded employers pool risk to create portfolio smoothing and reduce stop-loss costs.

Realignment of the payer value chain can create opportunities for investors. While corporates sometimes stand as direct competitors to PE bidders here, they also offer a clear exit path and can serve as coinvestors.

4. Realigning the value chain and building out service businesses

In 2019, health plans continued to vertically integrate and build out services businesses in order to seek differentiation and new levers for growth. Key examples include Anthem's acquisition of Beacon Health Options, a behavioral health management company, and Humana's announced acquisition of Enclara Healthcare, a hospice pharmacy and benefits manager.

Realignment of the payer value chain can create opportunities for investors. While corporates sometimes stand as direct competitors to PE bidders here, they also offer a clear exit path and can serve as coinvestors.

The current environment is likely to persist—with some chance of disruption

Interest for payer-related assets should remain high, but the scarcity of assets and intense competition from corporates will probably continue to restrain deal activity.

We expect continued investment in assets on both the revenue side, especially Medicare Advantage and payments, and cost-side services assets. Fee-for-value payment models will continue to gain traction, albeit at different speeds in different parts of the US. This could open new investing opportunities. While the US election in November remains a wild card, given the complexity of enacting a major overhaul it is possible that the landscape remains much the same in the near term.

Biopharma and related services: With services, HCIT, consumer branding and emerging therapies, there's something for everyone

Section highlights

- Disclosed deal values surpassed previous highs to reach \$40.7 billion in 2019, with the Nestlé Skin Health acquisition composing about 25% of the total.
- Biopharma buyout activity was slightly up, to 85 deals in 2019 from 79 in 2018.
- Products, services and HCIT supporting R&D and commercialization efforts of drug-makers continued to attract the highest interest, but early-stage technology investment also grew.
- Within services, clinical contract research organizations and contract development and manufacturing organizations were hot, as well as other emerging or niche service lines such as cell and gene therapy, institutional review boards and commercialization.

Both private equity and corporate buyers showed strong interest in biopharma throughout 2019. PE investors like the attractive absolute returns, while corporates leverage M&A to supplement their own portfolios with new assets and capabilities.

Their enthusiasm registers despite the political and regulatory uncertainties across the globe that could affect drug pricing. In early 2020, pharma companies continue to take price on their branded products in the US (in line with 2019 rises), implying limited pressure on price, at least before the presidential and congressional election in November.

Deal volume increased slightly to 85 deals in 2019, compared with 79 in 2018, but total disclosed value more than doubled from \$16.5 billion to a record high \$40.7 billion. The largest deal of the year in healthcare, EQT and ADIA's \$10.1 billion carve-out acquisition of Nestlé Skin Health's business, accounted for about 25% of the value. Overall, the attractive growth profile of the sector and intense competition for deals drove valuations to record levels.

Corporate interest in biopharma services may heighten competition, but it also offers PE sponsors a route to exit at the end of the holding period as corporate buyers have shown a propensity to make large investments. 2019 saw striking examples of this in the gene therapy CDMO space: Thermo Fisher Scientific bought Brammer Bio from Ampersand Capital Partners for \$1.7 billion, and Catalent acquired Paragon Biosciences from Camden Partners and NewSpring Capital for \$1.2 billion. *PE Hub* reported that the sellers achieved a 31 times multiple on invested capital (MOIC) on the Paragon sale.

Brisk activity worldwide

From a regional standpoint, investment activity split fairly evenly during the year. North America accounted for 36% of deal activity and 42% of disclosed deal value, and Europe represented 28% of activity and 41% of deal value, largely driven by the Nestlé Skin Health acquisition.

Investors in Europe have become more sophisticated over the years. They started with healthcare-light assets, then expanded to over-the-counter and mature drugs. Recently, they expanded into healthcare-heavy territory, addressing the full reimbursement and cost containment risks. The most sophisticated investors have worked in specialized areas requiring deeper experience to articulate a relevant thesis and develop the assets.

The most sophisticated European investors have worked in specialized areas requiring deeper experience to articulate a relevant thesis and develop the assets.

At the same time, branded generic platforms have continued to be attractive for PE investors, though investments in STADA Arzneimittel, Zentiva and Recordati have raised the bar for new PE investors to invest in European generics as these three platforms (and other similar ones, such as Karo Pharma in Scandinavia) can offer higher valuations to sellers. For the next round, investors must bring more money or more sophistication, or both.

In the Asia-Pacific region, biopharma continued its long-term growth trajectory. The region accounted for 33% of deal volume in 2019 and 16% of value. Most of the capital fed smaller, early-stage companies. As with other healthcare sectors in the region, biopharma assets appeal to investors due to the positive underlying macro fundamentals, including rising incomes and aging populations. In fact, the region's largest deal of the year was Centurium Capital's \$1.9 billion take-private offer for the remainder of China Biologic Products Holdings, a Chinese plasma collection network and fractionator.

Biopharma held steady in China, where the government is pushing hard to reduce the country's dependence on multinational corporations for prescription medications through its bulk-buying program. Such regulatory shifts have opened the door for Chinese pharma companies to win large hospital and other supplier contracts. As the effects of regulation settle and near-term uncertainty clears, deal activity should increase.

Across the regions, four major investment themes emerged or progressed during the year:

1. branded consumer pharmaceuticals, in areas with limited pricing pressure and defensible niches;

2. biopharma services such as contract research organizations (CROs) and contract development and manufacturing organizations (CDMOs), including newer areas such as cell and gene therapy and commercialization services;
3. HCIT that improves efficiency of pharma companies across the value chain, with a specific focus on drug development; and
4. broader life science investments, including earlier stage investments carrying clinical and technical risk.

1. Branded consumer pharmaceuticals

PE interest in branded biopharmaceuticals remained strong in areas with low R&D risk. Investors sought areas with limited pricing pressures and defensible niches in therapeutic areas such as dermatology, ophthalmology, central nervous system and in vitro fertilization, as well as in countries where branding still has clout. This was doubly true for consumer-heavy therapeutic areas such as aesthetics and skin care, due to the lower exposure to pricing pressure. These assets also require less R&D spending, have fewer regulatory complexities than patented drugs, face less competitive pressure and involve more consumer branding, which is easier to execute during the holding period.

Investors sought areas with limited pricing pressures and defensible niches in therapeutic areas such as dermatology, ophthalmology, central nervous system and in vitro fertilization, as well as in countries where branding still has clout.

The largest healthcare deal of the year came in dermatology as EQT and ADIA acquired Galderma, the business unit formerly known as Nestlé Skin Health, which produces branded dermatology drugs and products, for \$10.1 billion. The deal was premised on the strong underlying growth of the aesthetics business in many countries (as demonstrated by market leader Allergan), a promising dermatology portfolio, the relative ease to carve out the asset, and room to improve performance.

2. Biopharma services

Investors continued their keen interest in services, with 51% of deals and 55% of deal values in biopharma going to services and HCIT. This is due to the ability to participate without significant clinical or end-market pricing risk, and capitalize on the trend of biopharma companies continuing to outsource noncore activities as well as pursuing efficiency and cost improvements.

CMOs and CROs continued to garner high interest and accounted for 32% of biopharma deals during 2019. For example, Permira acquired Cambrex Corporation, a small molecule CDMO, for \$2.4 billion. Permira also bought Quotient Sciences, a provider of contract research and drug development services.

The cell and gene therapy market continues to ride high, including the approval of Zolgensma to treat spinal muscular atrophy in 2019, and makes up roughly 10% of pharma's late stage pipelines. This technology requires different R&D, manufacturing and commercialization models from traditional biopharma. In 2019, the cell and gene therapy CDMO market drew significant capital from PE sponsors and corporates. EQT bought Aldevron, a producer of plasmids. Thermo Fisher purchased Brammer Bio for \$1.7 billion and Catalent purchased Paragon Bioservices.

In addition, there was significant interest in other pharma services offerings across the value chain, including institutional review boards (IRBs), regulatory affairs and commercialization services such as medical affairs, pricing, hub services and market access. The niche IRB market drew particular interest last year, with the sale of two leading competitors, WIRB-Copernicus Group and Advarra.

There was significant interest in other pharma services offerings across the value chain, including institutional review boards, regulatory affairs and commercialization services such as medical affairs, pricing, hub services and market access.

Commercialization services gained ground as products narrow to fit a niche and a generic approach to commercialization no longer works. Smaller pharma firms often lack in-house commercialization capabilities and must look for help outside across a variety of services lines.

For instance, Publicis Healthcare Solutions, specializing in remote engagement, field outsource solutions, and clinical and medical solutions, was acquired by Altamont Capital Partners and renamed Amplity Health. EVERSANA, backed by Water Street, continued to build out its rare disease platform and acquired Cornerstone Research Group, a provider of HEOR services, Alamo, a provider of field sales, marketing and clinical solutions for biopharma, and BexR Logistix Telesales, a third-party logistics company.

3. HCIT that supports drug development through commercialization

HCIT drew interest as well, especially for assets that support drugmakers in developing, manufacturing and commercializing new therapies. Drug development is expensive and subject to pricing pressure, so pharma companies are trying to improve both speed to market and cost. Data analytics can help

support clinical trials as well as use virtual trials to replace or enhance traditional clinical trials. For example, Water Street Healthcare Partners and JLL Partners acquired THREAD Research, a provider of virtual research technology.

4. Early-stage life sciences technologies

Early-stage life science investing fits a set of buyout funds that have an appetite for development and technology risk and possess specific capabilities to source and evaluate opportunities. This continued to be an investment theme in 2019 as specific funds put capital to work in this segment.

Bain Capital raised \$900 million for its second fund dedicated to life sciences. Silverlake put \$1 billion into Verily Life Sciences, the Alphabet subsidiary, which is a life sciences technology company focused on partnerships with pharma, life sciences and medtech companies. KKR co-led investment in BridgeBio Pharma's latest private funding round in January, before its June IPO.

Investors also showed greater interest in tools that support life sciences. For example, GTCR invested in Cole-Parmer, a specialty lab equipment provider, two years after selling the company to Golden Gate.

How to win despite high valuations

We expect the biopharma sector to maintain its appeal for investors. As an indicator of broader demand, venture-capital investments in therapeutics remain strong, albeit deals skew to smaller and more risky, earlier-stage bets. There are multiple hunting grounds for investment opportunities across the value chain, but a few specific areas of interest may offer high value for investors in the coming year.

Services and HCIT across the value chain will remain the most fruitful territory, and pricing pressure will amplify the need for efficient drug development and commercial effectiveness. This territory includes niches that provide opportunities for building platforms that address specific customer needs (smaller biopharma) or therapeutic area expertise (oncology or rare disease). Pharma has pain points along its value chain, for example in site and patient recruitment, where newer services and HCIT offerings could improve efficiency.

In addition, pharma's development model is using more real-world data and evidence, and pharma needs help with generating and prosecuting that data and evidence for such activities as virtual trials and lead optimization.

Branded pharma in particular will attract investors. Besides the existing niches for private equity, this may expand to include areas that have less interest to corporates, such as anti-infective therapies where the commercial business model needs an overhaul. Generics may start to provide an attractive counter-cyclical investment strategy; while they have not been an active investment area in the US recently, there are signs that the big price declines of recent years are abating and that the industry's structure will stabilize.

Medtech and related services: Corporates roll, but plenty of opportunities remain attractive for PE funds

Section highlights

- Although deal count and value declined in 2019, the medtech sector tends to fluctuate, so any single year's tally does not necessarily indicate a larger trend.
- Corporates have a few structural advantages in medtech, and share of total acquisitions has been growing.
- Opportunities typically exist in niche, fragmented spaces with a path to category leadership, businesses providing an outsourced service to medtech manufacturers and consumer medtech.
- New or expanded regulations could impose greater costs and complexity on device makers over the next few years in Europe.

Investment in the medtech sector tends to fluctuate, so any single year's tally does not necessarily indicate a larger trend. With that caution, a look back shows that medtech deal count dipped to 59 deals in 2019, following a record 67 deals in 2018.

Total disclosed deal value also dropped to \$4.3 billion in 2019 compared with \$10.5 billion in 2018, as private equity funds executed fewer deals greater than \$1 billion. The year 2018 saw Platinum Equity acquire LifeScan for \$2.1 billion along with four other deals worth between \$1 billion and \$2 billion.

From a regional perspective, most deals occurred outside North America. More local and regional incumbents in Europe and Asia-Pacific have attained scale and now attract interest, especially in the contract development and manufacturing spaces.

Corporates continued to make substantial investments in available assets during the year. Medtech direct investments can be capital intensive and require extensive manufacturing expertise compared with the service-based businesses that typically attract buyout funds. Corporates can underwrite higher values for medtech targets close to their core, often have deep expertise, and can extract value through scaling and improving sales and manufacturing operations as they fortify category leadership positions.

For example, Stryker announced an agreement to acquire Wright Medical Group, a medical device company focused on manufacturing and distributing extremities and biologics devices, valuing Wright at \$5.4 billion, or six times the previous year's sales. Johnson & Johnson acquired Auris Health,

a developer of surgical robots, for \$3.4 billion with additional contingent payments of up to \$2.35 billion upon reaching certain milestones. Owning a standalone robotics company may not be as valuable to PE investors as it is for a corporate that can leverage the robotics platform to sell its broader device portfolio and offer a surgical system with both robotic surgery and medical implants.

Many segments are riding favorable volume and demographic trends, and face manageable pricing pressure.

Three investment themes lead the way

Despite strong corporate interest, medtech also continues to attract significant interest among PE investors. Many segments are riding favorable volume and demographic trends, and face manageable pricing pressure. Even lower-tech products can provide attractive economics through a consumable goods, razor-and-blades model. The sector provides relative stability and strong margins with mature categories, a competitive landscape and fairly sticky products dampening the chance of large-scale share shifts.

Three investment themes dominated medtech during the year:

1. derivative services and IT plays;
2. pursuit of category leadership; and
3. consumer medtech and overlooked medtech categories.

1. Riding the trends through derivative services and IT plays

PE investors have been gravitating to the services segments that are not core capabilities for medtech companies, reflected by services making up 17% of medtech deals during the year. Service-centered segments don't bear the reimbursement risk of healthcare-heavy assets. Indeed, healthcare-heavy medtech deals dropped from two-thirds to half of all deals in the sector, partly out of concerns over reimbursement changes, particularly in the US. The service investments allow sponsors to benefit from underlying fundamentals of the sector as well as the tailwinds of outsourcing trends as manufacturers continue to look for ways to cut cost amid price pressures.

Biopharma derivative plays provide a precedent, although medtech has primarily focused on outsourcing manufacturing, with less interest in outsourcing salesforce, development or clinical trial functions. (Most medtech regulatory approvals come through the 501(k) process, which is more lenient than the process for biopharma.)

Nordic Capital, for instance, bought Orchid Orthopedics Solutions, a medical device outsourcing service that does contract design and manufacturing, for roughly \$1 billion. Nordic cited strong growth in the medical device market as well as Orchid's ability to make its medical device manufacturer customers more competitive.

As corporates look to rationalize their portfolios to attain category leadership or to implement regulatory mandated divestitures, investors have an opening to opportunistically carve out assets.

2. Pursuit of category leadership

As corporates look to rationalize their portfolios to attain category leadership or to implement regulatory mandated divestitures, investors have an opening to opportunistically carve out assets.

For example, Hillrom, a publicly listed US provider of medical technologies and related services, sold Aspen Surgical Products, a manufacturer of disposable medical products for operating rooms, to Audax Group for \$170 million. Furthermore, as consumer medtech achieves substantial scale, PE sponsors could potentially capitalize as well, demonstrated by the \$1.3 billion IPO of SmileDirectClub, an affordable direct-to-consumer teeth-straightening service.

Category leaders in small segments also merit capital from PE investors. Properly defining subsegments within medtech can uncover hidden category leaders. For example, Eurazeo Capital acquired DORC Dutch Ophthalmic Research Center, one of the few independent manufacturers of ophthalmic surgery instruments and equipment, for about \$340 million. Another example was EQT's investment in Clinical Innovations, a market-leading medical device company targeting labor and delivery and neonatal intensive care; EQT exited Clinical Innovations after only two years for a deal value of \$525 million.

3. Consumer medtech and overlooked medtech categories

PE investors also play in specific categories that have a consumer focus or have been overlooked by broader medtech portfolios, often due to fewer sales-call point synergies. One such deal was Clayton Dubilier & Rice's carve-out of Cynosure, a company that manufactures medical aesthetic treatment systems for a variety of healthcare practitioners, from Hologic. Cynosure's aesthetics business had little call point overlap with Hologic's women's health products, making it logical to carve out of the business.

Regardless of investment theme, medtech investors have several routes to reap good returns. One is to consolidate smaller firms within fragmented categories in order to create a category leader. Another is to implement commercial excellence or cost-reduction programs, as owners of assets have historically

have been less of a strategic focus for their corporate parents. For capital-intensive purchases, owners will need to lean in more on operations, but they do have a viable playbook for creating value.

How expanded regulations could play out

The year saw government agencies clarify many regulations on the books, which made investors more comfortable in underwriting assets. China and India implemented new medical device regulations in 2017, which established more structured systems. Despite this greater clarity, medtech in Asia-Pacific fell to 10 deals in 2019, compared with 18 in 2018.

In Europe, deal count remained steady at 24 in 2019, compared with 23 in 2018. The Medical Devices Regulation (MDR) and In Vitro Diagnostic Medical Devices Regulation (IVDR) increased transparency for investors in the region. MDR comes into force in May 2020. IVDR comes into force in May 2022. Legacy devices must comply with new standards at the latest by 2025.

The implications for manufacturers include higher operating costs over the next few years due to investments in data generation and regulatory advisory, the risk of products being taken off the market due to a backlog of applications, and potentially more complexity in executing clinical trials.

A wealth of favorable trends for the near future

Looking out the next few years, we expect investors will continue to ride the high profit margins and recession-resistant nature of the sector as well as favorable volume and demographic trends:

- positive demographics, especially in certain subsegments such as orthopedics;
- manageable pricing pressure, more from the sophistication of provider procurement than from government intervention;
- mature categories and sticky products;
- potential for consolidation within categories;
- attractive economics from a razor-and-blades consumable goods model for many lower-tech products;
- large cost-take-out opportunities for undermanaged companies;
- potential for corporate exits; and
- less regulatory risk in the US compared with sectors such as provider.

Corporates will present stiff competition for assets, so PE investors probably will focus more on efficiency plays with contract manufacturing organizations and other firms that improve operations through digital and IT solutions. Going forward we expect investors to continue to focus on derivative plays and healthcare-light assets.

Healthcare IT: A surge of innovation attracts new investors

Section highlights

- Intense competition for HCIT deals kept valuations high in 2019. A surge of innovation has attracted a wide range of investors, including corporates and buyout firms that have less history with healthcare.
- Total disclosed value surged to a record \$17.5 billion compared with \$8.6 billion in 2018. Value was pushed up by the two biggest deals of the year—Press Ganey and Waystar—which accounted for about 40% of disclosed value.
- Some 51 deals closed in 2019, roughly in line with the 48 completed in 2018.
- We saw five themes play out over the year: derivative plays on high-growth sectors; financing fund flows; managing costs of self-funded employer plans; using digital technologies to improve patient outcomes; and data businesses

A decade ago, much of HCIT activity focused on adoption of electronic medical record (EMR) solutions. Today, the field has advanced to a wide array of solutions helping companies reduce costs and improve outcomes across a range of subsectors. This recent surge of innovation has prompted a wide range of investors, from traditional healthcare and technology buyout firms to corporates, to chase HCIT assets in 2019.

HCIT has advanced to a wide array of solutions helping companies reduce costs and improve outcomes across a range of subsectors.

Deal activity held steady at 51 announced deals, matching the record 48 deals in 2018. Most came in the provider sector. Disclosed deal value surged to a record \$17.5 billion, up from \$8.6 billion in 2018.

The two largest deals of the year accounted for \$6.9 billion, or about 40% of total value. Leonard Green and Ares Management led a consortium's acquisition of Press Ganey; and EQT and CPPIB bought Waystar, with each target company offering a different value proposition.

Many funds with less healthcare experience joined the hunt, especially those that have historically focused predominantly on technology investments, such as Golden Gate Capital.

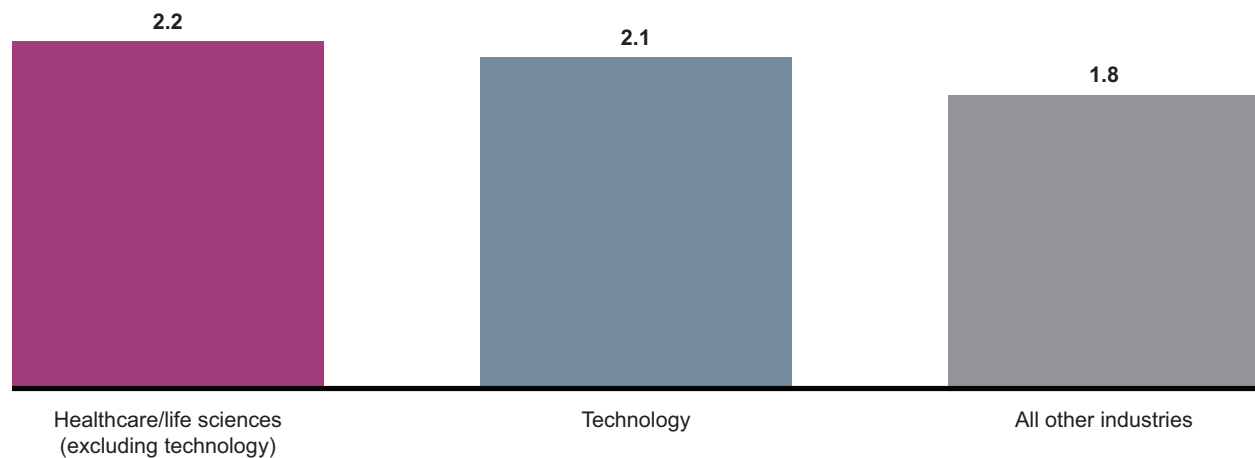
Healthcare private equity enthusiasm stems in part from the fact that healthcare and technology investments both outperformed the average return of other sectors (*for investments made between 2009 and 2016, see Figure 7*).

We saw five distinct investment themes play out during the year:

1. derivative plays on high-growth sectors, such as efficiency in pharma trials or alternative site EMR;
2. financing flows such as payments, payment integrity, out-of-network expense management and revenue cycle management (RCM);
3. managing costs of self-funded employer plans;
4. using digital technologies to improve patient outcomes; and
5. data businesses.

Figure 7: The healthcare and technology sectors each outperformed the average return of other industries

Gross pooled multiple on invested capital (2009–16)



Sources: CEPRES; Bain analysis

Let's look at each in turn.

1. Derivative plays on high-growth sectors

HCIT assets serving high-growth segments attracted a lot of attention. Derivative plays allow funds to invest in the more fragmented HCIT sector while enjoying the benefits of the strong fundamentals of segments such as pharmaceutical trials management and alternative site providers.

Complexity in therapies and regulatory requirements has put pressure on biopharma companies to run trials efficiently and without errors. Investors warmed to HCIT assets that enable more cost-effective clinical trials. Such assets can fetch multiples on par with software as a service if the underlying technology is proprietary.

Derivative plays allow funds to invest in the more fragmented HCIT sector while enjoying the benefits of the strong fundamentals of segments such as pharmaceutical trials management and alternative site providers.

For example, a consortium led by Astorg Partners and Nordic Capital invested in ERT, a hybrid HCIT and pharma services company, in the largest biopharma-focused HCIT acquisition of the year. Nordic Capital bought ArisGlobal, a healthcare software firm that helps clients improve efficiency and assure compliance during drug development and commercialization.

The EMR market for acute care providers has already consolidated to a great extent through major companies such as Epic and Cerner. Yet opportunities can still be found in the more fragmented EMR markets for ambulatory surgery centers, behavioral health sites and other specialized providers. These specialty markets have room for winners to emerge.

For example, Warburg Pincus invested in both Qualifacts Systems, maker of EMR software for behavioral health and human services, and WebPT, an EMR provider for outpatient physical therapists, occupational therapists and speech-language pathologists, with the intent of developing category leadership positions.

2. Financing flows

Healthcare billing and payments is notoriously complex and inefficient in the US. That situation creates an opening to improve financing flows in several areas.

Consider payments, the glue binding together payers, providers, patients and employers in the face of several trends: Patient out-of-pocket expenses are rising, network design and benefits get more complex, providers manage against tight financial performance, and payers seek to create and capture value. Integrated payment-processing solutions that connect payers and providers make up much of the market because payer to provider remains the large majority of fund flows.

Other areas of payments are gaining traction, including those serving the growing share of patient-to-provider fund flows and healthcare-specific services for regional payers serving smaller provider bases. JPMorgan Chase paid more than \$500 million to buy InstaMed, which enables patient-to-provider payments and improves provider collections.

Turning to out-of-network cost management and payment integrity, activity has ticked up because payers often are on the hook to help reimburse a large pool of out-of-network expense, and errors frequently occur during billing and payment for claims. Companies providing these services help payers reduce the amount they are obligated to reimburse and reduce errors and overpayment before and after a claim is paid.

This logic led Bain Capital to invest in Zelis Healthcare, whose business includes claims repricing tools and third-party networks to reduce payments on out-of-network bills, and merge it with RedCard Systems. On the corporate side, UnitedHealth Group decided to buy Equian, a payment integrity company, for \$3.2 billion and then merge Equian with its Optum health services arm.

RCM assets also continued to attract investor attention following Veritas's major buyouts of GE Healthcare and athenahealth in 2018. While penetration of core RCM modules in the middle and back-end is high, headroom remains in new modules and front-end solutions such as patient portals, bill estimators and denials management, in RCM services, and in small physician practices. In one notable deal, Golden Gate Capital acquired a majority stake in Ensemble Health Partners, formerly a part of Bon Secours Mercy Health.

3. Managing costs of self-funded employer plans

Costs for employer-sponsored healthcare coverage continue to rise, leading many employers to explore ways to reduce their costs through self-funded plans. Many employers are offering more plan options to their employees including high-deductible health plans and narrower network plans as an alternative to rising premiums on traditional preferred provider organizations (PPOs). They have turned to third-party technology vendors that offer employees tools to navigate their care delivery options in order to receive the right care, reduce their costs and improve outcomes. Employers are also adopting solutions that enable them to pool risk.

For example, Collective Health, a software platform that helps US employers manage health insurance programs, received a \$205 million investment from SoftBank Vision Fund. Multiple sources reported that Great Hill Partners provided a more than \$80 million investment to Pareto, a leading employee

benefit group captive manager that helps businesses self-fund health benefits with greater savings and lower volatility. And Livongo, a chronic condition management company backed by General Catalyst and Kinnevik AB, among others, went public in July.

4. Using digital technologies to improve patient outcomes

US providers are finding it increasingly difficult to deliver high-quality care in part due to changing patient expectations. Patients themselves have become more frustrated with wait times and the quality of care.

In response, health institutions want to monitor and improve patient satisfaction through better outcomes and experiences. We expect to see more investments in technologies that can support those goals, such as the \$4.2 billion acquisition of Press Ganey, the industry leader in patient surveys, by a consortium led by Leonard Green and Ares Management.

5. Data businesses

Activity has picked up around assets that incorporate data as part of their competitive advantage. For example, Advent International acquired Definitive Healthcare Partners, whose core platform incorporates data from a variety of sources and layers in custom data pulls. We expect to see greater demand for companies that focus on monetizing useful healthcare data (see the chapter “Healthcare data moves to center stage”).

Looking ahead, underlying trends favor continued growth for investment in HCIT assets.

In other areas that have been fragmented, such as solutions helping employers contain the cost of care, we expect assets with staying power to gain scale. In payments, not many tradable scale assets remain, but more companies that deal with financing flows could be available.

From a regional perspective, HCIT in Europe should benefit from being one of the few sectors that can cross borders to achieve scale. And in Asia-Pacific, where the supply of healthcare is racing to meet demand, IT will help accelerate progress. In short, there are many investment opportunities in HCIT, but each requires a growth equity mindset.

Venture capital directed to HCIT also has been booming. According to Rock Health, annual venture funding for digital health has grown 80% in the last five years, indicating a healthy pipeline of targets for financial sponsors in the future.

4. Corporate M&A: For public companies, it's all about revenue growth

Section highlights

- Disclosed deal value in 2019 rose about 24% to a new high of \$541 billion, with two megamergers—Celgene and Allergan—totaling \$182 billion. Deal volume grew by 4% to 3,137.
- The bid for category leadership has driven many acquisitions and divestitures, particularly in medtech and biopharma sectors.
- Partnerships of corporates with buyout funds proliferated as a way to combine different capabilities or expertise.
- Public markets are rewarding revenue growth far more than profit margin expansion, which will continue to spur M&A in the near future.

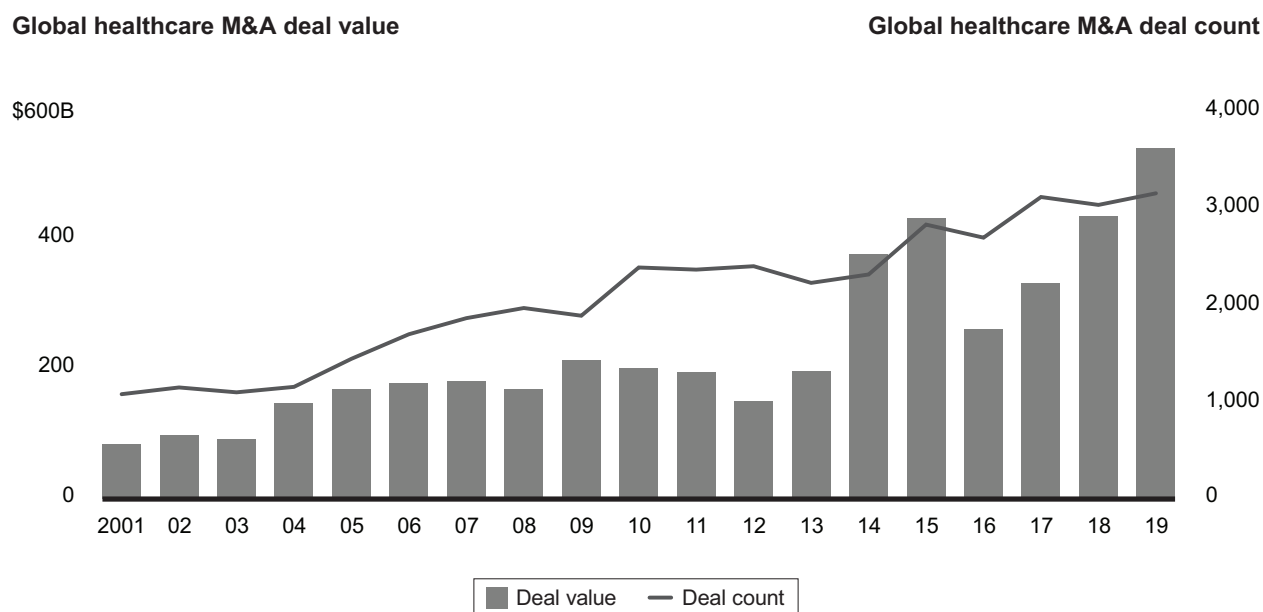
Corporate M&A in healthcare reached an all-time high in 2019, largely due to two megadeals (*see Figures 8 and 9*). Bristol-Myers Squibb acquired Celgene for \$97 billion, and AbbVie bought Allergan for \$85 billion, including net debt. We expect brisk deal activity to continue in the near future as public healthcare companies use acquisitions to grow revenue, which public markets continue to differentially reward relative to profit margin expansion.

Corporates will also continue to explore opportunities at the intersection of healthcare, financial services, technology and consumer markets. For example, JPMorgan Chase acquired InstaMed, a healthcare payments company.

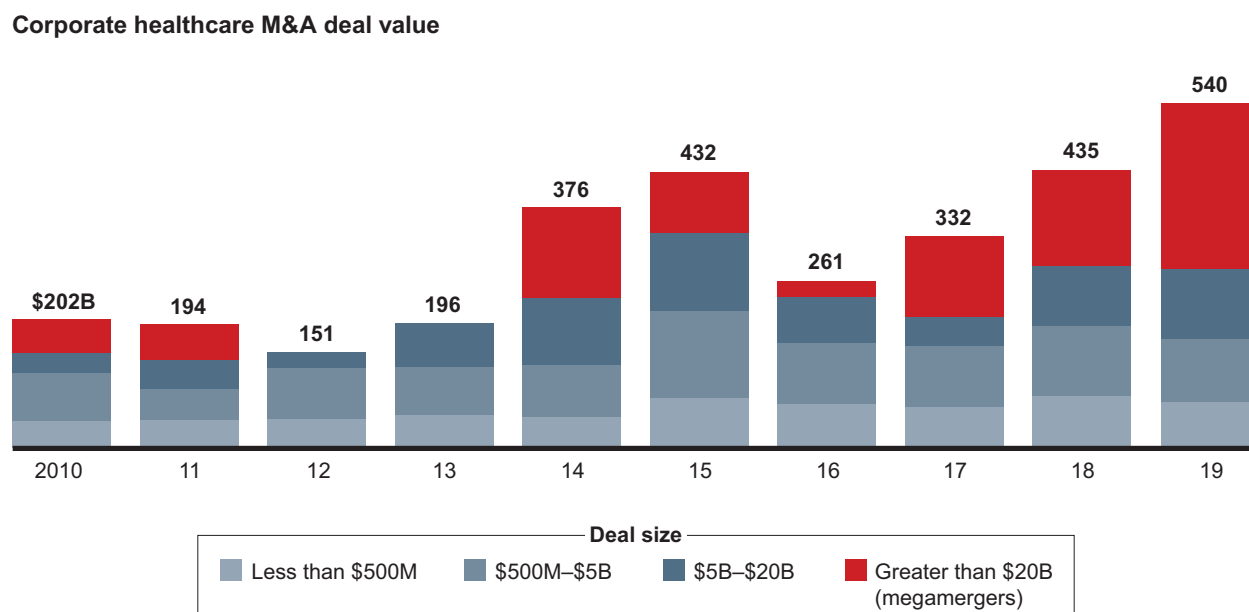
Simultaneously, corporates have been divesting underperforming or noncore businesses and outsourcing noncore activities. Each trend provides PE funds with opportunities to creatively partner with corporates, back smaller companies that ride the outsourcing wave and acquire divested assets. For any company doing M&A, it is essential to develop a well-articulated value creation plan in the current competitive and expensive market.

The largest M&A deals of the year were concentrated in the biopharma and medtech sectors, which saw 9 of the top 10 deals. With biopharma, the two megadeals mentioned earlier allowed the companies to develop more stable future cash flows and mitigate lost sales from upcoming patent expirations.

Global Healthcare Private Equity and Corporate M&A Report 2020

Figure 8: Healthcare corporate M&A disclosed value and volume reached historic highs

Notes: Excludes spin-offs, add-ons, loan-to-own transactions and acquisitions of bankrupt assets; based on announcement date; 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

Figure 9: Megamergers accounted for the record high disclosed deal value

Notes: Excludes spin-offs, add-ons, loan-to-own transactions and acquisitions of bankrupt assets; based on announcement date; 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

AbbVie's acquisition of Allergan delivers strong and stable cash flows from medical aesthetics as the company braces for the expiration of Humira, the top-selling drug in the world but one that will face competition from biosimilars as early as 2023.

Bristol-Myers Squibb's acquisition of Celgene will result in an impressive combined oncology portfolio with nine drugs that have more than \$1 billion in sales. Celgene's late-stage pipeline assets should help offset lost sales from its own blockbuster multiple myeloma drug, Revlimid, which loses patent protection in 2022.

Outside of these two megadeals, M&A theses followed familiar patterns over the past two years.

Biopharma: Smaller assets or new platforms

In biopharma, two traditional approaches prevail as corporate acquirers have looked to improve their R&D pipelines with an eye toward developing their future growth prospects. First, companies bought smaller companies or individual assets within their own areas of expertise, typically following a milestone that results in the asset shedding risk.

Pfizer thus acquired Array BioPharma, which specializes in small molecule drugs targeting cancer, for \$11.4 billion. The deal strengthens Pfizer's category leadership in oncology with breakthrough BRAF/MEK inhibitor combination therapies and potential first-in-class treatments for BRAF-mutant metastatic colorectal cancer.

The second approach involves entirely new technological capabilities or platforms such as cell and gene therapy. For example, Roche bought Spark Therapeutics, which specializes in gene therapies, for \$4.8 billion, to gain access to a gene therapy platform. And Pfizer purchased a 15% stake in Vivet Therapeutics, a French gene therapy company.

Medtech: Enhancing category leadership while keeping an eye on regulatory developments

In medtech, many companies looked to consolidate their market share in areas where they have a path to category leadership, and divest subscale positions where they do not see a path. For example, Stryker's \$5.4 billion acquisition of Wright Medical Group will bring additional scale to Stryker's fast-growing extremities business.

Evolving regulations will warrant scrutiny during due diligence. In Europe, the shift in Medical Devices Regulation (MDR) to make reviews more strenuous will take effect in mid-2020. As acquirers consider medtech companies with significant revenue in Europe, diligence should include plans to address any costs or revenues associated with MDR. While the US Food and Drug Administration (FDA) is unlikely to make any major process changes in the near term, any revisiting of the 510(k) pathway would yield significant consequences for medtech companies, potentially requiring recertification of several on-market devices.

Payer: National companies look to build out their capabilities and noninsurance offerings

After a number of megadeals in 2018, including Aetna/CVS and Cigna/Express Scripts, deal value in payer and related services declined in 2019. However, multibillion-dollar transactions have still occurred as national payers look to build out their breadth of capabilities and noninsurance offerings.

A good example is UnitedHealth Group's \$3.2 billion purchase of Equian, the healthcare payments firm, from New Mountain Capital. UnitedHealth has merged the firm with its Optum business unit to add additional capabilities.

US health insurers also vertically integrated to differentiate themselves and develop new models for growth. Centene acquired WellCare Health, a provider of managed care services, for \$17.3 billion, making it the largest Medicaid managed care company and expanding its Medicaid Advantage business.

Divestitures play to category leadership

With category leadership a favored strategy across sectors for acquisitions, corporates selectively bought regulatory-mandated divestitures, which often stem from category leadership plays. For example, the FTC mandated that Celgene divest its psoriasis treatment, Otezla, as part of the BMS acquisitions, and Amgen acquired Otezla.

We also note that larger companies divested noncore assets with subscale positions in order to focus on higher-return areas. Pfizer is a case in point, with a multiyear effort to rationalize its portfolio as it doubles down on patented drugs in areas such as oncology. Pfizer announced its discussions with Mylan to complete a potential spin-off of its Upjohn business.

Partnerships with PE funds flourish

Partnerships of corporates with buyout funds proliferated during the year, as a way to combine different capabilities or expertise. Welsh, Carson, Anderson & Stowe and Walgreens invested in Shields Health, a specialty pharmacy services provider. Shields cited the advantages of blending Welsh Carson's experience in the healthcare industry with Walgreens' extensive operating experience.

Partnerships extended outside of M&A as well. For example, Walgreens and VillageMD, a venture-capital-backed primary care provider, collaborated to open clinics that integrate primary care services with pharmacy services.

Besides the value of partnerships, corporate interest also represents a potential exit route for private equity funds at the end of the holding period. For example, Apax Partners, CPPIB and PSP sold Acelity, a medical equipment and supplies manufacturer, to 3M for \$6.7 billion in the largest healthcare exit of 2019. Anthem acquired Beacon Health Options, a payer in behavior health, a proof point on the value of investing in a scale platform with scarcity value in the payer space.

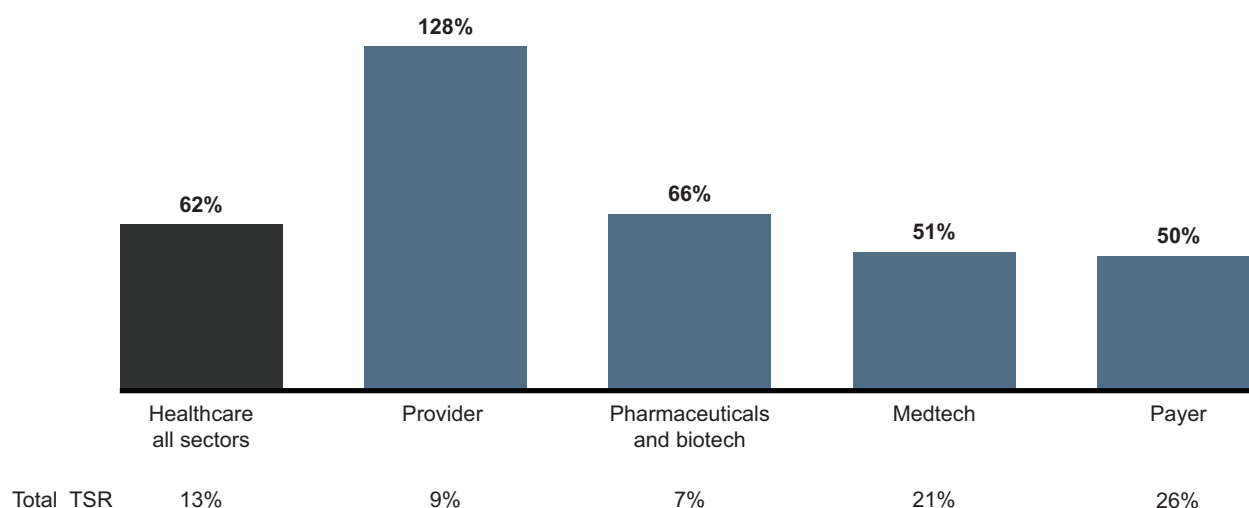
Outlook: Bring on the revenue growth

M&A looks set to continue its importance over the next few years as public healthcare companies strive to grow revenues. When it comes to total shareholder return (TSR), new Bain & Company analysis of CapIQ data shows that revenue growth accounts for about 62% of TSR over the past five years, a far more important factor than profit margin expansion, which accounts for 9% (see Figure 10). Transactions thus will supplement organic growth as companies use all available levers.

M&A looks set to continue its importance over the next few years as public healthcare companies strive to grow revenues.

Figure 10: Revenue growth accounts for about 60% of total shareholder return in public healthcare companies

Percentage of total shareholder return, 2015-2019, driven by revenue growth



Source: Bain analysis of CapIQ data

5. Exit activity: PE funds dominate, but corporates step up to build out their category leadership

Section highlights

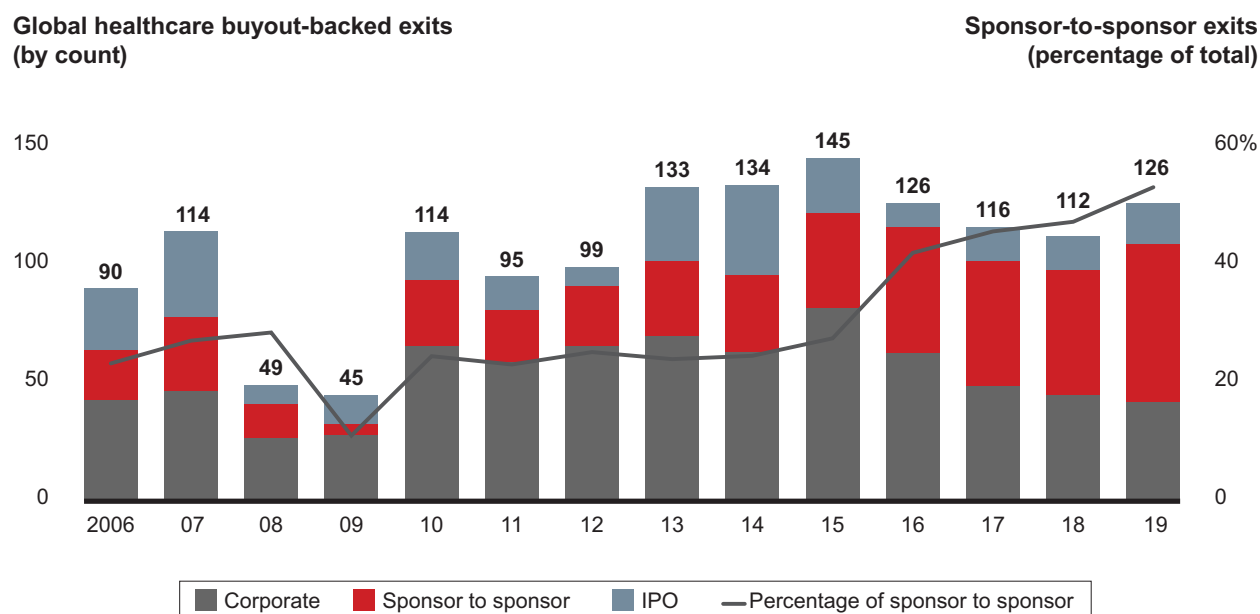
- Global healthcare PE exits rose to 126 in 2019, up from 112 in 2018. Disclosed deal value rose to \$40.8 billion, from \$31.6 billion in 2018, as the value of IPOs increased by 72%.
- The median holding period held steady at 4.3 years, in line with the lowest level since 2009.
- PE funds also made more quick flips and partial exits. The first quartile of holding periods declined from 3.6 years in 2014 to 3.0 years in 2019.
- Sponsor-to-sponsor transactions remained the highest share of exits, representing 53% in 2019.

Tracking historical norms, exit volume and value held relatively steady in 2019, following a spike in activity from 2012 to 2015 (see *Figure 11*). Exit volume rose slightly to 126 in 2019, up from 112 in 2018, while disclosed exit value increased to \$40.8 billion, compared with \$31.6 billion. A 72% increase in IPO exit values vs. 2018 helped drive the increase in exit value as several high-profile assets went public.

Sponsor-to-sponsor exits remained the most prominent channel at around 53% of all exits in 2019, a significant increase from earlier in the decade. This trend stems from the overhang of capital dedicated to healthcare, as well as the industry's strong returns and resilience at any stage of the economic cycle.

The share of corporate deals declined slightly to 33% from 40% in 2018. Corporate buyers were particularly interested in biopharma and medtech, as industry leaders bought smaller companies with novel R&D assets or medical devices.

IPOs, meanwhile, were most common in biopharma, particularly with smaller-stage companies. These companies often come with regulatory approval risk, and the fan of outcomes tends to be too wide for the risk tolerance of PE sponsors.

Figure 11: Exit count rebounded after a few years in decline

Notes: Excludes spin-offs, add-ons, loan-to-own transactions and acquisitions of bankrupt assets; based on announcement date; 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

Flip it quickly, but keep a piece of it

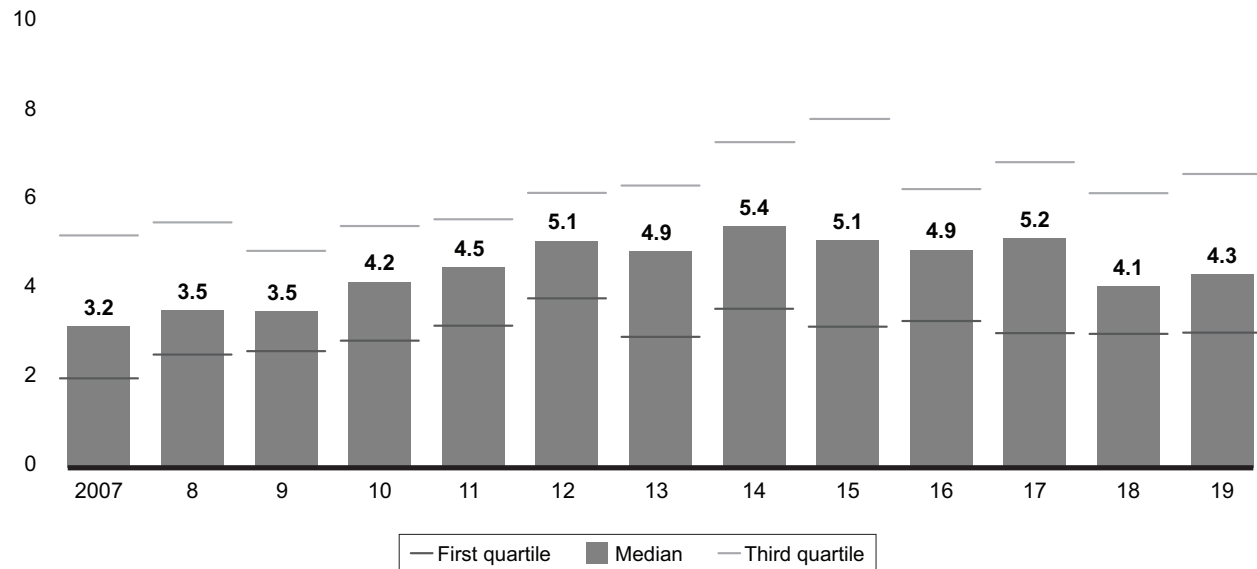
After a time of longer holding periods following the recession, typical holding periods have returned to the standard three to five years. The median holding period across all exits held steady at 4.3 years in 2019, compared with 4.1 years in 2018, which was the lowest since 2009 (see Figure 12). This indicates investors have offloaded the tail of their pre-recession assets, returning portfolios to a healthier position.

We would also note the increasing popularity of quick flips, or assets held for less than three years. The first quartile of holding periods has declined from 3.6 years in 2014 to 3.0 years in 2019. As private capital deployed to healthcare piles up faster than the number of assets, sponsors have more chances to resell high-quality assets. An example was EQT's exit after only two years from Clinical Innovations, a medical device company focused on labor and delivery and neonatal intensive care, to Patricia Industries-owned Laborie Medical Technologies, for \$525 million.

With quick flips, we also see sellers sometimes retaining a minority stake in the asset, keeping some long-term upside potential while also locking in high returns for current funds. For example, Bain Capital sold Waystar to EQT and CPPIB after only three years, but retained minority investment as a testament to the growth trajectory and long-term value it perceived in the business.

Figure 12: Holding periods continued their second year at steady levels, as investors offloaded recession-vintage assets

Median holding period for healthcare private equity exits



Notes: Excludes bankruptcies, recapitalizations, restructuring and write-offs; excludes exits with holding period of less than one year

Biopharma and medtech exits continue to differ from those in the provider and payer sectors. In biopharma and medtech, sales to corporates, or IPOs, are more prevalent. By contrast, provider and payer sectors both feature a high concentration of sponsor-to-sponsor deals, with some corporate activity (see Figure 13).

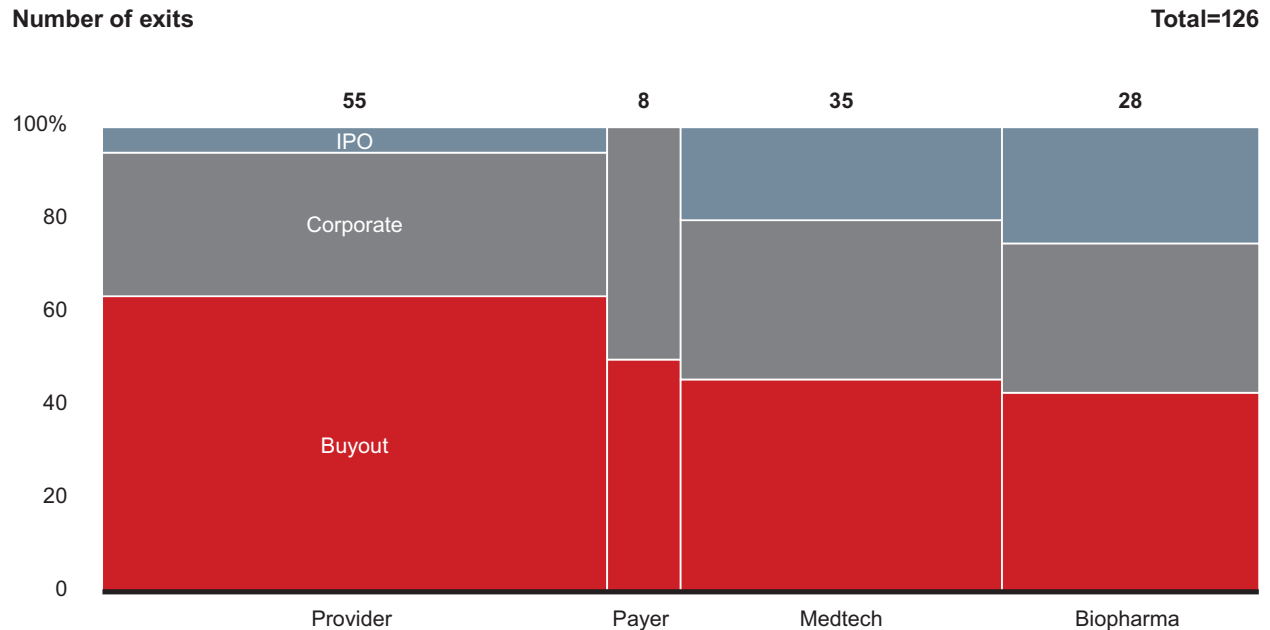
Providers and related services often stay with PE funds

Sponsor-to-sponsor exits prevail in the provider and related services sector. Few large corporates are natural acquirers for multigeography assets. With a long record of buy-and-build strategies, sponsors have a proven value creation plan they can rely on to underwrite deal theses.

For example, JAB Holding bought National Veterinary Associates from Ares Management and OMERS. In one of the largest vision services deal to date, Atlas Partners and CDPQ sold Capital Vision Services (operating as MyEyeDr.), a provider of full-service vision care services, to Goldman Sachs for \$2.7 billion.

Payer and related services command high prices

While there were relatively few payer exits in 2019, they represented 15% of disclosed deal value because they commanded high prices. Just as in the provider sector, many exits go to sponsors; however, in the payer sector, an equal share of exits also go to corporates.

Figure 13: Payer and provider exit deals mainly take the sponsor-to-sponsor buyout route

Sources: Dealogic; Bain analysis

Large corporates used acquisitions to diversify their revenue, build scale in adjacent non-risk-bearing revenue streams, and create efficiencies in their current business model. Equian, a payment integrity service between payers and providers, was acquired by UnitedHealth Group for \$3.2 billion, and Anthem acquired Beacon Health Options, a provider of behavioral health services, from Bain Capital for an undisclosed amount.

On the other hand, large PE investments here have focused on financing flows, reducing the cost of self-funded employee plans and supporting Medicare Advantage. For instance, New Mountain Capital exited Convey Health Solutions, a payer services company that offers administrative software for government-sponsored health plans and administration of supplemental benefits for Medicare Advantage plans, in a sale to TPG.

Medtech and related services: Corporates' incentives to outbid private equity in devices

The medtech sector claims a high share of corporate exits because large corporates have structural incentives to outbid PE funds in key segments like pure medtech devices, whereas financial sponsors often can compete well for outsourced and noncore functions.

Corporate buyers want to build category leadership in specific therapeutic areas as well as expand the number of therapeutic areas covered by their portfolios, to leverage existing call points and manufac-

turing. In an environment where shareholders reward revenue growth over profit margin expansion, corporate buyers remain motivated to use M&A as a lever to raise revenues.

While these conditions make it difficult for sponsors to compete for deals, they also give sponsors an exit route of selling their assets to corporates. In the largest healthcare exit of 2019, Apax Partners, CPPIB and PSP Investments sold Acelity, a medical equipment and supplies manufacturer, to 3M for \$6.7 billion. Another exit saw H.I.G. Capital, Morgenthaler, and Thomas, McNerney & Partners sell Vertiflex, the developer of a minimally invasive device used to treat lumbar spinal stenosis, to Boston Scientific for \$465 million.

Medtech did not see much IPO activity during the year. One phenomenon that could make IPOs viable is the rise of consumer medtech. Clayton Dubilier & Rice and Kleiner Perkins, for instance, backed SmileDirectClub, an affordable direct-to-consumer dental aligners service, which raised \$1.3 billion in an IPO.

Biopharma and related services: A high share of IPOs plus corporate acquisitions

The biopharma sector saw a high share of corporate acquirers, and also had the highest share of IPOs. As nascent biopharma firms come closer to starting clinical trials, they often go public to allow their venture investors to exit as well as prepare for the development and clinical trial costs associated with bringing a novel drug to market. In many cases, they prefer IPOs to adding private funds, because public equity tends to come at a lower cost of capital than private equity, and public investors typically get less involved in management decisions.

This is why KKR-backed BridgeBio Pharma, a pharmaceutical company specializing in gene therapy services, made an IPO for \$348.5 million, and Bain Capital sold SpringWorks Therapeutics, a pharmaceutical company applying precision medicine to rare diseases and cancer, in an IPO for \$162 million.

Outlook: Strong activity even if a downturn occurs

We expect to see sustained strong exit activity among buyout firms and corporates, with partial exits popular for sponsors seeking to get the best of both worlds by locking in quick gains while still retaining upside potential. Sponsors will also be looking for ways to change the profiles of companies for exit, including identifying hidden data assets and potential analytics offerings that can provide supplemental or game-changing revenue streams.

Assuming no downturn, holding periods should remain at their current levels. Yet even in the case of a recession, sponsor activity is likely to stay strong. PE funds and their LPs must continuously deploy capital, and healthcare has proved to be a relatively safe haven in a recessionary environment.

6. 2020 and beyond: Strong fundamentals mean investors' appetite for healthcare will not slacken

Uncertainties pervade any market, and the next few years could see geopolitical changes—from the US presidential and congressional election in November to Brexit—as well as a possible recession. Uncertainties around the effects of the coronavirus, as of this report's publication, have already made markets more volatile. And while a recession has not yet emerged, that possibility has permeated investors' thinking as they evaluate how portfolio companies would perform in a downturn.

The good news: In recent past recessions, healthcare companies showed great resilience by posting stable returns. That suggests that the industry will fare relatively well should another economic downturn materialize. According to Bain analysis in an exclusive partnership with CEPRES, a digital investment platform and transactional network for the private capital markets, healthcare PE investments made from 2006 through 2008 returned nearly a full additional turn more on invested capital vs. non-healthcare PE investments during the same period.

Regardless of potential macroeconomic gyrations, the environment for healthcare deals should continue to shine. Healthcare's structural dynamics remain strong, including aging populations, a growing incidence of chronic disease, and rising wealth in emerging economies, which drives demand—sometimes outpacing supply of healthcare services, as is the case in Asia-Pacific. With technological innovation so prevalent in everything from drug trials to payments, private capital will continue to flow to tech-enabled solutions that help improve care, reduce complexity and take out costs.

The growing stores of PE dry powder, in short, must be put to work. Because investors view healthcare as a safe harbor in heavy weather, they will continue to direct capital to the sector.

For the year ahead and even further out, we expect to see growth in deal activity across geographic regions. In North America, uncertainty around the November election might pull deals forward to the first half of the year.

Europe could be a more nuanced story. Many assets in retail health, for instance, have been building scale through add-ons and plan to hit the market in 2020. Investors will maintain keen interest in HCIT and providers, particularly those companies that can scale across borders.

That said, investors will scrutinize asset valuations and walk away from prices deemed too high, especially for assets of lower quality or lacking a clear upside. In other cases, a shift in industry structure has made it more difficult for assets to trade. The eventual success of any deal in Europe will hinge on a solid upside case and value creation plan.

Turning to Asia-Pacific, the continued undersupply of healthcare goods and services relative to demand from the burgeoning middle classes will drive innovation and investment in the space. Obviously, the

effects of the coronavirus bear watching in China and possibly other countries. However, specific developments within countries will also spur opportunities, such as the Chinese government's volume-based procurement program in drugs, which should favor local pharma companies as eventual winners.

A few investment themes look primed to heat up:

- companies that incorporate data as part of their competitive advantage;
- HCIT that addresses the many pain points for payers, providers and patients, including disruptive primary care;
- risk-bearing providers with boundaries blurred between provider and payer;
- outsourced services within medtech and pharma;
- retail health platforms of many flavors, in a trend toward consumerism;
- next-generation specialty platforms, including radiology and women's health;
- behavioral health;
- payer activity across the value chain from funding, care management, care delivery, and member recruitment and engagement;
- life sciences tools and diagnostics;
- next-generation pharma technologies such as gene and cell therapies; and
- US companies that support growth in Medicare Advantage and companies that help contain the cost of self-funded employer plans.

Regional or sector specifics aside, it is clear that investors will have to sharpen their focus on operating fundamentals rather than relying on the multiple expansion they could count on in recent years. Returns built on expanding multiples served to cover up missed targets for improving revenues and profit margins. That allowed some GPs to look like heroes when in fact their deal models missed the mark.

At some point soon, the multiples froth will fizzle, exposing any shortcomings in operating fundamentals. We will continue to see winners who creatively assemble companies from nothing and find paths to strategic exits. In addition, the GPs who quietly plan for value creation during diligence, then hit their deal revenue growth and margin projections, will continue to outperform. These heroes will succeed by not only rolling up their sleeves for the hard diligence work up front, but also by following through while they own the asset. That's what will allow them to shine above their peers.

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