



GLOBAL HEALTHCARE PRIVATE EQUITY AND
CORPORATE M&A REPORT 2017

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About Bain & Company's Private Equity business

Bain & Company is the leading consulting partner to the private equity (PE) industry and its stakeholders. PE consulting at Bain has grown sixfold over the past 15 years and now represents about one-quarter of the firm's global business. We maintain a global network of more than 1,000 experienced professionals serving PE clients. Our practice is more than triple the size of the next largest consulting company serving PE firms.

Bain's work with PE firms spans fund types, including buyout, infrastructure, real estate and debt. We also work with hedge funds, as well as many of the most prominent institutional investors, including sovereign wealth funds, pension funds, endowments and family investment offices. We support our clients across a broad range of objectives:

Deal generation. We help develop differentiated investment theses and enhance deal flow by profiling industries, screening companies and devising a plan to approach targets.

Due diligence. We help support better deal decisions by performing due diligence, assessing performance improvement opportunities and providing a post-acquisition agenda.

Immediate post-acquisition. We support the pursuit of rapid returns by developing a strategic blueprint for the acquired company, leading workshops that align management with strategic priorities and directing focused initiatives.

Ongoing value addition. We help increase company value by supporting revenue enhancement and cost reduction and by refreshing strategy.

Exit. We help ensure funds maximize returns by identifying the optimal exit strategy, preparing the selling documents and prequalifying buyers.

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Welcome letter

Dear colleagues,

Turmoil creates opportunity, and in 2016, there was plenty of both.

Private equity investors contended with a world of uncertainty.¹ Would the long-running global recovery gain strength, falter or muddle along? Would the UK vote to exit the EU? Who would win the US presidential election?

Amid all this volatility, investors latched onto healthcare as a safe haven—that is, an industry with proven resilience to economic turbulence. The growth of healthcare is powered by several immutable long-term trends: an aging global population, a rising incidence of chronic diseases, an expanding demand for quality services and an ongoing need to deliver those services more efficiently.

Impelled by this logic and helped by low interest rates and readily available capital, funds pushed the total disclosed deal value for healthcare private equity to \$36.4 billion in 2016, the highest level since 2007. It was a banner year in spite of a welter of questions surrounding the industry—especially in the US, the world's largest healthcare market. What would happen to the Affordable Care Act, and what would that mean for insurance reimbursement rates? Would two pending megamergers between US health insurers be blocked by the courts? Would pharmaceutical prices come under greater pressure? In this kind of environment, could the sky-high valuations for deal targets that had prevailed during the past few years be sustained? Would multiples continue to expand?

Given these concerns, investors selected their targets with care. They focused on those areas that were less exposed to regulatory uncertainty, including outsourced services, healthcare IT and retail health providers. PE funds took advantage of a disparity between public and private valuations for some healthcare assets, prompting a surge in public-to-private transactions. The flip side of this trend was a falloff in the number of IPOs amid a modest decline in overall exit activity.

With many buyers chasing a limited number of choice targets, valuations continued to rise. Healthcare deal teams at traditional PE buyout funds faced heated competition for deals as new categories of players entered the fray. They included generalist PE investors, technology investors, sovereign wealth funds, pension funds and family offices. And while the total value of corporate M&A in healthcare fell sharply in 2016 (due mostly to a dearth of megadeals), corporate buyers remained active across the healthcare spectrum, often vying with funds for deals.

In this challenging environment, successful healthcare PE investors can be guided by a few key principles:

- **Focus on category leaders.** Companies that are proven leaders in their segments are better able to withstand macro downdrafts. Many of the top 10 deals of 2016 involved category leaders. Also, at a time when buyers may no longer be able to count on expanding multiples to boost returns, they're finding it essential to invest in targets that have a clear path to increasing earnings through organic growth, acquisitions or divestitures.

- **Embrace efficiency.** Whatever happens with economic growth and government regulation, healthcare companies worldwide will continue to be under pressure to deliver services more efficiently. That creates an opening for investors to help targets become more competitive in the marketplace through cost cutting, carve-outs and bolt-on acquisitions. Investors have also recognized the value of those firms that are in the business of showing providers, payers and pharma companies how to use IT and outsourcing to become more effective.
- **Be creative.** With valuations high and returns less predictable, PE investors are spreading the risk by partnering with other funds, as well as with corporate buyers. Executing large, expensive buyouts requires careful preparation, and many funds are entering into these sizable deals with preset plans for quick roll-ups or spin-offs.

As the global population expands and new, often expensive remedies become available, demand for healthcare will continue to rise. During this time of macro instability, we believe investors will want to increase the weighting of healthcare in their portfolios. The funds that make the most of this moment will be those that focus on category leaders, embrace efficiency and emphasize creativity. While turmoil may ebb and flow, opportunity is usually there—that is, for those who take the time to look for it through a sharply focused lens.

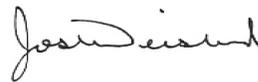
We hope you enjoy Bain’s latest *Global Healthcare Private Equity and Corporate M&A Report*, and we look forward to continuing our dialogue with you in the year ahead.



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¹ Please refer to Bain’s *Global Private Equity Report 2017* for a detailed discussion of overall PE trends.

Healthcare private equity market 2016: The year in review

Section highlights

- While overall PE deal value fell in 2016, healthcare private equity surged to \$36.4 billion in disclosed deal value as investors looked to the industry as a safe haven
- In response to regulatory and reimbursement uncertainty, investors focused on category leaders and “healthcare-light” assets, such as healthcare IT and contract services
- Consortium deals, in which investors band together to acquire large assets, made a comeback
- Three of the top four deals were public-to-private transactions

Around the globe and across industries, the favorable trends that have propelled private equity for the past several years continued into 2016. PE funds enjoyed strong gains on both current and exited investments, handily outpacing those achieved in the public markets. With readily available, inexpensive debt and abundant dry powder, PE funds were again eager to make deals.

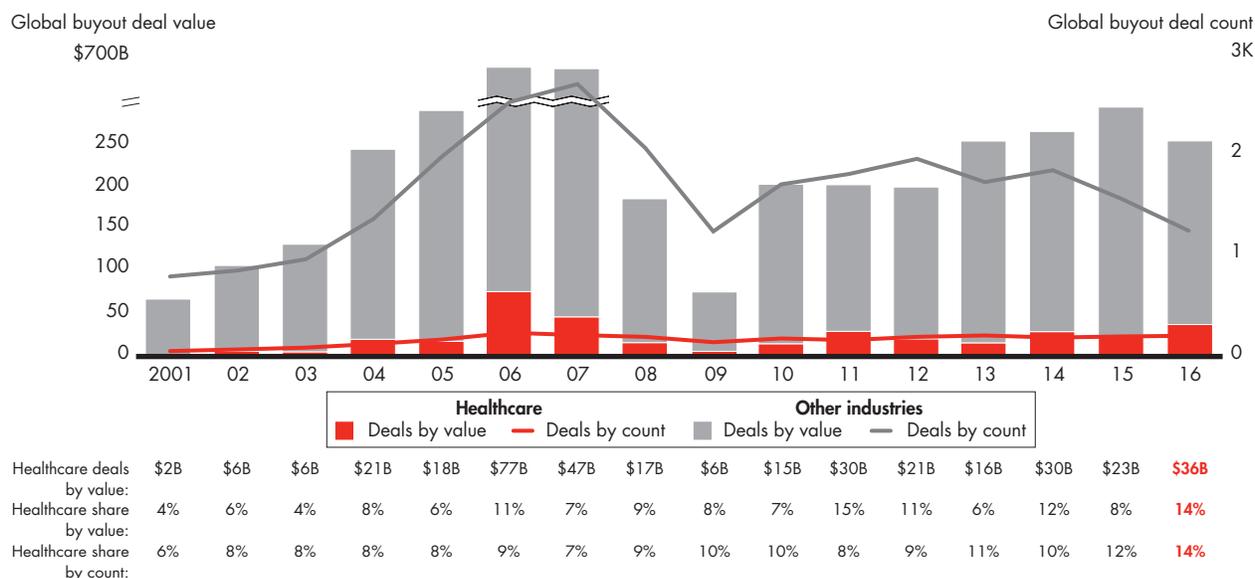
It was, however, a challenge to deploy that money. Global PE deal activity slowed in 2016, stymied by concerns about the viability of the global recovery, slumping oil prices, the bursting of the Chinese stock market bubble, the US presidential election and the UK Brexit vote. Given this uncertain macroeconomic environment, PE firms were challenged by persistently high prices to pencil out the target returns they and their limited partners expected from their investments. Total global deal value fell 14%, and the deal count dropped by 18% (*see Figure 1*).

In sharp contrast to the overall decline in PE deal making, healthcare PE activity soared. Even excluding several large deals whose values were not revealed, total disclosed global healthcare PE deal value reached \$36.4 billion, its highest level since 2007. That marked a nearly 60% increase from the total of \$23.1 billion in 2015. Two megadeals—namely, the \$7.5 billion investment in MultiPlan and the \$6.1 billion acquisition of TeamHealth—accounted for more than a third of the total deal value (*see Figure 2*). The deal count also rose in 2016, to 206 from 199 the year before.

Powerful secular and demographic forces underpin this surge in healthcare PE investing. The global population is getting older, and people are demanding better and often more expensive treatments. The International Monetary Fund forecasts that global annual healthcare spending, about \$8 trillion now, will rise 6% per year, reaching \$10 trillion by 2020. In the US, the world’s largest market, healthcare spending already accounts for 18% of GDP, and it will exceed \$4 trillion by 2020, according to government projections.

With so much interest in healthcare assets, healthcare PE investors face intense competition for deals. In addition to contending against their peers, they must now vie with generalist PE investors, technology investors and corporate buyers, as well as with increasingly active institutional investors such as sovereign wealth funds, pension funds and family offices. One measure of the challenge they face: In the past five years, only 30% of large healthcare PE

Figure 1: Disclosed healthcare PE deal value surged to the highest level since 2007, even though overall PE deal value declined



Notes: Excludes 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 value; totals in healthcare deal by value row in the data table have been rounded to the nearest integer

Sources: Dealogic; AVCJ; Bain analysis

Figure 2: The year's 10 largest healthcare buyouts accounted for nearly 70% of total disclosed deal value

| Target | Target country | Acquirer(s) | Acquirer region(s) | Sector | Deal value (\$B) |
|----------------------------|----------------|--|----------------------------|---------------------------------------|------------------|
| MultiPlan | US | Hellman & Friedman; Leonard Green & Partners; GIC | North America/Asia-Pacific | Payer and related services (HCIT) | 7.5 |
| TeamHealth | US | Blackstone Group; Caisse de dépôt et placement du Québec; PSP Investments; National Pension Service of Korea | North America/Asia-Pacific | Provider and related services | 6.1 |
| Press Ganey | US | EQT Partners | Europe | Provider and related services (HCIT) | 2.4 |
| ExamWorks | US | Leonard Green & Partners | North America | Payer and related services | 2.2 |
| ERT | US | Nordic Capital Svenska; Novo A/S | Europe | Biopharma and related services (HCIT) | 1.8 |
| BioClinica | US | Cinven | Europe | Biopharma and related services (HCIT) | 1.4 |
| PCI Pharma Services | US | Partners Group | Europe | Biopharma and related services | 1.0 |
| Netsmart | US | GI Partners; Allscripts Healthcare Solutions | North America | Provider and related services (HCIT) | 0.95 |
| Epic Health/PSA Healthcare | US | Bain Capital/J.H. Whitney | North America | Provider and related services | 0.95* |
| Atos Medical | Sweden | PAI Partners | Europe | Medtech and related services | 0.95 |
| Total | | | | | 25.2 |

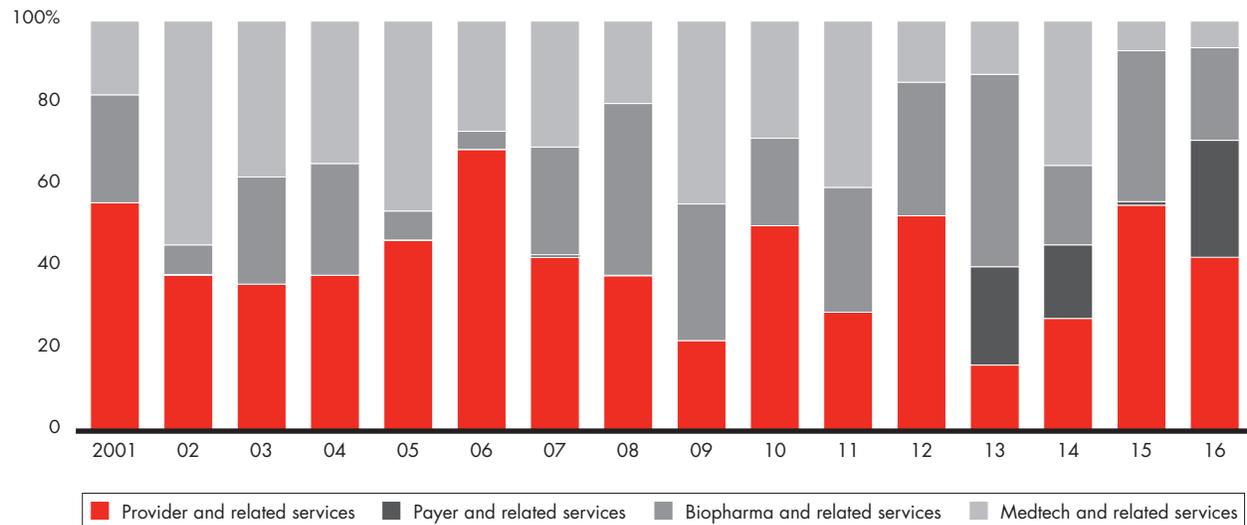
*Epic Health/PSA Healthcare deal value does not include rollover of J.H. Whitney's equity

Notes: Sum may not equal the total due to rounding; includes announced deals that are completed or pending, with data subject to change

Sources: Dealogic; AVCJ; Bain analysis

Figure 3: Investors were active in all healthcare sectors

Global healthcare buyout deal value (by sector)



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

investors have been able to complete more than one deal valued between \$500 million and \$5 billion (or higher), the range considered the sweet spot for large PE deal makers.

This heated struggle for assets has bid up valuations and forced healthcare investors to get creative. Many funds start planning pocket deals during the diligence phase, in which they line up an add-on acquisition to be completed at the same time as, or immediately after, the primary deal closes. Others are coming together to form consortia of buyers that sometimes include corporate partners and other funds. Many PE investors have reached across borders. Nine of the top 10 healthcare deals of 2016 involved US targets, 4 of which were led by European buyers. In Asia-Pacific, Chinese investors, in particular, looked outward, often buying overseas companies with services they hope to bring to China.

In the US, investors hunted for assets in the public markets. Public-to-private (P2P) transactions made up three of the year's four largest deals. Some investors also cashed in on high multiples with partial exits—that is, selling a portion of their holdings to new partners while retaining a minority stake in the target company. Other investors opted to roll over their equity when merging portfolio companies with other assets. Demand for top-tier assets was strong as investors focused on category leaders—that is, companies whose strong positions in core markets make them better able to weather economic uncertainty.

Even as investors looked to healthcare as a safe port, they found the industry faced headwinds of its own. In the US, Donald Trump, first as a candidate and then as a new president, vowed to repeal the Affordable Care Act, raising a series of questions. Would hospitals suffer from increased bad debt expense if there were a rise in the number of uninsured patients? Would the market for Managed Medicaid shrink if Medicaid expansion were reversed? Would

the CMS Innovation Center continue to exist, and if so, would there be any changes to the rollout of new payment models? What would be the outlook for pharma pricing? How high was the risk of government price controls in the US?

Regardless of what happens with the ACA, the healthcare value chain in the US and around the world is under continued pressure to reduce costs and operate more efficiently. Recognizing that, PE funds invested in all of the major healthcare sectors (*see Figure 3*), with many focusing on so-called healthcare-light companies. Healthcare-light businesses are one step removed from changes in reimbursement, meaning they can benefit from positive secular and demographic trends while enjoying some buffer from regulatory risk.² These frequently are the firms that supply information technology, staffing and other services to the core healthcare sectors: providers, payers, pharma and medtech. In fact, the total value of healthcare IT (HCIT) deals swelled to \$15.5 billion in 2016, more than four times the level of the previous year. Funds also flocked to contract research, packaging and sales organizations (known collectively as CXOs). Much of the CXO sector remains fragmented, and funds spotted an opportunity to roll up and consolidate assets or share.

² For a more detailed discussion of healthcare-light and healthcare-heavy segments, please refer to the sidebar “Articulating Reimbursement Risk” in Bain’s *Global Healthcare Private Equity Report 2014*.

Spotlight: The surge in public-to-private deals

Continuing a trend that began in 2015, PE investors capitalized on the spread between public and private valuations of US healthcare assets to take public companies private. Three of the top four healthcare PE deals of 2016—namely, TeamHealth, Press Ganey and ExamWorks—were P2P transactions involving US companies, and they accounted for nearly 30% of total disclosed deal value.

In prior years, many P2P deals were driven by geographic arbitrage. Funds took US-listed Chinese companies private with the intent of relisting them in China, where valuations were higher. That wasn't the case in 2016; P2P activity was an all-American affair as volatility in the stock market depressed public multiples for US-listed healthcare companies and heated competition for assets bid up multiples in the private market.

To understand how these trends affected public and private valuations of US healthcare assets, we analyzed valuations for companies with enterprise values (EV) between \$500 million and \$10 billion (the size range most actionable by large PE funds). We then identified assets in segments in which private equity is most active: provider and related services, payer and related services, HCIT and companies that supply services to pharma and medtech firms. We defined the valuation multiple of an asset as EV divided by earnings before interest, tax, depreciation and amortization for the last 12 months (LTM EBITDA), and we aggregated individual company data into composite metrics by weight-averaging the valuation multiples by LTM EBITDA.

For public companies, we analyzed companies that were publicly listed at the end of each year over the past decade (2007 to 2016), using their year-end share price to calculate EV. This analysis shows that the weighted average trading multiple for the assets in our universe dipped from a peak in 2014 to approximately 11 times in 2016 (*see Figure 4*).

For private companies, we analyzed the 16 healthcare companies that PE funds announced they were acquiring in 2016 for which EV and LTM EBITDA were available and that were in the same EV size range of \$500 million to \$10 billion. We scaled the weighted average valuation multiple for this data set to match the sector composition of our 2016 public data set, and we found that the weighted average valuation multiple was approximately 13 times, two turns higher than the average for our public data set (*see Figure 5*). This disparity helps explain the surge in P2P deals in 2016: Even when private investors figured in the sizable premiums that they must typically pay shareholders to acquire public companies, they saw opportunities to win marquee assets at favorable valuations, compared with what they would have had to pay for similar assets on the private market.

Another sign of strong private market valuations is the outcome of so-called dual-track exits. The PE owner of an asset who uses this approach will simultaneously file for an IPO while exploring a private sale of the asset, either to another sponsor or to a corporate buyer. When private valuations are high, investors tend to pick the sponsor-to-sponsor option over the IPO. In 2016, Thomas H. Lee Partners (THL) pursued a dual-track process for outsourced pharma services company inVentiv Group, ultimately opting to sell a material stake in the company to Advent International rather than following through with an IPO. Under continued private ownership, inVentiv maintains the flexibility to invest

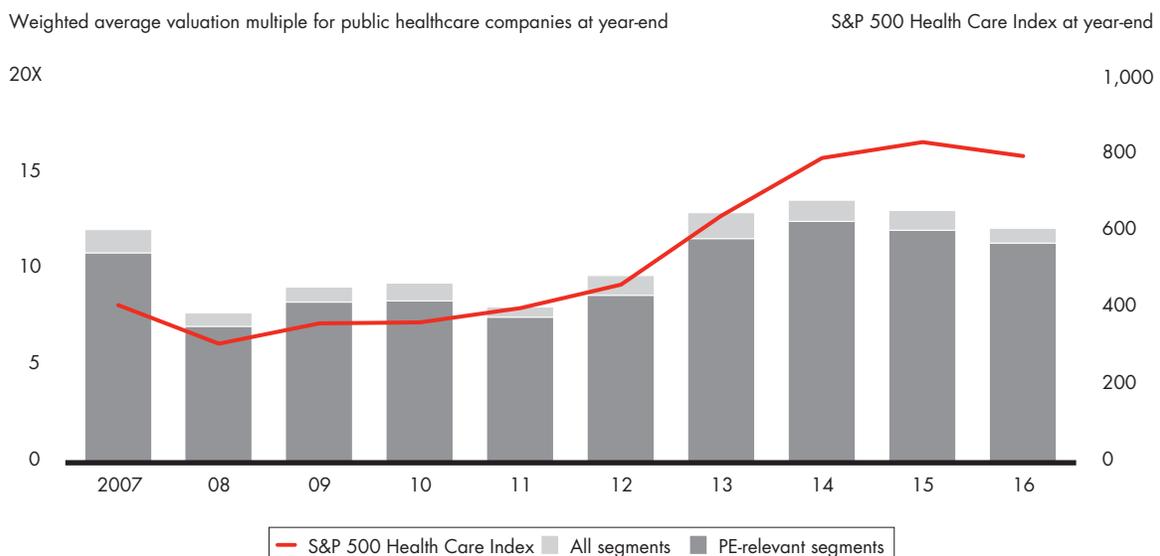
for the long term in corporate partnership opportunities across its clinical, marketing and sales solutions.

Given the premiums that buyers pay to take assets private, they need to have a clear plan for creating value with their new asset. Of course, if both public and private multiples continue to expand, funds will have a cushion as they think about an exit strategy. But take-private buyers can't count on perpetually rising multiples. They also need to come into a P2P transaction with a plan to grow revenue and profits.

Funds searching for public companies that may be truly undervalued by the public markets look for a few telltale signs, many of which were evident in recent P2P transactions (see Figure 5):

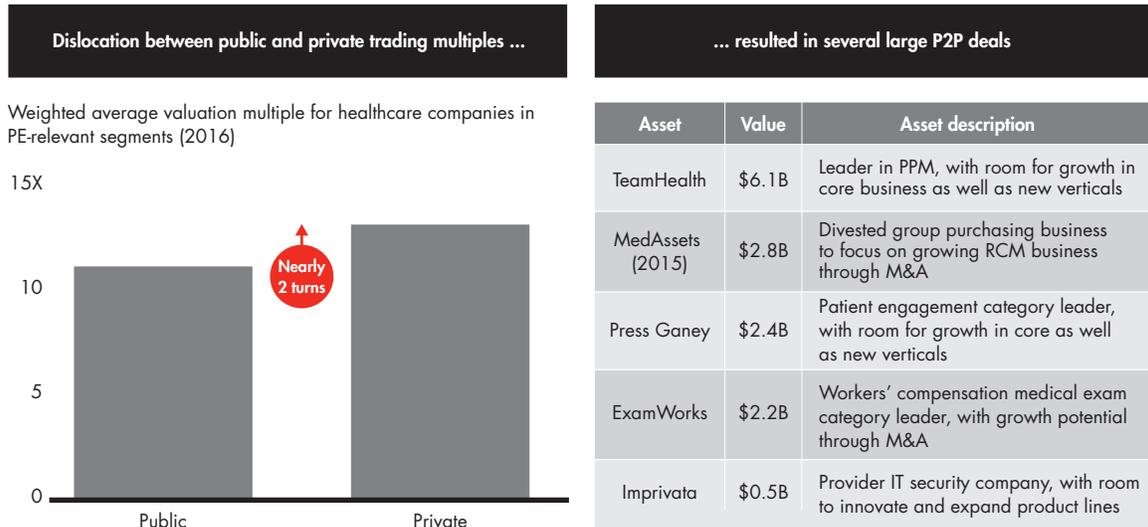
- **Short-term earnings volatility.** These fluctuations, which often wreak havoc on a company's stock price, can mask solid long-term fundamentals.
- **Untapped M&A growth potential.** While public investors don't always see the wisdom of a proposed merger, private capital can be more nimble in responding to opportunities and more patient during post-merger integration.
- **Spin-off possibilities.** While public investors might frown on the near-term hit to revenue from a divestiture, private investors can see a chance to improve margins.
- **Category leaders.** As a general rule, these are the companies that are well positioned to weather periods of uncertainty.

Figure 4: In 2016, multiples for US-listed publicly traded healthcare companies fell



Notes: Includes US healthcare companies publicly listed at year-end with valuation multiple data (EV divided by LTM EBITDA) available; average weighted by LTM EBITDA; data represents the last business day of each year; PE-relevant segments include provider and related services, payer and related services, HCIT and companies that supply services to pharma and medtech firms
Sources: S&P Capital IQ; Bain analysis

Figure 5: Investors took advantage of the gap between public and private multiples to take private major healthcare assets



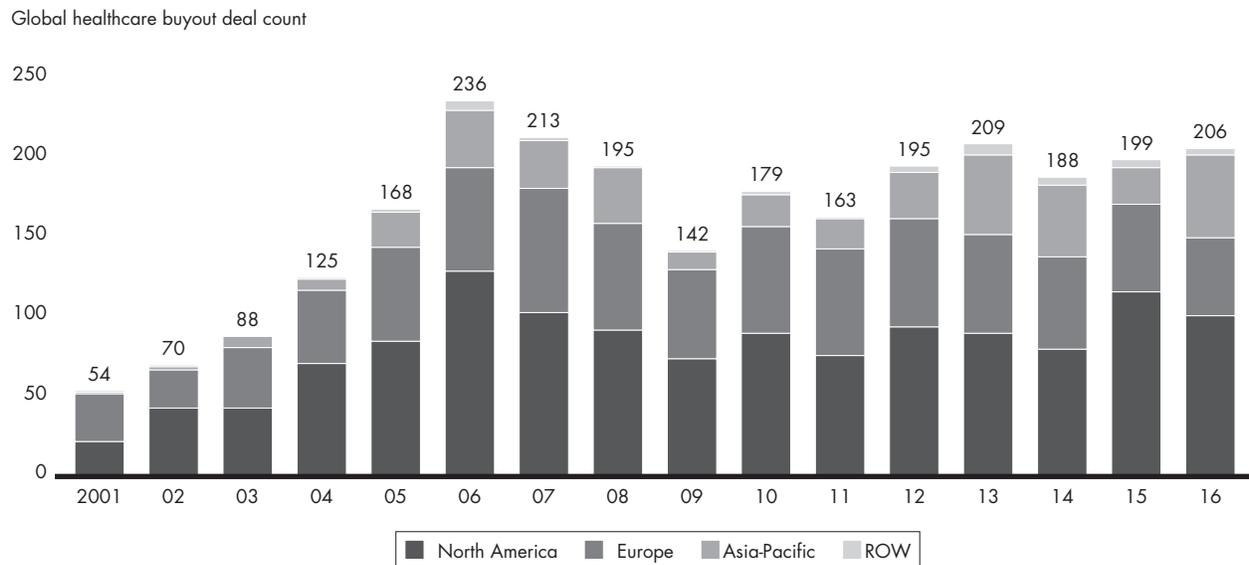
Notes: For the left-hand chart, public data is based on the EBITDA-weighted average valuation multiple (EV divided by LTM EBITDA) of US-listed public companies at year-end 2016, private data is based on the EBITDA-weighted average valuation multiple of PE buyouts announced in 2016 (with the sector weighted to match the composition of the public data), and the chart only includes companies with an EV between \$500 million and \$10 billion (with data available and in the PE-relevant segments defined in Figure 4); for the right-hand chart, PPM=physician practice management and RCM=revenue cycle management
Sources: S&P Capital IQ; Dealogic; Bain analysis

Geographic trends

Overview

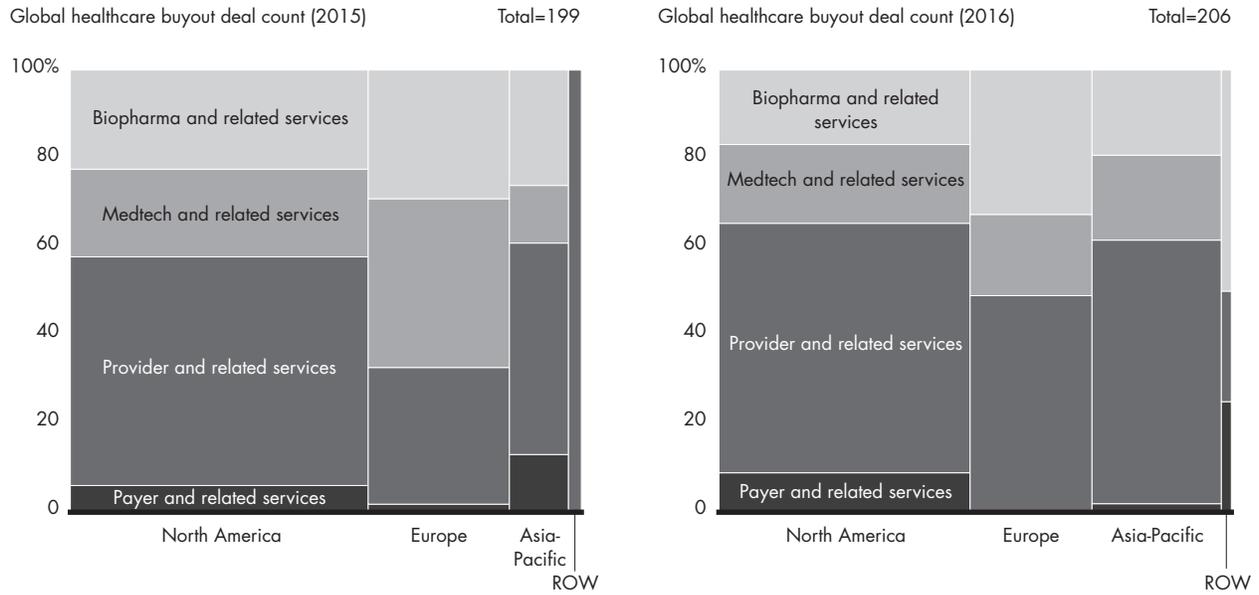
In 2016, the majority of healthcare PE activity again took place in North America, especially the US. Nine of the top 10 deals involved US assets. Total North American deal value surged to \$28.4 billion in 2016, more than triple the 2015 value. While Europe was the second-most active region, deal value and activity fell. European funds aimed to diversify their portfolios by investing overseas, particularly in the US. Activity was strong in Asia-Pacific (see Figure 6), especially in the provider sector, where deal count nearly tripled (see Figure 7). While the rest of the world has yet to catch up with the three leading regions, investors in developing markets did some significant healthcare deals. For example, Investcorp bought a stake in Saudi Arabia-based Al Borg Medical Laboratories, which operates laboratories in eight countries in the Middle East and Africa.

Figure 6: While North America and Europe had the largest share of deals, Asia-Pacific saw a surge



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; ROW stands for rest of the world and includes Central and South America, Africa and the Middle East
Sources: Dealogic; AVCJ; Bain analysis

Figure 7: Providers and related services again accounted for most of the deals worldwide



Notes: Excludes 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; geography based on the location of targets; ROW stands for rest of the world and includes Central and South America, Africa and the Middle East
Sources: Dealogic; AVCJ; Bain analysis

North America

Section highlights

- Total deal value rose to \$28.4 billion despite political and regulatory uncertainty
- Nine of the top 10 healthcare deals globally involved US-based assets
- Cross-border investment activity was strong—4 of the top 10 healthcare deals involved European buyers and US-based assets
- HCIT, retail health and outsourced services assets were especially popular

It was a tumultuous year in North America as deal makers grappled with lofty valuations, high competition for choice assets and political uncertainty. Antitrust concerns stalled several planned corporate mergers, including those involving four of the five largest payers, and pressure continued on pharma pricing.

Despite the turbulence, investors continued to find opportunities, particularly in the US, the world's largest healthcare market. Total North American buyout value soared to \$28.4 billion in 2016, more than triple the 2015 level, even though the number of deals fell by 13%, to 101. Activity was driven by seven deals valued at \$1 billion or more, including two megadeals valued at more than \$5 billion.

In this environment, investors shied away from healthcare-heavy assets with direct exposure to reimbursement rates and instead focused on companies that can help payers, providers and drugmakers become more efficient. Much of the region's deal activity involved healthcare-light segments such as CXOs, physician practice management (PPM), retail health and HCIT (including solutions for payers and providers and for pharma companies conducting clinical trials).

To grapple with high valuations, investors continued to focus on assets with strong positions. Funds also pursued creative deal structures, in several cases partnering with other investors, sometimes reaching across international borders. In the MultiPlan deal, for example, Hellman & Friedman (H&F) allied with Leonard Green & Partners and GIC, a sovereign wealth fund based in Singapore. Even though the US stock market was buoyant, in some areas, private valuations exceeded trading levels of public assets. This dynamic generated several major P2P deals (see "Spotlight: The surge in public-to-private deals").

Despite the uncertainties created over the future of the Affordable Care Act, funds continued to find compelling reasons to invest in US healthcare assets: Healthcare accounts for a large share of US GDP, the population is aging, and demand for healthcare services tends to rise regardless of how fast the economy is growing. The industry has historically shown good returns, but funds will need to stay nimble as competition for assets intensifies. In addition to traditional US-based and Canadian-based healthcare investors vying for US assets, a growing number of Asian and European investors have entered the fray. Four of the top 10 deals in the region were led by European funds.

Europe

Section highlights

- Deal value and activity fell amid economic and political uncertainty
- Some European funds looked abroad, especially to the US, for targets
- Within Europe, investors saw positive trends, including rising demand for healthcare and the need to make delivery more efficient
- Active segments included retail health, contract outsourcing and specialty generics

Given the unsteady economic and political climate throughout the region, European investors stepped up efforts to diversify their portfolios by buying assets abroad, especially in the US, the world's largest healthcare market. While only 1 of the 10 largest global healthcare deals of 2016 featured a European target, 4 of them involved European investors buying US assets. That stands in sharp contrast to 2015, when half of the top 10 deals involved European targets.³

Across Europe, fewer large-scale assets came to market during the year as investors grappled with the Brexit vote, exchange rate volatility, stubbornly slow economic growth and continued momentum for a sweeping overhaul of EU regulations for medical devices. Overall deal value in 2016 was \$4.6 billion, 42% lower than the \$8.0 billion level reached in 2015. Deal count fell as well; there were 49 deals in 2016, down from 55 in 2015.

Despite the turmoil in the region, European investors continued to see long-term opportunities. Demand for healthcare is rising as the population ages. National governments, which play a significant role as payers and regulators throughout Europe, are under pressure to provide services more efficiently. There is a burgeoning market for services firms across the healthcare value chain that can help providers deliver better outcomes at lower costs. At the same time, many healthcare segments are fragmented, leaving significant room for cost improvements via consolidation. As a result, it is no surprise that in 2016, funds bought retail health assets, outsourced service companies focused on pharma and medtech, and niche product companies such as specialty generics manufacturers.

At least some of the uncertainty hanging over Europe will continue into 2017. Many questions remain about the timing and impact of Britain's exit from the EU, which poses a challenge for investors trying to value companies with significant assets in the UK. The European Medicines Agency, the EU's pharmaceutical regulatory arm, is based in London, and EU medical research funds flow to British laboratories. The loss of both the agency and research grant money is likely to diminish the UK's standing as a medical research center, making it harder for pharma companies operating there to attract top scientific talent.

Brexit will also have a yet-to-be-determined impact on tax rates paid by UK companies that do business in, or buy supplies from, EU member countries. Further complicating the challenge of doing diligence on a UK asset is the

value of the British pound, which, if it remains relatively weak, could raise costs for British pharma and medtech companies that import raw materials and components from abroad.

In 2016, the EU published updated and more stringent regulations regarding the manufacturing and marketing of medical devices. These new rules, which will be phased in starting in 2017, bring regulations more in line with the US and will likely raise costs for many medtech companies. Some firms may opt to put some of their product lines up for sale rather than incur additional compliance costs. Those moves could provide targets for funds looking to acquire medtech assets. Investors may also be interested in outsourcing firms that can help companies adapt to the new regulations. As with the perturbations over Brexit and exchange rates, the medical device disruption is likely to create prospects and opportunities for funds looking to invest in European healthcare.

³ For more details on Bain's perspective on private equity investments in Europe, please see "Spotlight on Europe: Why the fractured continent still merits investment" in Bain's *Global Private Equity Report 2017*.

Asia-Pacific

Section highlights

- Activity was strong throughout the region, particularly in hospitals and clinics, which nearly tripled in deal count
- While total deal value fell in 2016, the lower level was largely due to the absence of a mega-buyout such as that of WuXi PharmaTech in 2015
- Many deals featured a mix of buyers—corporate, PE and sovereign wealth funds

Healthcare PE activity was strong throughout Asia-Pacific in 2016, with a total of 52 buyouts, a return to levels last seen in 2013 and 2014. After three consecutive record-setting years, total deal value declined somewhat in 2016, to \$3.2 billion from \$4.9 billion in 2015. However, the falloff was largely due to the lack of a megadeal such as the \$3.3 billion buyout of publicly traded WuXi PharmaTech that dominated 2015. The few scale assets that became available in 2016 went to corporate buyers. That said, there were still 10 buyouts in 2016 valued at more than \$100 million, and an additional \$700 million of the region's capital was deployed in private investments in public equities (PIPEs).

PE investors continued to find Asia-Pacific's demographic trends promising. The population is growing, the middle class is expanding, and demand for medical care is rising, including for the treatment of both chronic and communicable diseases. Governments have eased barriers to foreign direct investment. As part of China's 13th Five-Year Plan, which was approved in 2015, the government encouraged investment in the provider, medtech and HCIT sectors. Despite such inducements, however, investors remained somewhat constrained by a shortage of quality, scale assets, as well as by high valuation expectations.

The resurgence in deal activity across the region was driven by the provider sector. There were 31 provider deals in 2016, about three times the number in 2015, with assets changing hands in China, India, Southeast Asia and Australia. The largest healthcare PE deal in Asia-Pacific in 2016 was the investment in GenesisCare, an Australia-based provider of radiation oncology treatment and cardiovascular care, by a group of Chinese and Australian investors.

The GenesisCare deal marked a continued move by Chinese investors to acquire stakes in overseas healthcare companies, with the goal of bringing expertise back to China. The mix of buyers in Asia-Pacific continued to shift and expand, encompassing investment firms, corporations and sovereign wealth funds, including Singapore's Temasek and Malaysia's Khazanah Nasional. Japan's Mitsui, for example, joined with Khazanah and US-based dialysis provider DaVita Kidney Care to help the company roll out clinics throughout Asia-Pacific.

Corporate competition for the largest assets in the region was strong, especially from Japanese conglomerates. The biggest asset to come to market in Asia-Pacific in 2016, Toshiba Medical Systems, attracted interest from PE investors, but ultimately sold to Canon for \$5.9 billion. Similarly, Fujifilm beat out PE investors for the sale of Takeda Pharmaceutical's 70% stake in Wako Pure Chemical Industries, which makes diagnostic reagents.

Sector trends

Provider and related services

Section highlights

- The provider sector was the most active in healthcare, with 113 deals valued at \$14.9 billion
- Investors showed strong interest in firms that can help providers become more efficient, such as HCIT firms and physician services
- Retail health assets were popular globally; hospital and clinic assets were in demand in Europe and Asia-Pacific but were less active in the US due to uncertainty around the ACA

The provider sector continued to be the most active in healthcare, with 113 deals in 2016, up from 93 in 2015. Total disclosed deal value rose from \$12.7 billion to \$14.9 billion, and that number was understated because the terms of several large transactions were not disclosed. While North America again accounted for the bulk of activity, both Europe and Asia-Pacific had strong years. Deal count in the Asia-Pacific provider sector nearly tripled in 2016 compared with 2015.

While uncertainty over the fate of the Affordable Care Act in the US and other regulatory issues raised concerns among investors in some segments, interest in provider assets worldwide continued to be fueled by a compelling thesis. Demand for medical services is expanding, abetted by aging populations and the development of new and often expensive treatments. As providers struggle with rising costs, they need to find ways to become more efficient, creating opportunities for investors in segments such as HCIT and other services that can help providers improve their operations, as well as in fragmented segments such as retail health delivery in which consolidation can deliver economies of scale.

Across the provider sector, competition for large, quality assets was intense, with investor demand exceeding supply. Faced with a shortage of targets and an expansion of multiples, funds got creative in sourcing and winning assets, hunting for P2P and cross-border investment opportunities, banding together in consortium deals and partnering with corporate buyers. In fact, the two largest provider buyouts of the year, TeamHealth and Press Ganey, were P2P transactions that included cross-border investors.

Investors also sought ways to maintain some upside potential in major assets. When Bain Capital-backed Epic Health Services merged with J.H. Whitney-backed PSA Healthcare in early 2017, J.H. Whitney rolled over its equity into the new entity. Other funds engaged in partial exits: They took advantage of high multiples to sell part of their holdings in a company to another fund while continuing to coinvest along with the new owners. For example, Audax Private Equity sold most of its holding in Advanced Dermatology & Cosmetic Surgery to Harvest Partners and retained a minority stake in the firm.

North America

Provider deal value in North America surged from \$7.3 billion in 2015 to \$11.8 billion in 2016. Activity in the region was concentrated in the US, where investors focused on those parts of the reimbursement risk spectrum least likely to be affected by the repeal of the ACA. Funds shied away from hospitals and other providers vulnerable to a potential surge in the number of uninsured and underinsured patients. This drew investors to services segments such as HCIT and PPM, as well as to retail health.

The physician services segment had the year's largest provider deal—the P2P buyout of PPM firm TeamHealth. Following a failed acquisition bid from rival AmSurg, the company was acquired by a Blackstone-led group for \$6.1 billion. It was Blackstone's second turn at private ownership of TeamHealth; it had controlled the firm before taking it public in 2009. The consortium also included two Canadian investors, Caisse de dépôt et placement du Québec and PSP Investments, as well as National Pension Service of Korea.

Another notable deal in the physician services segment was Audax Private Equity's recapitalization of Gastro Health, a South Florida gastroenterology PPM firm. This deal shows that investors are looking beyond traditionally popular specialties such as emergency departments, hospitalists and anesthesia.

As discussed later in this report, there was significant activity in provider-focused HCIT assets, the majority of which involved US-based companies. The second-largest provider deal of the year was the \$2.4 billion P2P buyout of Press Ganey, a tech-enabled services firm, by European fund EQT. Press Ganey, the category leader in patient experience solutions, commanded a premium price, because of the opportunity for growth in its core patient business and expansion into promising verticals, such as caregiver solutions and safety, which build upon the company's strong hospital relationships.

In the retail health segment, three major deals involved physical therapy providers: Advent acquired a majority stake in ATI Physical Therapy, BDT Capital Partners invested in Athletico Physical Therapy, and THL acquired Professional Physical Therapy (ProPT) from Great Point Partners. Dermatology was another active area. In addition to the Advanced Dermatology deal, GTCR invested in Riverchase Dermatology, and Varsity Healthcare Partners sold its majority stake in Forefront Dermatology to OMERS Private Equity.

Remaining activity was scattered across a variety of historically popular segments. In post-acute care, Bain Capital acquired Epic Health Services, a pediatric home care company, in 2016, and then merged it with PSA Healthcare in early 2017. In another example, Welsh Carson Anderson Stowe (WCAS) invested in Innovage, a leading provider of senior care programs.

Although there were no major behavioral health deals in 2016, the Netsmart deal (discussed in the HCIT section) was a derivative play on the segment. Several funds also kept a watchful eye on the hospital segment. Although the uncertainty surrounding the ACA and the potential impact on the size of the uninsured population make valuing hospital assets more challenging, funds are on the lookout for distressed or undervalued assets that could benefit from PE's operations toolkit.

Europe

In Europe, funds invested along the spectrum of reimbursement risk, particularly in segments that offered continued opportunity for consolidation. Overall, asset availability was scarce, and competition from corporate acquirers was

high—trends that helped depress the overall disclosed value of buyouts, which fell from \$3.7 billion in 2015 to less than \$1.0 billion in 2016. Faced with a dearth of available local assets and a need to diversify their portfolios, European investors looked to other geographies; European investors led the acquisition of US targets in 4 of the year's top 10 deals, including provider-focused Press Ganey.

Investors continued to see consolidation potential in hospitals, clinics, nursing homes and home care in Europe. The Carlyle Group bought a minority stake in Schön Klinik, a family-owned German hospital and clinic chain. Ardian sold its stake in KOS, which operates hospitals and residential care homes in Italy, the UK and India. The buyers were F2i, an Italian infrastructure fund, and conglomerate Compagnie Industriali Riunite, which was already the majority owner of KOS. In the retail health segment, EQT acquired UK veterinary services platform Independent Vetcare from Summit Partners and, in early 2017, announced plans to merge it with existing portfolio company Evidensia, a leading veterinary group across the Nordic region and central Europe. Funds also made investments in several dermatology assets.

Throughout the provider sector, corporate buyers competed with PE funds for deals. At the same time, corporate acquirers supported several exits. For example, Advent sold UK behavioral health provider Priory Group to US-based behavioral health firm Acadia Healthcare. Notably, this deal sparked a new wave of PE activity through divestitures, including BC Partners' agreement to acquire a portfolio of mental health hospitals, some of which were owned by Priory, from Acadia late in the year.

Asia-Pacific

The total disclosed value of provider buyouts in Asia-Pacific surged to \$2.4 billion in 2016, up from \$0.8 billion the year before, bolstered by favorable regulations and the availability of assets. Funds faced heated competition from corporate buyers, but different categories of investors also collaborated, often across borders. For example, Malaysian sovereign fund Khazanah formed a joint venture with Mitsui of Japan and US-based DaVita Kidney Care to support DaVita's expansion in Asia-Pacific.

In China, funds continued to be encouraged by the 13th Five-Year Plan (approved in 2015), which urges more private investment in healthcare delivery as a way to meet the growing demands of the population. In 2016, there were numerous investments in Chinese provider assets: Bain Capital acquired a controlling stake in Asia Pacific Medical Group, a Chinese hospital group specializing in neurosurgery and neurology; Carlyle bought a stake in Zhongmei Healthcare, a specialty hospital group that filed for an IPO later in the year; and Singaporean sovereign fund Temasek formed a joint venture with Seattle-based Columbia Pacific Management to expand the company's specialty hospital operations in China.

Chinese investors also looked beyond borders. In Asia-Pacific's largest provider deal, Hong Kong-based China Resources Group joined with Australian investment bank Macquarie Group to buy a majority share in GenesisCare, an Australian radiation and oncology chain, a transaction that also marked an exit by KKR, which had acquired a stake in GenesisCare in 2012. The new owners plan to bring the company's cancer care expertise to China.

In India, investors were active in hospitals and clinics. For example, Abraaj Group bought a majority stake in CARE Hospitals, India's fifth-largest healthcare provider, from Advent. While funds expressed interest in Southeast Asia, they continue to be deterred by a lack of assets and steep valuation expectations. One deal in the region that did come to fruition, however, was CVC Capital Partners' stake investment in Indonesian hospital operator Siloam.

Payer and related services

Section highlights

- Disclosed deal value reached a record \$10.5 billion, driven by two megadeals: the H&F-led \$7.5 billion acquisition of MultiPlan and Leonard Green's \$2.2 billion P2P buyout of ExamWorks
- With regulatory and legislative uncertainty clouding the core payer area, investors focused on services business such as payment analytics, workers' compensation services and pharmacy benefit managers

Disclosed deal value in the payer sector reached a record \$10.5 billion in 2016, driven by a small number of sizable deals. Otherwise, activity in the sector was tempered by concerns over the future of the Affordable Care Act and the fate of pending corporate mergers that were awaiting approval from regulators. Investors focused on payer services segments, including payment analytics and workers' compensation, which are less vulnerable to major regulatory and legislative risk. The surge in deal value was driven by two megadeals in these segments: the H&F-led \$7.5 billion acquisition of MultiPlan (which was the largest healthcare PE deal of the year) and Leonard Green's \$2.2 billion P2P buyout of ExamWorks.

The number of payer deals in 2016 remained steady at 11, and, as in years past, most of the acquired assets were located in the US. Corporate interest in the payer sector remained high, boosting confidence among PE investors that, when it comes time to sell, they would be able to find a ready supply of corporate acquirers.

Payer HCIT assets drew significant interest in 2016, propelled, in part, by the priority many PE firms have placed on making IT investments across industries, including healthcare. This has been a powerful buyout theme for years, as indicated by the recent history of MultiPlan leading up to last year's blockbuster deal. The company, which is a category leader in network and negotiation support for payers, has changed hands three times in six years. BC Partners and Silver Lake acquired the asset in 2010 and sold it to Starr Investment Holdings and Partners Group in 2014, which sold it in 2016 to a consortium that included H&F, Leonard Green and GIC. During this time, MultiPlan expanded from its roots as a supplementary provider network into the higher-margin, higher-multiple analytics business.

In a second payer HCIT deal, Veritas Capital acquired Verisk Health, which supplies IT solutions around risk assessment, fraud, waste and abuse, and population health to payers and providers, in an \$820 million carve-out from Verisk Analytics. Verisk Health, rebranded as Verscend Technologies, helps companies contain costs through claims vetting and fraud detection and provides risk management for Medicare Advantage plans. Veritas, an active investor in HCIT, also locked in a strong exit during the year, with the sale of Truven Health Analytics, the health-care division of Thomson Reuters it had acquired in 2012, to corporate buyer IBM.

Workers' compensation continued to be a popular segment, led by Leonard Green's P2P buyout of ExamWorks, which provides independent medical exams for workers' compensation claimants. In addition, TA Associates acquired a minority stake in MedRisk, which manages networks of physical therapy and diagnostic imaging for

workers' comp payers, and the Riverside Company bought Australian case management firm WorkFocus Group. While workers' comp is not a growth business—in the US, the incidence of on-the-job injuries has been in steady, gradual decline—there is still an opportunity to increase service penetration and gain market share via consolidation.

Investors also showed interest in pharmacy benefit manager (PBM) assets. Since PBMs tend to sell directly to employers—as well as to payers and third-party administrators (TPAs)—they are less vulnerable to the customer concentration concerns that hang over other benefit managers. In addition, the segment benefits from the continued growth of the pharmaceutical sector. While on the surface the PBM market may seem less relevant to PE investors due to the presence of consolidated, large-scale competitors, the landscape of Tier 2 PBMs is fragmented and includes assets that fall within the sweet spot for PE investors. In 2016, Carlyle acquired WellDyneRx in an auction that included both corporate and buyout firms. This followed the successful exit of EnvisionRx by TPG to corporate buyer Rite Aid in 2015.

Biopharma and related services

Section highlights

- Following a strong 2015, deal value and activity were down slightly in 2016
- Outsourced services were in demand as manufacturers sought to contain costs
- Interest was high in makers of specialty generics, particularly in Europe
- Investors bought into overseas companies selling OTC products in China

PE investors showed continued strong interest in the biopharma sector in 2016, with 45 deals with disclosed value of \$8.1 billion—a total that excludes at least one large deal whose value wasn't disclosed. That compared with 48 deals valued at \$8.5 billion in 2015. There were seven deals valued at \$500 million or more, compared with four in 2015. Funds flocked to services assets, as well as to product segments that are more insulated from pipeline risk and pricing pressure, although several funds continued to experiment with creative models for taking branded pharma risk. While the preponderance of deal activity was in North America, there were several large transactions in Europe. In China, investors tapped into growing demand for OTC drugs, vitamins and supplements.

As it was in 2015, the most active biopharma segment of the year was CXOs, including contract sales organizations (CSO), contract research organizations (CRO) and contract packaging organizations (CPO). Investors expect demand for outsourced services to remain strong as pharmaceutical companies, under pressure from payers and politicians to limit price increases, continue to look for ways to contain costs and rationalize their supply chains.

In the CSO and CRO segments, Advent acquired a meaningful stake in THL-backed inVentiv, which provides clinical and commercial services to the pharmaceutical industry. In the CPO segment, Partners Group acquired PCI, a leading provider of outsourced manufacturing and packaging services, for \$1.0 billion. Given the fragmentation in the CPO segment, especially in PCI's categories, there is significant opportunity for companies to build share organically and through M&A.

Although there were no major contract manufacturing organization (CMO) buyouts in 2016, one of the major exits of the year was KKR's sale of capsule manufacturer Capsugel to pharmaceutical supplier Lonza Group. PE investors continued to be interested in the relatively underconsolidated CMO segment—namely, in assets that have sophisticated manufacturing capabilities and are able to handle large molecules or other niche products and services.

Growing interest in HCIT solutions serving the biopharma industry made it the second-most popular biopharma segment of the year, led by two large deals focused on the drug development process. In a \$1.4 billion deal, Cinven acquired BioClinica, a supplier of tech-based services for clinical trials, including medical imaging and phone apps for participants, from Water Street and JLL Partners. In a \$1.8 billion deal,

European investors Nordic Capital and Novo A/S jointly acquired ERT, which helps drug developers manage data, from Genstar Capital. Genstar had taken the company private in 2012 and expanded it through acquisitions.

On the product side, four European manufacturers of generics changed hands. Ethypharm, based in France, was acquired by PAI Partners; DOC Generici, of Italy, was bought by CVC; and both Invent Farma, of Spain, and Neuraxpharm Arzneimittel, of Germany, were acquired by Apax Partners. PE investors targeted those generic drugmakers that were most insulated from regulatory and pricing pressures, including manufacturers that focus on difficult-to-make products, operate in small markets less likely to attract pricing scrutiny from payers, or make drugs in niche dosages that are too limited to attract competition from the large corporate manufacturers of generics or biosimilars.

In the Asia-Pacific region, where there is a growing interest in health and wellness, one of the most active areas in biopharma was OTC products and supplements. Because of quality concerns with some domestic manufacturers, Chinese investors looked overseas—namely, to Australia and Canada—to buy OTC manufacturers that marketed their products in China. In one such deal, Primavera Capital joined with Shanghai Pharmaceuticals Holding to take private Vitaco, an Australian developer and manufacturer of vitamins and supplements.

While PE funds are interested in branded pharmaceuticals, including both standalone manufacturers and drug portfolios carved out of larger pharma companies, the segment remains challenging because of competitive and regulatory pressures. When evaluating branded pharma targets, two key things investors typically look at are the competitive pipeline and the pricing environment. Traditional methods of raising prices, including sizable increases through new formulations and methods of administration and annual single-digit rises on existing products, continue to draw scrutiny from regulators.

Despite these obstacles, funds are forming ventures and partnerships to invest in both new and mature branded products. Carlyle Group, for example, joined with healthcare investor Bourne Partners to build a global pharma platform known as Phoenix Therapeutics. Warburg Pincus partnered with pharmaceutical industry executives Don DeGolyer and Andrew Saik to form Vertice Pharma to acquire specialty pharmaceutical companies and products. In a similar move, GTCR joined with pharmaceutical industry executive Ed Fiorentino to form TerSera Therapeutics. In another example, RCP Pharma pursued an R&D-oriented model and created a unique platform for investors to support external drug development for pharma companies. We expect PE funds to continue to pursue creative ways to invest in branded pharmaceuticals given the potential for strong returns in the segment.

Medtech and related services

Section highlights

- Investor interest remained strong; total disclosed deal value rose, even as deal count fell
- Activity was driven by six buyouts valued at more than \$100 million
- PE investors faced stiff competition from corporate acquirers
- Popular segments included niche product categories, durable medical equipment and contract sterilization

Investors expressed considerable interest in the medtech sector in 2016, but PE activity was hampered, as it has been in years past, by strong demand from corporate acquirers and a dearth of available assets. Overall, disclosed deal value reached \$2.8 billion in 2016, up nearly 60% from the 2015 total of \$1.7 billion, but the number of announced deals fell to 37 from 47 in 2015. The uptick in deal value on a lower activity base was driven by six buyouts worth more than \$100 million, compared with two in 2015. However, the downward trend in megadeals continued; there were no deals valued at more than \$1 billion in 2016, compared with one in 2015 and three in 2014.

Corporate buyers showed themselves ready to pay premium prices for assets that would help them shore up existing product portfolios. In one notable example in Japan, Toshiba Medical Systems, which makes MRI, ultrasound and tomography scanners, caught the attention of PE investors, but the asset was ultimately purchased by corporate buyer Canon, where it will enhance Canon's existing medtech portfolio of radiography and ophthalmic equipment.

With corporate acquirers crowding into the normal sweet spot range for PE funds, PE investors focused on product niches less popular with corporate buyers. In the largest medtech buyout of 2016, PAI Partners acquired Atos Medical, a category leader in implants and prostheses for laryngectomy patients, from EQT for nearly \$1 billion. Bid on by many funds, Atos, based in Sweden, is a leader in a fast-growing but specialized area that offers limited cross-selling opportunities across other medtech product categories, thus attracting less attention from corporate buyers.

In another significant niche product acquisition, TPG acquired Beaver-Visitec International (BVI), a leader in ophthalmic surgical devices, from RoundTable Healthcare Partners for an undisclosed amount. BVI was formed in 2010 by the acquisition and combination of the ophthalmic businesses of Becton Dickinson (BD), Medtronic and Aspen Surgical. Although products in the ophthalmic category tend to be lower margined than those in some other medtech categories, the category benefits from strong demographic tailwinds as the US population ages and offers substantial opportunity for further consolidation.

Demographics also played a role in Clayton, Dubilier & Rice's (CD&R's) \$750 million acquisition of Drive DeVilbiss Healthcare, which was formed in 2015 through the acquisition of DeVilbiss Healthcare by Drive Medical. The company manufactures durable medical equipment (DME) such as wheelchairs, power scooters and

bariatric products. One area of uncertainty in DME concerns possible pressure to further trim Medicare reimbursement rates, but favorable demographic trends help offset this risk. There is also significant opportunity to drive consolidation in this segment.

In a notable medtech carve-out in 2016 that was not lost to a corporate buyer, Apax took a stake in BD's respiratory business. This deal was a follow-on to an earlier transaction. In 2014, BD acquired CareFusion, a wide-ranging medtech company, and then divested CareFusion's respiratory business, which was a noncore, slow-growing asset, to the joint venture with Apax.

Another medtech segment that saw continued deal activity in 2016 was contract sterilization services, a market that has scope for further consolidation. These companies provide sterilization and other services for OEMs. In Europe, Ardian acquired Ionisos, which provides cold sterilization facilities for medical device manufacturers. This deal followed another big contract sterilization transaction in 2015, in which Warburg Pincus took a majority stake in category leader Sterigenics.

Medtech deal activity was stronger in North America and Europe than in Asia-Pacific. In China, development of the medtech sector is a priority in the 13th Five-Year Plan, but potential acquirers continued to be stymied by a lack of scale assets. Across geographies, the biggest opportunities for medtech investors are likely to be those areas in which they can take a meaningful stake in a category leader or a platform asset that could be built into a category leader.

Healthcare IT

Section highlights

- Deal value and activity were strong, driven by the \$7.5 billion buyout of MultiPlan
- Investors viewed many HCIT plays as less subject to legislative and regulatory risks than taking direct stakes in payers and providers
- Valuations were high, prompting funds to take buy-and-build approaches and look for eventual exits to corporate buyers
- Popular sectors included data and analytics and alternate site IT

It was a banner year for HCIT deals, with a total disclosed value of more than \$15.5 billion in 2016; that's more than a four times increase from the total of \$3.5 billion in 2015.⁴ Activity during the year was about flat compared with 2015. Deal activity included both traditional technology companies as well as tech-enabled services firms that combine technology solutions with services offerings in order to meet the needs of their clients.

The HCIT sector included the biggest healthcare buyout of the year, which also happened to be a technology-enabled services asset: H&F, Leonard Green and GIC paid \$7.5 billion to acquire MultiPlan. There was a profusion of other large deals as well, with eight valued at more than \$100 million, compared with just two of that size in 2015. As in the past, most big HCIT deals took place in the US, the world's largest healthcare market.

Broadly speaking, funds see HCIT as a healthcare-light way to invest in healthcare—a segment that is relatively insulated from reimbursement changes. That helps explain why IT-oriented funds, not just healthcare-focused funds, have found HCIT attractive. Some funds brought both healthcare and IT experts into diligence processes to help identify creative ways to generate value.

Facing high valuations, funds actively sought category leaders with promising paths to expand into adjacencies, while others pursued assets with clear buy-and-build opportunities. Many funds took comfort in the increased activity by corporate buyers as a potential channel for exits. IBM's Watson Health division, for example, continued to build its HCIT portfolio in 2016 with the \$2.6 billion purchase of healthcare data company Truven Health Analytics from Veritas. That deal marked IBM's fourth major health-related acquisition since it launched Watson Health in April 2015.

Data was a big theme in the year's major deals. MultiPlan, the legacy business of which involves assembling provider networks for insurance companies, has developed, partly through acquisitions, into a data analytics company that draws insights from the millions of health insurance claims it processes. MultiPlan's recent history shows the potential for appreciation in healthcare data companies. Starr Investment and Partners Group bought MultiPlan in 2014 and reportedly earned a return of three times on the sale of the asset in 2016.

In another notable data and analytics deal (discussed in more detail in the payer and related services section), Veritas carved out the healthcare business of Verisk Analytics for \$820 million, rebranding the company Verscend Technologies. Verscend provides payers with revenue and risk analytics.

Some funds flocked to HCIT as a good alternative to buying directly into providers and payers, which were challenged by the uncertainty surrounding the future of the Affordable Care Act and proposed payer megamergers in the US. Regardless of what happens on the regulatory front, payers and providers will need to find ways to maximize their revenues and minimize expenses. As previously discussed, this trend helps explain the intense interest in Press Ganey, which provides services and solutions to its strong base of hospital customers and was taken private by EQT only a year after its IPO. Similarly, Imprivata, which provides IT security for hospitals and other providers, was taken private by Thoma Bravo.

Investors also showed interest in many revenue cycle management (RCM) companies and clinical IT firms. Bain Capital took a majority stake in Navicare, which markets software-as-a-service (SaaS) RCM solutions to healthcare providers. Riverside Partners bought a majority stake in Bottom Line Systems (BLS), a niche technology-enabled RCM company. In the clinical IT segment, Warburg Pincus took a stake in Intelligent Medical Objects, which supplies clinical interface terminology and mapping solutions to providers.

CD&R made a notable move in the value-based care segment by forming Agilon Health, a tech-enabled service company, through the merger of two management services organizations covering Medicaid and Medicare patients in California and Hawaii, respectively, one of which also included related third-party technology solutions.

Expanding beyond the crowded landscape for hospital IT, funds invested in IT firms that serve alternate site providers such as behavioral health. GI Partners joined with a corporate buyer, Allscripts Healthcare Solutions, to acquire Netsmart Technologies. Netsmart will merge with Allscripts' homecare software business, creating the world's largest post-acute care and human services technology company. In the urgent care segment, Warburg Pincus acquired a majority stake in DocuTAP, which offers electronic medical record (EMR), practice management, RCM and analytic solutions.

While most of the HCIT action involved payers and providers, investors also looked for IT solutions targeted at pharmaceutical companies, resulting in two large deals in the clinical trial segment. Nordic Capital and Novo bought ERT, the largest supplier of electronic solutions for patient-reported outcomes and clinical outcome assessments, which Genstar had acquired and taken private in 2012. In the other pharma IT transaction, Cinven acquired BioClinica, a supplier of tech-enabled services for clinical trials.

Among the few non-US HCIT deals of 2016, Canadian fund Novacap invested in Montreal-based Intelrad Medical Systems, which makes imaging software, and Affinity Equity Partners carved out Medical Director, a leader in clinical and enterprise solutions for physicians, from Australia's Primary Health Care.

While many of the year's HCIT deals involved category leaders, some funds hunted for contrarian plays, or distressed assets in need of a turnaround. Unfortunately, many of these assets still have high valuation expectations that continue to make it difficult for investors to balance the inherent risk with the potential returns.

⁴ For the purposes of this report, all HCIT deals have been allocated to the primary sector they support—payer, provider, pharma or medtech—and are reflected in the deal values and volumes for those sectors as well as in the aggregate data referenced in the HCIT section.

Corporate M&A

Section highlights

- Healthcare M&A was active across all sectors, despite a drop-off in overall announced deal value
- Companies continued to make fill-in acquisitions in pursuit of category leadership, and they divested assets in order to prune portfolios⁵
- There was just one corporate deal in excess of \$20 billion as megamergers stalled over antitrust concerns in the US
- Corporate buyers offered strong competition to PE buyers, accounting for 83% of all healthcare deals done in the sweet spot range for larger PE funds between \$500 million and \$5 billion

Following two years of frenetic deal making, corporate acquirers paused in 2016 to integrate their purchases. After setting records in 2014 and 2015, healthcare M&A dropped sharply in 2016. Total announced corporate deal value fell to \$261 billion, down from \$523 billion in 2015 (*see Figure 8*). While activity declined for deals of all sizes, the plunge was most noteworthy in megamergers (*see Figure 9*). There was just one deal in excess of \$20 billion in 2016, compared with five in 2015.

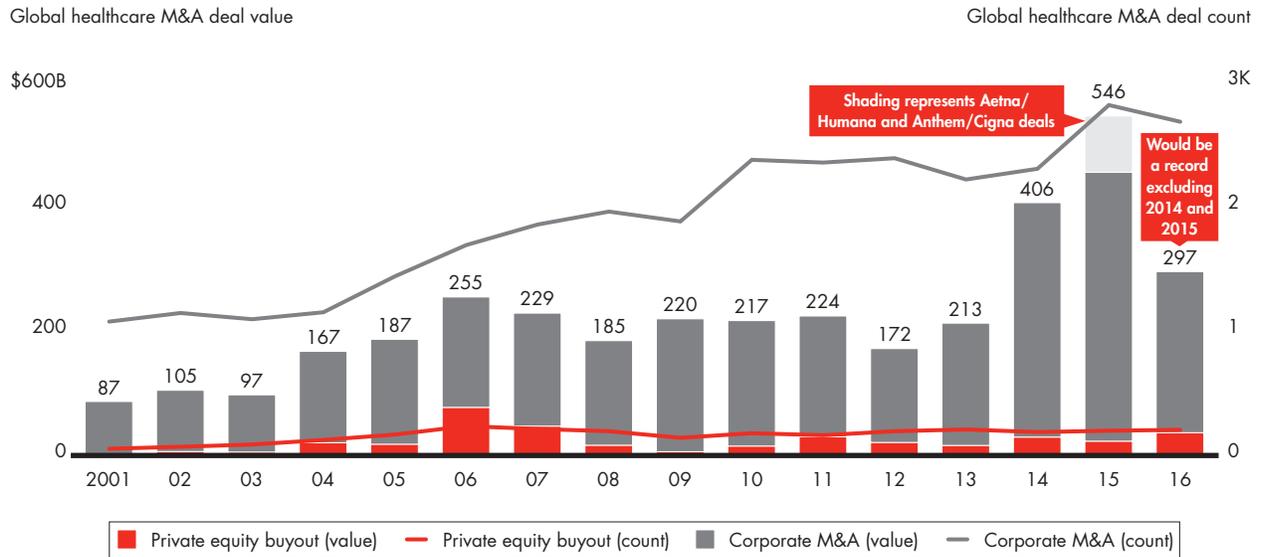
Part of the explanation for the falloff in corporate megadeals was the regulatory environment in the US. Two megamergers announced in 2015 between health insurers—Anthem/Cigna and Aetna/Humana, collectively valued at about \$91 billion—stalled due to antitrust concerns. Two pharmaceutical giants, US-based Pfizer and Ireland-based Allergan, called off their proposed \$160 billion marriage after the US Treasury clamped down on tax inversion. Meanwhile, in the pharmacy sector, Walgreens Boots Alliance's planned acquisition of Rite Aid, which was announced in 2015, remained under review by the Federal Trade Commission.

Despite the dearth of megamergers, corporate deal makers were busy across all healthcare sectors. Even with the overall decline in deal value, 2016 was still the third-highest year on record for corporate healthcare M&A. It was a year for buying and building, pruning and carving out, and forming partnerships and joint ventures. Overall, corporate buyers proved again to be formidable competition for PE bidders, accounting for 83% of total deals announced in the \$500 million to \$5 billion size range, the sweet spot for large PE funds.

In medtech, companies took steps to build up category leadership and trim tail positions. In the largest healthcare merger of 2016, Abbott, a leader in coronary stents, acquired St. Jude Medical's interventional cardiac diagnostic business for \$25 billion. Abbott also sold its noncore optical business to Johnson & Johnson for \$4.3 billion.

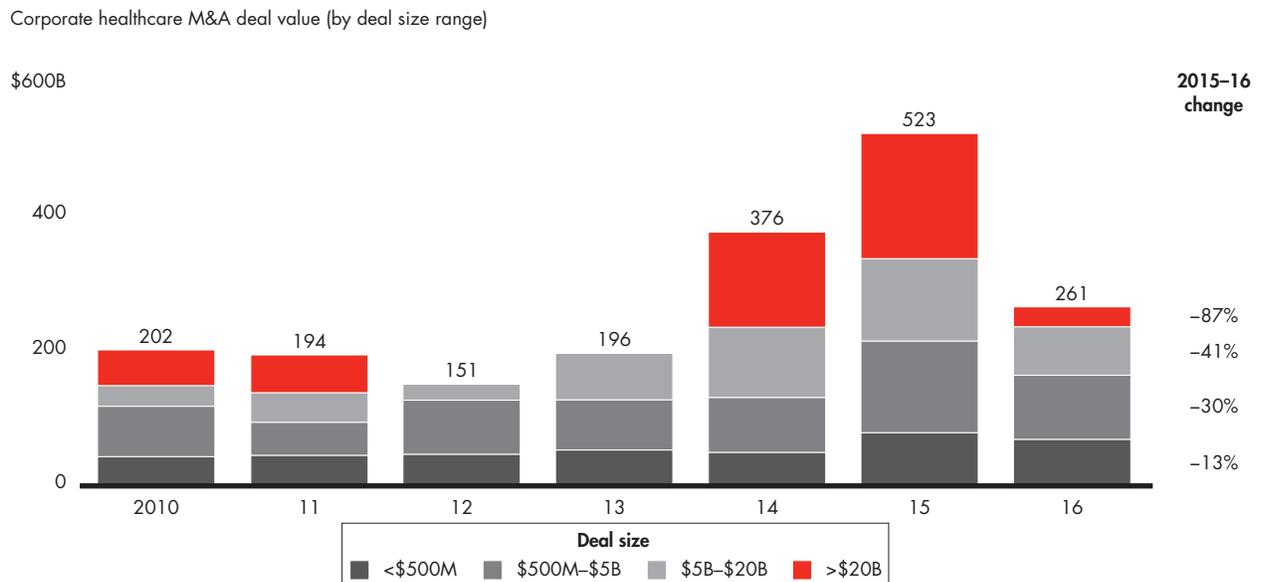
In Japan, consumer electronics giant Canon won the bidding for Toshiba's \$5.9 billion carve-out of its Medical Systems unit, a leading maker of diagnostic imaging equipment. Others vying for Toshiba Medical Systems included Konica Minolta, Fujifilm, and PE firms Permira and KKR. In Europe, Sweden's SCA acquired Germany's BSN Medical for \$2.8 billion from EQT in an effort to forge a leading health and hygiene solutions business spanning SCA's incontinence products and BSN's wound care products.

Figure 8: After two blockbuster years, healthcare M&A fell, but it was still the third-largest year on record



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; mergers between Aetna/Humana and Anthem/Cigna announced in 2015 remained stalled through 2016 due to antitrust concerns
Sources: Dealogic; AVCJ; Bain analysis

Figure 9: Although corporate M&A in healthcare declined across all size categories, the drop-off in megadeals had the most impact



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

In pharma, major players continued to build their drug pipelines through acquisitions. Even though Pfizer scrapped its planned union with Allergan, the American pharma company made several sizable acquisitions. It bought Medivation for \$1.4 billion to obtain that company's prostate cancer treatments, acquired Anacor for \$5.2 billion for its roster of eczema drugs and purchased AstraZeneca's small-molecule anti-infective business, creating a leadership position in the category. Allergan, meanwhile, made three deals of its own to build up its pipeline: Heptares (\$3.3 billion), Tobira (\$1.7 billion) and Vitae Pharmaceuticals (\$0.6 billion).

In other noteworthy pharma deals, AbbVie acquired Stemcentrx, a venture capital-backed start-up with a clinical-stage cancer drug. The Stemcentrx deal marked one of the five largest sales ever by a VC-backed company.

In an example of portfolio pruning, Biogen in early 2017 spun off its hemophilia business into a standalone, publicly traded firm called Bioverativ. The spin-off allows Biogen to focus on expanding its category leadership in neurology into Alzheimer's, while Bioverativ can have a single-minded focus on hemophilia. Similarly, Takeda Pharmaceutical sold off its stake investment in Wako Pure Chemical, a reagent manufacturer, as part of its strategy to focus on core pharmaceutical categories.

In the pharma services segment, Europe-based Lonza, a biotech and specialty chemicals company, acquired US capsule maker Capsugel from KKR for \$5.5 billion. Lonza's pharmaceutical and biotech division provides contract development and manufacturing organization (CDMO) services to pharmaceutical firms, and the Capsugel acquisition builds out the company's product and services portfolio.

Consolidation continued in the provider sector as companies built scale and expanded along the value chain. PPM and surgical center operator AmSurg merged with rival Envision Healthcare. That transaction followed two failed attempts by AmSurg to merge with TeamHealth (which ended up being sold to Blackstone in a \$6.1 billion buyout). DaVita expanded its physician network HealthCare Partners through the acquisition of WellHealth Quality Care, a Nevada-based medical group.

Walgreens Boots Alliance, with its proposed purchase of Rite Aid on hold, continued its expansion across the pharmaceutical value chain by entering long-term strategic alliances with two PBMs: Prime Therapeutics and United-Health's OptumRx. In Europe, Fresenius, Germany's largest hospital group, acquired IDCSalud, Spain's largest hospital chain, for €5.8 billion from CVC and other investors.

All signs point to robust healthcare M&A activity in 2017 and beyond. Big Pharma is likely to continue to stoke its product pipeline and research capabilities through strategic acquisitions. Both pharma and medtech will aim to further shape their portfolios with the goal of achieving category leadership in targeted markets. Payers and providers will also seek to build category leadership in existing businesses and make moves in other parts of the value chain, especially as integrated care blurs the line between the two sectors. Overall, corporate buyers will continue to offer keen competition for healthcare PE firms, but they'll also serve as a good channel for PE exits, as well as possible partners for PE funds in large, complex deals.

5 For more detail on Bain's perspective on the value of category leadership and portfolio focus, please see the Bain Brief "Focus Matters: How Biopharma Can Reward Shareholders."

Spotlight: What corporate acquirers can learn from private equity's approach to commercial due diligence

Almost by definition, a PE firm thinking about acquiring a target in a particular healthcare market will know less about that market than a corporate buyer who does business in it every day. PE funds, even those that specialize in healthcare, look at many deals across multiple sectors every year. They often don't start out as experts.

As a result, PE firms often bring more rigor to the process of commercial due diligence, an area in which corporate business development departments often fall short. PE firms dig deep into a potential target's position in the marketplace. Even when PE investors have considerable experience in a particular industry, they frequently call in outside experts to test and validate their assumptions.

PE firms take a "clean sheet of paper" approach to commercial due diligence. Unclouded by their own preconceptions, they develop a custom-fit thesis for why a particular acquisition may succeed and why it may fail. They are rigorous and unsentimental in their diligence, and they force themselves to clear high hurdles before they commit to a deal. They expect to pass on more deals than they pursue and to pursue more deals than they can successfully consummate at appropriate valuations.

In contrast, corporate business development teams often feel pressure to close deals in order to meet revenue targets and can be overly reliant on internal data in their market analysis. While their company's internal market data can be of tremendous value in commercial due diligence, giving it too much weight can obscure complementary, and perhaps conflicting, sources of information.

Here are a few lessons corporate acquirers can learn from PE investors:

- **Develop a bespoke deal thesis for every asset.** Every deal should meet the "four Cs." The thesis should be *confirmable*, meaning that it articulates specific, measurable goals to be tested in the diligence process. It should be *chronicled*—that is to say, clearly codified in writing. You should reach *consensus*; the organization should be aligned behind the same thesis. And the thesis should identify how the deal will *close the gap*, clearly filling a growth or capability need for the company.
- **Form an unbiased view of the market.** Evaluate the market independent of your role in it. Research growth and profitability trends and next-generation technologies. Spend time in the field interviewing customers, suppliers and competitors, ideally in a blinded fashion. Ask yourself whether you'd enter this market if you weren't already in it. If the answer is no, ask yourself if you should divest instead of acquire in this market.
- **Know your target.** Don't be blinded by potential synergies with your existing businesses. Know how the asset would stand or fall on its own strengths and weaknesses, even if your company is already active in that particular market. Then be prudent in the way you project potential synergies as they are often harder to achieve than you expect.

- **Be clear on your deal breakers.** Think about things that could go awry, including financial underperformance, regulatory issues, red flags from audits and pension liabilities. Don't succumb to deal fever. Always be on the lookout for developments that could cause a deal to fail, and be willing to walk away.
- **Think ahead.** Know what you want to do if you win the asset. Build a value-creation plan, and make sure you have the resources and capabilities in place from the start to support it. For corporate buyers, integration is key. Plan ahead for any carve-outs or divestitures needed to keep the organization focused on the asset's core activities. Remember: You can't fix a bad deal thesis with good integration, but you can certainly wreck a good deal thesis with bad integration.

For both corporate acquirers and PE investors, the key to a successful transaction is effective commercial due diligence. Corporate business developers can pick up a few pointers from PE investors—even if they happen to be vying with each other for the same choice asset.

Exit activity

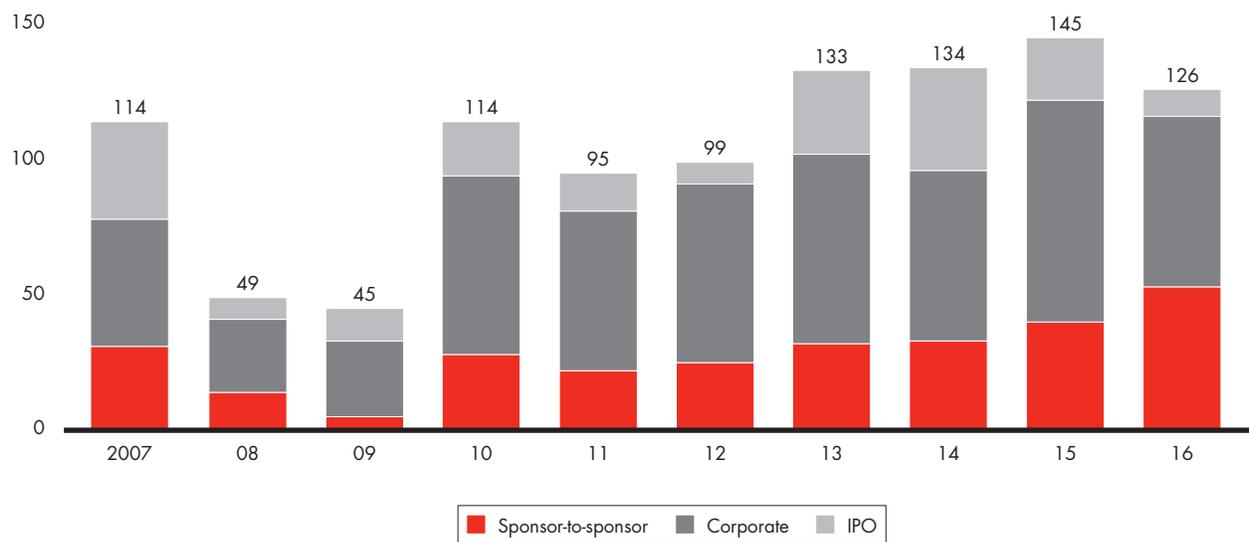
Section highlights

- The number of exits fell modestly in 2016, following a record-setting year in 2015
- Sponsor-to-sponsor exits grew as investors took advantage of high multiples
- While corporate exits declined as a share of the total, there were several notable deals
- IPOs decreased for the second straight year

After setting a record in 2015, the number of healthcare exits fell modestly in 2016, to 126, down from 145 (see Figure 10). Despite the drop-off, funds were able to achieve significant exits with expansive multiples. While sales to corporate buyers still made up the bulk of the exits, their share of overall pool fell to 50% in 2016 from 57% in 2015, a reflection of the overall slowdown in corporate healthcare M&A activity. IPO activity also fell as a share of total exits, from 16% in 2015 to 8% in 2016. At the same time, sponsor-to-sponsor exits grew from 28% to 42% of the total. As in prior years, more than half of all exits took place in North America (see Figure 11).

Figure 10: There was an uptick in sponsor-to-sponsor exits; corporate exits and IPOs fell

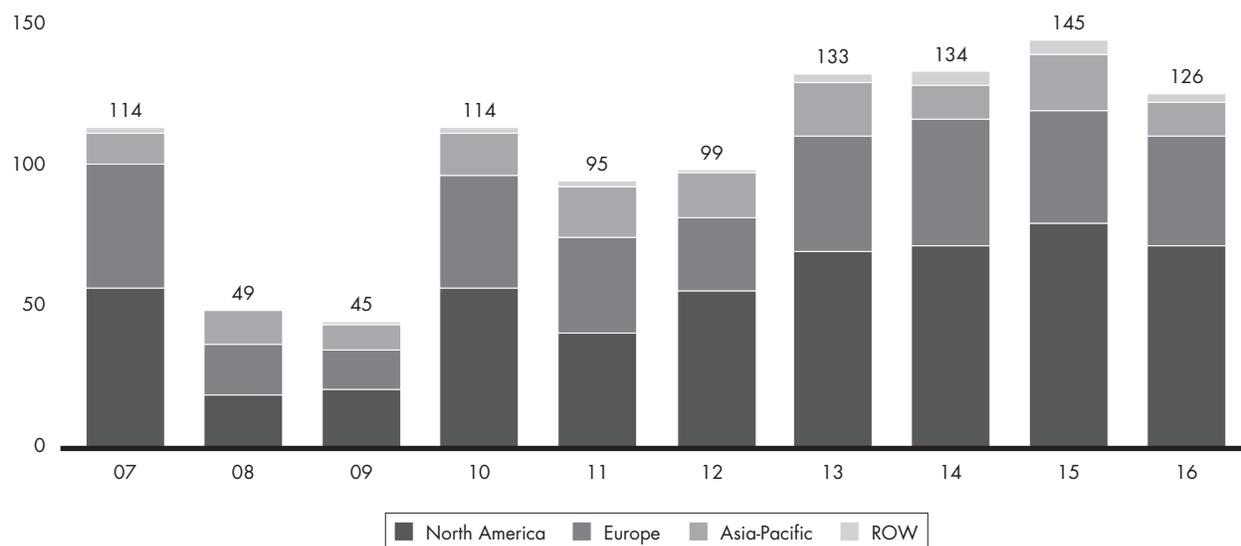
Global healthcare buyout-backed exits (by count)



Note: Excludes bankruptcies
Source: Dealogic

Figure 11: Exit activity decreased overall in 2016 and in every region

Global healthcare buyout-backed exits (by count)



Notes: Excludes bankruptcies; ROW stands for rest of the world and includes Central and South America, Africa and the Middle East
Source: Dealogic

Sellers who are ready to exit generally prefer corporate buyers, when that is an option. Corporate buyers, which often benefit from access to relatively inexpensive capital, can justify paying a higher price for an asset because of the strategic synergies they hope to gain from acquiring it. When there is no corporate buyer in the mix, sellers have a choice between a sponsor-to-sponsor exit and an IPO. In the current environment, it's not surprising that sponsor-to-sponsor exits have been gaining ground. Selling an asset outright to a sponsor allows the seller to lock in gains from a high multiple whereas an exit via an IPO can leave the sellers exposed to fluctuations in the public markets as they sell down their stakes.

For buyers, sponsor-to-sponsor deals historically have performed as well as primary investments, often giving another PE fund with a different perspective a "second-act" chance to realize gains from the same asset. For example, the previously discussed MultiPlan deal was the asset's second sponsor-to-sponsor exit in three years and the largest healthcare exit in 2016.

Some funds opted for partial exits, cashing in on some of their gains but continuing to hold a stake in their asset. For instance, Audax Private Equity retained a minority stake in Advanced Dermatology after selling most of its holding to Harvest Partners. In another example discussed earlier in this report, THL retained a meaningful share in inVentiv, a company that supplies clinical development services to the biopharma industry, after selling a significant stake to Advent.

While the market for corporate exits wasn't quite as buoyant as it has been in prior years, sellers that were able to find corporate buyers still managed to secure top dollar for their assets—sometimes after holding

their assets for only a few years. For example, as previously discussed, Veritas bought healthcare IT firm Truven Health Analytics in 2012 and sold it to IBM in 2016 for a substantial return on its initial equity investment. In another example, CVC sold Spanish hospital group IDCSalud to Fresenius for €5.8 billion in the year's second-largest exit. CVC acquired the asset in 2011 and pursued a buy-and-build approach to grow the asset, including merging it with rival Quiron in 2014. KKR locked in the year's third-largest exit with the previously discussed sale of biopharma services firm Capsugel to Lonza for \$5.5 billion after acquiring the asset from Pfizer for \$2.4 billion in 2011.

Exits via IPOs declined for the second consecutive year. There were just 10 PE-backed IPOs in 2016, representing 8% of total exits, down from 23, or 16%, in 2015. As noted, sellers opted for corporate and sponsor-to-sponsor exits when those choices were available. In addition, there was overall volatility in the public markets early in the year and continued turbulence for some healthcare segments throughout the US presidential election. Still, there were some notable healthcare IPOs. In the UK, Avista and Nordic Capital took public wound care firm ConVatec Group in an IPO that raised \$1.9 billion and valued the company at more than \$5 billion.

Spotlight: Sources of value creation in healthcare assets

Healthcare has long been a winning investment for PE funds. It has ranked among the top three industries in terms of returns every year since 2011, according to data from Cambridge Associates.

Across private equity, average EBITDA acquisition multiples have been creeping up over the past five years, and healthcare is no exception. But while much of healthcare's recent gains can be explained by the steady expansion of multiples, that's only part of the story.

To find out what was driving the growth in the enterprise value of healthcare assets, we studied 22 successful healthcare deals from the past decade—that is to say, companies that had higher EV at exit than at entry. To be included in the analysis, the targets had to have disclosed data on EBITDA and EV for both acquisition and exit and had to have been acquired and exited in the period from 2007 to 2016.

We found that multiple expansion occurred in more than three-quarters of these deals. For more than half of the deals, the multiple increased by three or more turns.

But it wasn't merely multiple expansion that drove the growth in EV during the period. In fact, the share of EV growth in the assets we studied that resulted from EBITDA growth was three times higher than the share attributable to multiple expansion (*see Figure 12*). Half of the firms we studied posted a compound annual growth rate (CAGR) in EBITDA of more than 20%. While organic growth played a role, the sky-high EBITDA CAGR largely resulted from significant levels of transformational M&A. PE funds are buying platform healthcare assets, then enhancing them through subsequent fill-in purchases, carve-outs and, in some cases, bolt-on acquisitions that take the company into new lines of business.

This kind of pinpoint M&A can have the additional benefit of helping acquirers effectively reduce their acquisition costs over time. While buyers may pay a high multiple for a category leader, they can buy smaller, fill-in targets at substantially lower multiples, thereby buying down their overall blended multiple during the period in which they own the original asset.

There is, however, a cautionary note to this growth story. Absolute growth in EBITDA, whether it's from organic activity or M&A, doesn't necessarily mean the company's margins are improving. In fact, a Bain analysis found that companies frequently missed their margin targets.

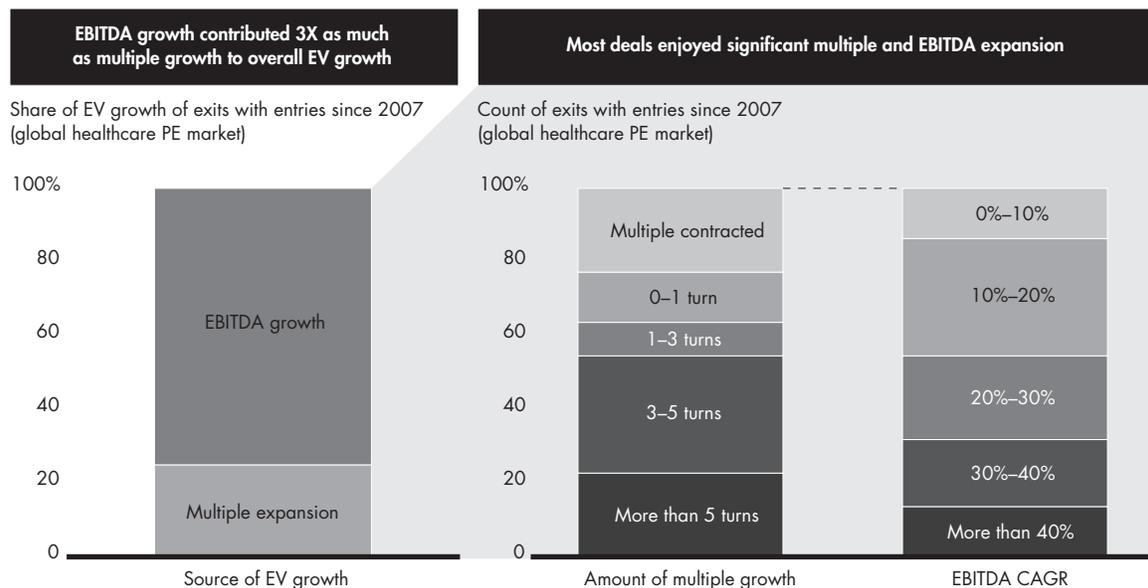
Bain analyzed a subset of deals (in healthcare as well as in other industries) that took place after the global financial crisis.⁶ The analysis found that while most of the companies met their revenue growth targets, more than 60% missed their EBITDA margin projections (luckily, higher-than-projected exit multiples made up for the shortfall in many cases). In healthcare, these margin misses can come from a variety of sources, including:

- Reimbursement cuts—even with heavy diligence, surprises can happen.

- Labor costs—physician and nursing shortages are driving up clinical wages, and even HCIT firms face shortages of qualified hospital salespeople and engineering staff.
- Commoditization—as several healthcare segments have matured, firms have lost pricing power as their products and services have become more commoditized.
- Dilutive M&A—in the land grab for scale, investors face two challenges: overly optimistic assumptions for cost synergies and distraction from the core business.

As we reach the point at which exit multiples may finally peak, margins will be an increasingly important component of value creation. It will be incumbent upon all deal makers, healthcare investors included, to focus on the fundamentals to make sure that they have a viable strategy for reaching their goals for both revenue and margins.

Figure 12: Multiple expansion and EBITDA growth both contributed substantially to healthcare PE returns



Notes: Analysis based on 22 successful exits (that is, those with EV growth), with entry and exit during the 2007–16 decade; only includes deals that disclosed data on EBITDA and enterprise value for both acquisition and exit; for left-hand chart, covariance is split proportionally between the two segments
Sources: Dealogic; Preqin; Bain analysis

6 Please refer to Bain's *Global Private Equity Report 2017* for a detailed discussion of this analysis.

2017 and beyond

Investors can expect more volatility in 2017. Given the length of the current economic recovery, prudent fund managers are building recession scenarios and currency volatility into their projections for their current and future investments. This means including scenarios in deal models that anticipate the compression of multiples when it comes time to exit. The year ahead is likely to be clouded by continued legislative and regulatory uncertainty, particularly in the US as the Trump administration and Congress address the future of the Affordable Care Act.

As the turmoil continues, so will the attractiveness of healthcare as a safe-haven investment. With an aging and ailing global population, demand for healthcare services will rise regardless of whether there are economic headwinds, tailwinds or crosswinds.

That's not to say all healthcare investors will have smooth sailing—there are choppy waters to navigate. Globally, there is more investor interest in healthcare than there are assets available. Traditional healthcare investors are vying not just with their usual rivals but also with corporate buyers, generalist PE firms, IT investors and institutional investors, some of which have lower return hurdles than PE funds. Investors of all types enter 2017 still sitting on mountains of dry powder—a legacy of years of low interest rates. As they move to deploy it, they're likely to keep bidding up prices. In the US, the uncertainty surrounding the ACA makes it difficult to value assets in several segments, especially those with direct exposure to patients who have insurance through the exchanges or Medicaid.

With so much capital chasing a limited number of choice deals, more investors may opt to pursue smaller, less competitive targets. And while the US, the largest healthcare market, will continue to attract deal makers from around the world, the high valuations of American assets may prompt more investors, including those based in the US, to take a fresh look at other regions.

In this environment, deal makers will need to continue to be creative. We expect to see more consortium arrangements. Funds that want to pursue sizable targets but that don't want any one asset to loom too largely in their portfolio will team up with other investors. We're likely to see an increase in partnerships between PE funds and corporations, particularly in the pharma sector, which may be ripe for carve-outs after the wave of megamergers over the past several years.

In the US, we can expect to see a continuation of the surge in P2P deals—that is, as long as the mismatch persists between public and private valuations and debt financing remains readily available. That trend may spread to Europe or other geographies where there's a public-private disconnect. If debt market conditions tighten and if public and private multiples remain mismatched, we could see a resumption of PIPEs as an alternative to P2P buyouts.

However PE funds shape their deals, they're likely to show sustained interest in healthcare-light assets that can thrive amid economic and regulatory uncertainty, including HCIT companies, tech-enabled service companies, retail health providers and outsourced services such as CXOs and PPMs.

Still, given the intense competition for healthcare-light assets, investors may take a new look at the healthcare-heavy area. For some healthcare-heavy assets, relatively attractive multiples combined with the potential for EBITDA growth could exceed the uncertainties surrounding policy and reimbursement.

We believe that category leaders will continue to command a premium. Category leaders are better positioned to weather an economic downturn. As payers and other purchasers of healthcare services winnow down their suppliers in the name of efficiency, category leaders are more likely to make the cut. Investors interested in pursuing buy-and-build strategies will prize category leaders as those best situated to roll up smaller, weaker competitors.

There is an open question about what will happen to acquisition multiples going forward. In the near term, multiples may continue to expand. Healthcare is a large, growing and essential industry. Much of it remains fragmented and inefficient, presenting rich opportunities for consolidation. And a growing number of investors, some with lower return hurdles and significant amounts of dry powder, want to acquire healthcare assets. Still, the logic of financial cycles suggests that healthcare acquisition multiples won't expand forever, that they're destined to plateau or contract at some point. As interest rates rise and financing becomes more expensive, the ardor may cool.

In this climate, it will become even more essential that investors contemplating acquisitions have a clear thesis for increasing revenue, either through organic growth or bolt-on M&A, as well as a plan for improving margins through operational efficiencies. Achieving margin growth may become progressively more challenging in a world of reimbursement and pricing pressure.

In volatile times, PE funds will continue to see healthcare as a safe port, even when the turbulence has a direct impact on the industry itself. In a crowded, expensive and unsettled landscape, though, investors may need to look harder to find targets that have the capacity to deliver meaningful returns. Here are a few questions to keep in mind when you're seeking healthcare investments in 2017 and beyond:

- **Have you considered broadening your focus within healthcare?** With perhaps fewer deals to be had in some of the most popular segments, have you looked at assets that are outside your comfort zone, including those that are smaller, healthcare-heavy or in other regions?
- **Have you run the scenarios?** While you can't predict exactly what will happen with the ACA or with any of the other macro forces that could reshape healthcare around the globe, you may be surprised to find that their impact is not as bad as you originally expected. Have you developed and tested plausible scenarios and made sure your deal thesis holds up in all of them?
- **Have you validated your value-creation plan during the diligence process?** Have you spent the time and resources necessary up front to ensure you have a credible plan to drive both margin and EBITDA growth?
- **Have you thought creatively about your deal?** Partnerships, spin-offs and M&A can all contribute to de-risking and strengthening the economics of a deal. Have you thought about the unique angles you can bring to a deal?

As a long-term bet, healthcare is hard to beat. The industry makes a product that every one of us needs. For PE funds, the best approach is to research targets thoroughly, structure deals thoughtfully and pick those assets that have the potential to grow regardless of which direction the economy takes. 

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