KPMG

# Investing in a future transformed by the pandemic

## 2022 Healthcare and Life Sciences Investment Outlook

kpmg.com

# Contents



# Executive summary

Welcome to the KPMG 2022 Healthcare and Life Sciences Investment Outlook, an in-depth look at the dynamic trends in healthcare and life sciences (HCLS) for 2021 and an outlook for 2022. We analyzed how nine subsectors are using M&A to address competition, capture shifting demand, and pursue innovation in medical and clinical science, and in business/operating models. These insights are based on extensive global research into the deal and market environments, our annual survey of corporate and private equity deal makers across the subsectors, and the experience and knowledge of our HCLS leaders, who work with our clients on their most pressing deals, strategy, and implementation worldwide.

2021 was another year in which the COVID-19 pandemic had enormous impact on organizations across healthcare and life sciences. The Delta and Omicron variants kept hospitals and healthcare systems worldwide focused on the COVID-19 battle. Biopharma and diagnostics companies have developed and delivered the vaccines, therapies, and tests to control the spread of COVID-19 and treat patients. Despite the hard work and success of these systems and companies, the secondary effects of the pandemic—labor shortages, rising wages, and inflation—continued to strain providers. Supply-chain bottlenecks were a challenge for manufacturers of drugs and devices. As cross-border transport continued to be affected, companies also relied more on local and regional supply.

At the same time, in mounting the response to COVID-19, HCLS players made important progress. The scramble to control the pandemic over the past two years has accelerated advances in science and introduced new methods for rapidly developing and testing new therapies and diagnostics. These streamlined approaches have set new expectations for how quickly new molecules and biologics can go from lab to patient use, creating new opportunities for biopharma, biopharma services, and diagnostics companies. Telehealth has also evolved rapidly during the pandemic, enabling new delivery models across healthcare, from behavioral health to dermatology to virtual clinical trials.

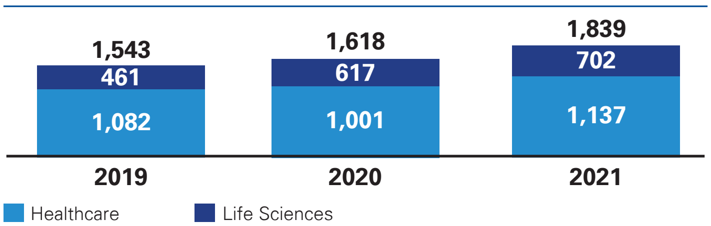
M&A across both healthcare and life sciences bounced back with a vengeance after the Q2'20 pandemic lockdown and remained strong in 2021.[1] In 2021, particularly in the first half, deal making was hectic across HCLS. For the year, there were 1,839 deals (not counting joint ventures, minority investments, and venture funding), compared with 1,618 in 2020 and 1,543 in 2019 (Exhibit 1). No quarter matched the peak of Q4'20, but in 2021 the average number of deals per quarter was higher than in prior years; in 2021, the average was 460 transactions per quarter, vs. 405 in 2020 and 386 in 2019 (Exhibit 2).

The pace of deal making slowed toward the end of the year, but remained above pre-pandemic levels. We believe the slight downward trend was the result of companies executing on their closed deals, rather than being in market doing more transactions.

The drivers of M&A remain in place, particularly in life sciences where companies are compelled to use M&A to sustain innovation and replace lost revenue from maturing products. A total of 702 acquisitions in life sciences, with a value of more than $280 billion, were announced in 2021 (Exhibit 3). Value was sharply up from 2020 and nearly matched the level of 2019, when value was inflated by megadeals.[2] In the past two years we have seen far more transactions and few blockbusters.

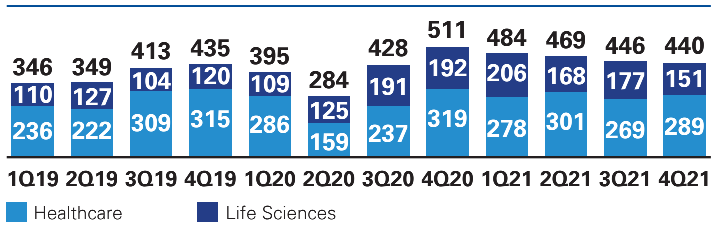
In healthcare, hospital transaction volume jumped by nearly 27 percent. Healthcare IT was the No.2 HCLS subsector (behind biopharma) and ended the year with the blockbuster deal by Oracle to pay $28.3 billion for Cerner, underscoring how HCLS data has become a crucial currency.[3]

**Exhibit 1. Another big year for HCLS deals**




Source: Informa, CapitalIQ. Includes only M&A transactions, not minority investments, partnerships, etc.

**Exhibit 2. Sustained momentum**



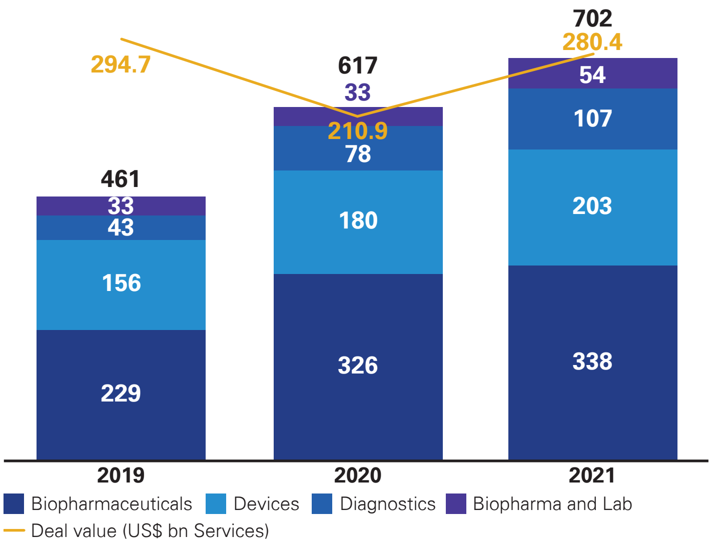

Source: Capital IQ

[1] Data cited in this report are from public sources and may not be complete.

[2] Source: Angus Liu, "The top 10 largest biopharma M&A Deals in 2019," FiercePharma, January 6, 2020

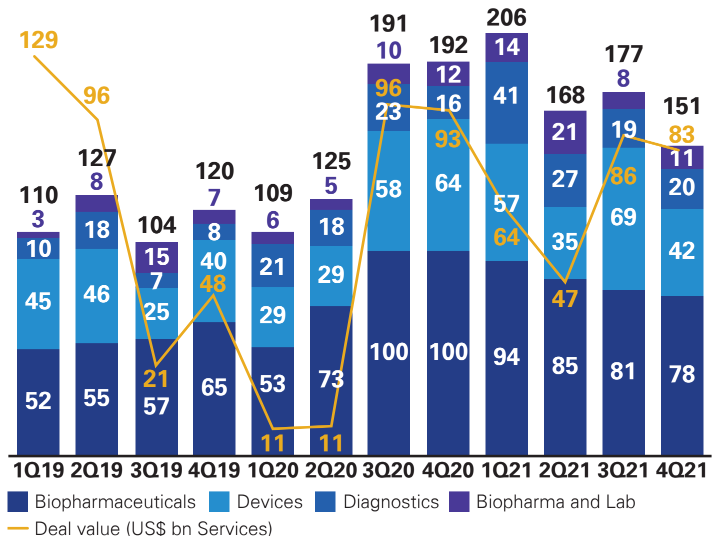
[3] Source: Jessica Bursztynsky, "Oracle to buy medical records company Cerner in its biggest acquisition ever," CNBC.com, December 20, 2021

### Exhibit 3. Life Sciences acquisitions, 2019-21



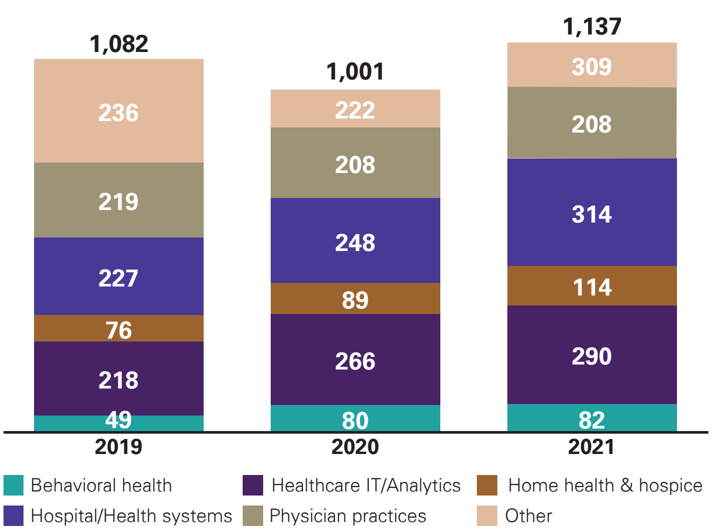

Source: Informa, KPMG analysis

### Exhibit 4. Life Sciences acquisitions by quarter, 2019-21




Source: Informa, KPMG analysis

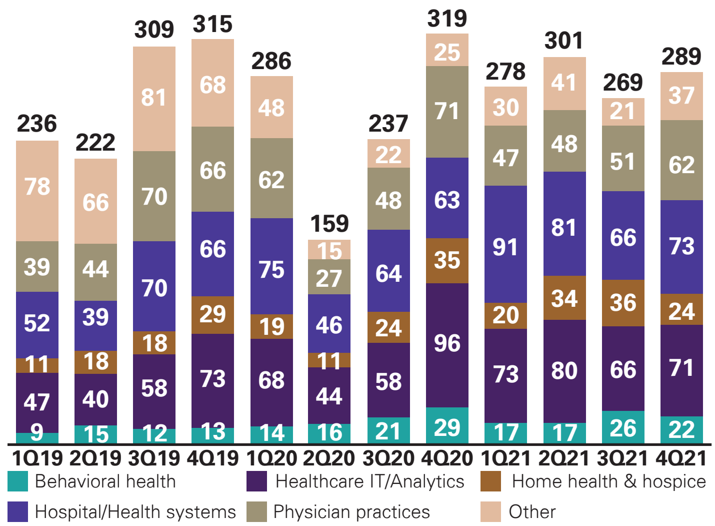
### Exhibit 5. Healthcare acquisitions, 2019-21




Note: Other includes Dental Practice Management (DPM), Healthcare Staffing, Long Term Care.

Sources: CapitalIQ and Thomson Reuters, KPMG Analysis

### Exhibit 6. Healthcare acquisitions by quarter, 2019-21




Note: Other includes Dental Practice Management (DPM), Healthcare Staffing, Long Term Care.

Sources: CapitalIQ and Thomson Reuters, KPMG Analysis

## The year ahead

We are bullish about HCLS M&A in 2022. With investor vision and appetite still strong, we are confident that volumes will continue to soar. So are our survey respondents: citing low cost of capital and internal pressure to deploy capital, about 70 percent of respondents say they expect to increase their M&A activity in 2022. More than half of PE investors say they will do at least 10 percent more deals (Exhibit 7).

There are potential headwinds, of course. The two biggest concerns for the year ahead among survey respondents are continuing uncertainty about the impact of COVID-19 and continuing competition for a diminishing supply of high-quality or innovative targets.

With both positive momentum and the competitive stakes so high, companies with the most knowledge, the greatest experience targeting innovative assets—and those that employ rapid and thorough due diligence—can prevail in this deal market. These are the players who are most likely to capture more than their fair share of deals and be better positioned for the journey ahead.

As 2022 unfolds, we will continue to uncover the trends driving M&A in these dynamic businesses and bring you quarterly updates on our evolving industry. Stay tuned.

### Exhibit 7. Deal volumes are expected to grow in 2022

**Q13. By what magnitude does your firm plan to increase or decrease M&A deal activity in 2022 compared to 2021, as measured by number of transactions?**

# Subsector analyses

## Subsector overview highlights

### Life Sciences

- **Biopharma.** In 2021, biopharma deal making was marked by portfolio-shaping divestitures and investments in early-stage innovations. A major focus was smaller, more innovative long-term investments: there were more deals and few blockbusters. Increasingly, buyers seeking earlier-stage, high-risk/high-valuation assets are using creative deal structures and milestone-based payments to mitigate risk. (See page 7)
- **Diagnostics manufacturers.** The business soared in 2021, largely because of sustained COVID-19 testing. Deal volume outpaced 2020 by more than 60 percent. Acquisitions were focused in three key areas: oncologic genetic testing and liquid biopsy, automated multiplex molecular diagnostics, and portable rapid point-of-care testing. (See page 11)
- **Medical devices.** It was a volatile year, as COVID-19 cases surged and subsided with waves of new variants. The outbreaks drove demand for PPE, respiratory devices, and consumables, but also limited elective procedures. (See page 17)
- **Biopharma and diagnostic lab services.** Rapid growth was driven by high utilization and inflows of capital, accelerated clinical trials, and digitization of commercial and medical communications. Many deals reflect the convergence of biopharma services and diagnostic services, as companies in these subsectors build more comprehensive portfolios. (See page 20)

### Healthcare

- **Healthcare IT.** The sector is maturing and attracting more interest from broader investment classes (including large buyout firms), as well as traditional growth-focused investors. A major focus of deals in 2021 was middle-office systems, with many acquisitions in consumer engagement, telehealth, network management, and claims repricing. (See page 24)
- **Hospitals and health systems.** Profitability declined in 2021 due to the pandemic resurgence, which curtailed elective surgeries and contributed to an acute labor shortage and rising labor costs. Yet deal volumes rose by more than 26 percent, with investments in physician practices, infrastructure, technology, and other growth drivers. (See page 27)
- **Behavioral health.** Demand for services continues to grow, partly due to the effects of the pandemic. Payers and employers increasingly recognize the long-term costs of unaddressed behavioral health issues. Grants and public funding for services increased, and the transition to telehealth and virtual visits reduced cancellations and no-shows. These factors helped sustain deal acivity in 2021. (See page 31)
- **Specialty physician practices.** Demand for specialist visits, elective procedures, and downstream services remained depressed by the pandemic. Deal making in specialty practices was focused on consolidation, back-office optimization, and expansion into value-based payment initiatives. (See page 33)
- **Home health and hospice.** The COVID-19 pandemic continued to have a mixed impact, raising the need for home care, for example, but reducing demand for hospice care. Deal volume rose by 28 percent in 2021, driven by demographic factors and the promise of operational efficiencies from consolidation. (See page 36)

# Biopharma: Another record year for deal making

Deal making in biopharma was very active in 2021, with a record number of deals announced. Overall deal value, however, was down, reflecting the trend toward smaller deals focused on innovation. We see great interest in potentially transformative technologies such as mRNA, RNAi, and "one-and-done" gene therapies, as well as antibody platforms that allow companies to develop novel therapeutics.[4]

At the same time, large biopharma companies continue to sell older noncore pipeline assets and lower-performing commercial products, to free up capital to develop or invest in pre-revenue, cutting-edge products with significant future potential.

In 2020 and 2021, deal volume was dominated by small to midsize acquisitions, partnerships, licensing transactions, and strategic R&D deals with innovative start-ups. Post-deal integration challenges remain a major risk factor in pursuing these opportunities, requiring merging firms to undertake extensive due diligence prior to deal close.

## How biopharma fared in 2021

In 2021, the volume of biopharma deals increased by about 4 percent compared with 2020. Total deal value for biopharma was $142 billion, below the blockbuster-inflated $253 billion of 2019 and also below the $229 billion of 2020. We would expect this pattern of many small deals, and fewer blockbusters to continue as buyers focus on innovative assets.

Notable deals of 2021 included Merck's $11.5 billion buyout of Acceleron Pharma, maker of a potentially blockbuster cardiovascular drug,[5] and the December deal by CSL to diversify beyond vaccines and blood-plasma therapies by purchasing Vifor, a maker of nephrology, dialysis, and iron-deficiency therapies for $11.7 billion.[6]

### Exhibit 8. Nearly half of respondents say valuations rose at least 10 percent in 2021

**To what extent do you believe the valuations of innovative pharmaceutical, or biotech companies have changed in 2021?**

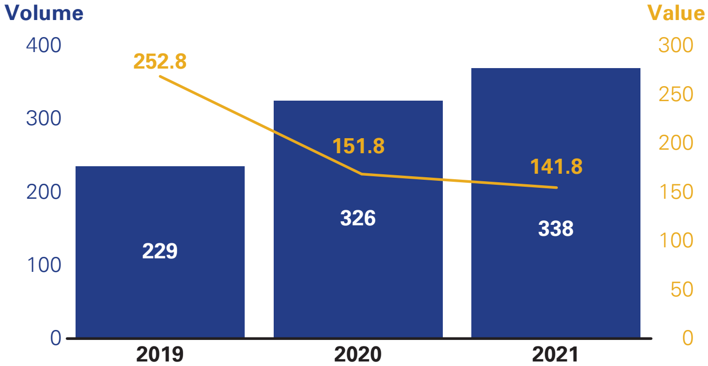

Our survey found that 71 percent of biopharma executives saw valuations increase in 2021. Nearly half—45 percent—of these respondents said valuations had increased more than 10 percent in 2021 (Exhibit 8). High valuations have not deterred investor interest in the subsector (Exhibit 9). Indeed, high valuations are, to a great extent, the result of multiple competitors pursuing the same targets. Sixty-eight percent of our surveyed biopharma executives believe that competition over a limited number of high-value or highly innovative assets was a major force behind valuation growth in 2021 (Exhibit 10).

[4] Source:Alasdair Milton, Kristin Pothier, Jeff Stoll, Mary Rollman, and John Karasek, "One-and-done' gene therapies: A near-term niche?," KPMG U.S., 2021

[5] Source: Angus Liu, "It's a wrap: Merck collects enough Acceleron shares for $11.5B buyout despite activist investor defiance," Fierce Pharma, November 22, 2021

[6] Source: Kevin Dunleavy, "CSL to buy Vifor for $11.7B in biopharma's largest M&A deal this year," Fierce Pharma, December 14, 2021

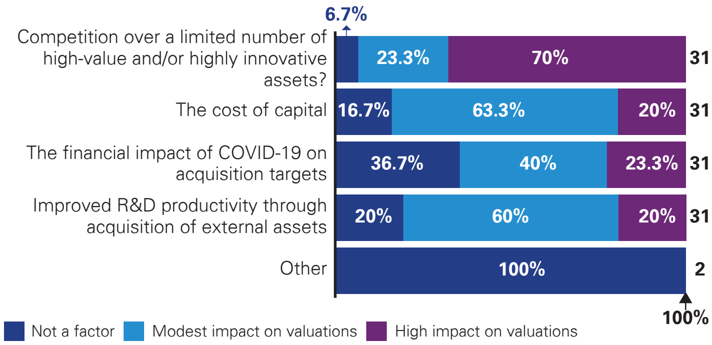
### Exhibit 9. Biopharma acquisitions, 2019-21




Note: Includes targets with biotechnology and pharmaceutical assets, including drug delivery, drug discovery, vaccines, small and large molecules, cell and gene therapy, etc. May include some CRO and other services where targets offer multiple assets; Source: Informa, Pitchbook.

### Exhibit 10. Competition drives valuations

**What factors most impacted valuations for pharmaceutical, or biotech companies in 2021?**




We saw several noteworthy trends:

**Portfolio shaping.** Leading companies are reshaping their portfolios to ensure that they can simultaneously maximize present value and drive future growth. In many cases, prospects will involve both drugs that fall within core therapeutic areas and those that amount to breakthrough innovations. Divestitures play an important role in this process. An illustrative example from 2021 was Johnson & Johnson's announcement that the company will spin off the firm's consumer-products division while retaining the pharma and medical device businesses.[7] Other examples of portfolio rationalization include Merck's spin-off of mature legacy assets to Organon.These divestitures also provide opportunities for creative private equity firms and mid-market pharma companies to acquire assets.

**Innovation deals.** Investing in innovation is always high risk, both because of the science and because of the organizational and cultural issues that arise when a traditional pharmaceutical company integrates a biotech start-up (see "Cell and gene therapy deals require caution"). Increasingly, large biopharma organizations mitigate this risk with creative deal structures, rather than making outright acquisitions. Milestone-based deals, for example, involve small up-front payments with deferred, larger capital outlays and are contingent on the target's achieving specific development milestones. One such deal in 2021 was Amgen's acquisition of Teneobio, a clinical-stage drug manufacturer of proprietary bispecific and multispecific antibody technologies. The deal was structured as a $900 million up-front cash payment, with future contingent milestone payments potentially worth up to an additional $1.6 billion.[8]

**Greater venture-capital interest.** Venture funds are allocating more money to their biopharma portfolios. For example, Bain Capital has raised $1.9 billion in a new fund targeting biotech and medical device companies. In July 2021, it contributed to a $135 million venture round for Amylyx Pharmaceuticals, which is developing a drug for amyotrophic lateral sclerosis (ALS).[9]

**Cell and gene therapy deals require caution.** There is a great deal of investment interest in next-generation cell and gene therapies. A significant proportion of innovation is coming from small biotech companies that have assets in either pre-clinical or phase 1 stages of development. Cell and gene innovators continue to push into new modalities and delivery technologies, and companies are continually working to improve existing technologies.[10] We anticipate large pharmaceutical companies will make fewer full acquisitions of early-stage companies and, instead, will increase use of creative equity deals, with options to invest or own that are contingent upon key milestone achievements. Spreading investment bets from a modality and delivery standpoint makes strategic sense, especially if there are lower up-front investments that can reduce risk exposure in the near term.



[7] Source: Jonathan D. Rockoff and Peter Loftus, "Johnson & Johnson to Split Consumer From Pharmaceutical, Medical-Device Businesses, Creating Two Companies," Wall Street Journal, November 12, 2021

[8] Source: "Amgen To Acquire Privately Held Teneobio For $900 Million In Cash With Future Contingent Milestone Payments, company website, July 17, 2021

[9] Source: Jacob Bell, "Private equity dives deeper into biotech with nearly $2B Bain fundraise," BioPharma Dive, Dive Brief, August 17, 2021

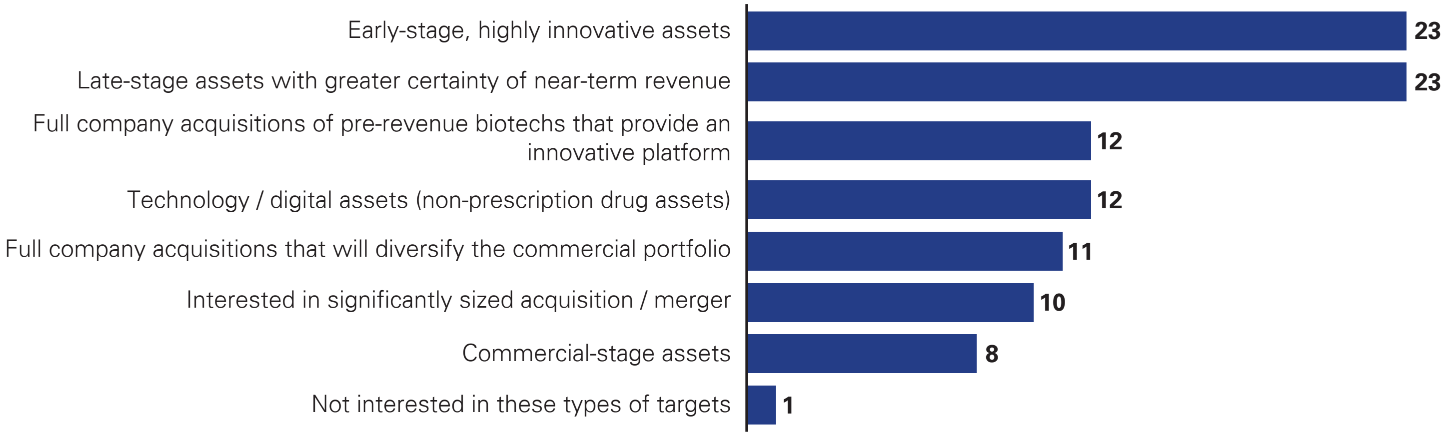
[10] Source: Alasdair Milton, Kristin Pothier, Jeff Stoll, Mary Rollman, and John Karasek, "One-and-done' gene therapies: A near-term niche?," KPMG U.S., 2021

## Outlook and investment considerations for 2022

The quest for innovation will continue to spur deal making in 2022, supported by a robust supply of early-stage innovative assets that can transform clinical care (Exhibit 11).

**Exhibit 11. Early-and late-stage innovators are top biopharma targets**

**Q21. In 2022, what types of targets will your company look to acquire? (multiple selections)**




In terms of deal types, respondents expect the top three in 2022 to be: 1) biotech acquisitions, 2) strategic partnerships, and 3) creative equity or financing deals with milestones. In terms of disease types, oncology, immunology, neurology, orphan diseases, and infectious disease will remain the focus of M&A in 2022, according to our survey.

But deal makers must keep a close eye on developments that could slow down the market. If the complexity of integration challenges has a negative impact on acquisition economics, early-stage asset deals could be less robust than in the past two record-breaking years (see "Integration challenges"). Other challenges include concerns about high valuations, potential changes in corporate tax rates, and rising interest rates, as well as the possibility that the federal government will take a harder line on drug pricing and increase scrutiny of biopharma deals (see "Tailwinds and headwinds").

### Integration challenges

The complexities of integrating companies' clinical pipeline assets have only multiplied. When biopharma companies acquire innovative young companies, they need to exert the right amount of management oversight to mitigate risks without stifling the entrepreneurial spirit that fosters innovation. For example, if innovative platforms continue to struggle with severe safety signals (e.g., deaths), such as we've seen with the recent AAV8-based-gene therapy, we could see more caution around earlier-stage, less verified technologies.[11] Cultural differences between established Big Pharma companies and young cell and gene companies can also be a source of tension.

Acquirers also can run into issues around the equity interests of both senior and middle management at the target. In some start-ups, a transaction could trigger payouts of $2 million to $3 million for middle managers, creating an incentive to leave the company. It is vital for acquirers to plan for talent-retention programs with longer-term success milestones to ensure the right talent remains with the acquisition.

[11] Source: Jason Mast, "Nearly a year after Audentes' gene therapy deaths, the trial continues. What happened remains a mystery," EndpointsNews, April 16, 2021

## A view of the FTC from Goodwin Procter

Even before the Biden administration, the Federal Trade Commission had increased scrutiny of proposed transactions, including "killer acquisitions." The term refers to acquisitions of early-stage companies by large players, which effectively eliminate nascent competitors. Decisions on AbbVie/Allergan, BMS/Celgene, Roche/Spark, and Illumina/PacBio deals are examples of the trend. Commissioners Slaughter and Chopra—the two Democrats then on the five-person Commission—issued dissents arguing for even more aggressive enforcement or more extensive divestitures.

In the early days of the Biden Administration, Commissioner Slaughter, as acting chair, launched the Multilateral Pharmaceutical Merger Task Force, "to identify concrete and actionable steps to review and update the analysis of pharmaceutical mergers." This project envisions cooperation between the FTC, the Department of Justice, and EU, UK, and Canadian antitrust enforcement agencies to explore "new theories of harm" and "fresh approaches that fully analyze and address the varied competitive concerns" that arise in life sciences deals.

So far, the agency's actions remain consistent with past enforcement trends. The FTC has continued to focus on the impact of M&A on generic drug prices, for example. In November, the agency challenged a deal by ANI Pharmaceuticals to buy another generic drug maker, Novitium Pharma. A consent decree required ANI to divest Prasco LLC, ANI's development rights to one generic drug, and assets related to another generic. And the high-profile challenge to the Illumina/Grail transaction is a carry-over from former FTC Simon's term.

What's next? The appointment of Lina Khan as FTC chair was widely regarded as a sign of more aggressive enforcement. Khan is a former academic who has done extensive work in the tech industry and is a critic of orthodox antitrust policies. She is expected to make extensive changes to the traditional analytical framework of antitrust analysis. However, to date, there has not been any agency action that is materially inconsistent with past policies.

**– Arman Oruc**

*Arman Oruc is Co-Chair, Antitrust Competition, Goodwin Procter*

## Tailwinds and headwinds

### Tailwinds

- **The quest for future revenue**. Deal making will continue to be fueled by the hunt for early- and clinical-stage pipeline assets. More than 20 percent of biopharmaceutical executives responding to our survey reported interest in targeting these assets in 2022. Since biopharma companies need to sustain innovation or risk significant revenue cliffs as patent protections expire, they will continually look for innovative assets.

- **Rapidly expanding global pipeline.** The robust global R&D pipeline is providing a wide array of innovative targets for deal makers to consider. This includes nucleic-acid-based therapeutics (e.g., RNA, oligonucleotide, and cell and gene therapies) as well as large molecule mABs. Next-generation modified-cell therapies also have garnered significant attention from investors.

### Headwinds

- **Rising valuations.** As the valuation of a biopharma company rises, so too does the deal's risk profile. The desire to avoid this level of risk will likely promote smaller-scale deals and acquisitions of minority interests, as well as licensing and other types of creative deal making.

- **Economic and tax policy.** The anticipated interest rate hikes in 2022 could cool off the deal market. An increase in corporate tax rates could also have a chilling effect.

- **FTC policy.** Investors should monitor the degree to which evolving FTC antitrust policies increase deal reviews and what types of deals get the most attention.

## The take-away

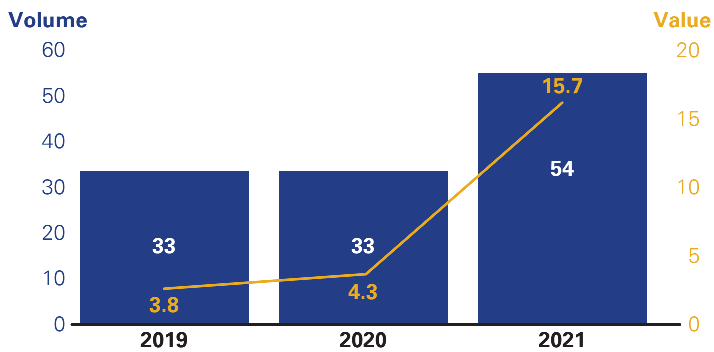
The competition for innovative assets will remain a major driver of the biopharma deal market. However, selecting the best opportunities amid rising valuations and still-unproven targets will be challenging. Deal makers will continue to focus on creative deal structures—and perhaps increase this focus—as they look to mitigate the risk of investing in early-stage assets and continue to add innovation to their pipelines. To capture the intended value, companies will need to continue to develop their internal expertise on next-generation technologies and find creative ways to retain talent.

# Diagnostics manufacturing: Looking beyond COVID-19

COVID-19 continued to be a significant change agent in the diagnostics industry in 2021. From creating high demand for COVID-19-related testing globally, to interrupting almost all routine non-COVID-19 testing, to driving innovation in platforms such as point-of-care, the pandemic substantially shaped the diagnostics landscape in 2021, just as it did in 2020.

The pandemic also accelerated the path to market for innovations. The FDA issued more than 400 COVID-19-related emergency use authorizations (EUAs)[12] including 268 for authorized SARS-CoV-2 molecular diagnostic tests,[13] 14 for COVID-19-related therapeutics,[14] three for vaccines, and the remainder for items such as PPE and medical devices. The EUAs, for both diagnostics and therapeutics, helped bring innovations such as mRNA vaccines to market in record time. Now, the same innovations can be developed for other infectious and chronic diseases, changing the face of diagnostic testing.

**Exhibit 12. Diagnostic manufacturing acquisitions, 2019-21**

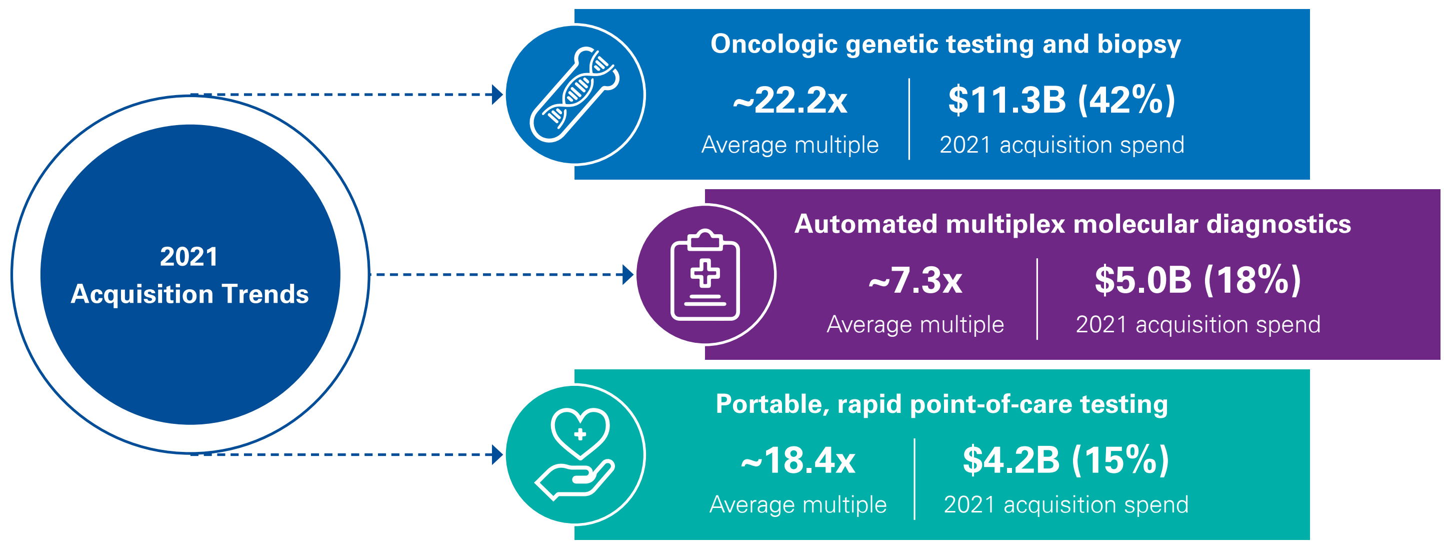



Note: Includes targets with in-vitro diagnostics and some imaging assets, including molecular diagnostics and genetic testing, chemistry, immunoassay, drug monitoring, saliva and urine-based testing, etc. May include some lab and other services where targets offer multiple assets. May exclude some targets with diagnostic assets where targets offer a multi-sector portfolio of products; Source: Informa, Pitchboook.

## How diagnostics fared in 2021

In 2021, deal making in the diagnostics subsector eclipsed 2020's strong performance. Deal volume climbed by 64 percent. The first half of the year was especially active, with 35 of the year's 54 deals. For the full year, the total value of deals soared to $15.7 billion—up from $4.3 billion in 2020 (Exhibit 12). Three areas were especially attractive to investors (Exhibit 13).

**Exhibit 13. Where the deals happened in 2021**




[12] Source: Jen A. Miller, "From Bust to Boom in Diagnostics Innovation," Clinical Laboratory News, American Association for Clinical Chemistry (AACC), September 1, 2021

[13] Source: "In Vitro Diagnostics EUAs - Molecular Diagnostic Tests for SARS-CoV-2," U.S. Food and Drug Administration (FDA)

[14] Source: "Emergency Use Authorization, emergency-preparedness-and-response," U.S. Food and Drug Administration (FDA)

◆ **Portable, rapid point-of-care testing.** COVID-19 has been a huge driver of growth in this area, with offerings in antigen and antibody testing widely available. In addition, advancements in PCR testing have enabled results in 30 minutes, allowing this type of testing to join the "rapid" category. Over the course of the pandemic, such innovations have multiplied, often with an assist from government contracts and mandated insurance coverage. These range from high-volume laboratory tests (such as traditional PCR) to over-the-counter products for self-testing by consumers (such as Abbott's rapid antigen test BinaxNOW).

◆ **Oncologic genetic testing and liquid biopsy.** This area has seen the highest multiples and total acquisition spend. These capabilities are important not only for less- or non-invasive cancer detection and profiling, but also for precision-medicine-based therapy selection and post-treatment tumor monitoring. There have been several blockbuster acquisitions in the liquid biopsy space in recent years—including Illumina's approximately $8 billion acquisition of GRAIL (the integration of this deal has been "paused" by the European Union as it reviews possible harm to competition from the transaction).[15] There was also Exact Science's approximately $2 billion acquisition of Thrive, discussed below. In late December, Labcorp agreed to pay $575 million (including $125 million in performance milestones) for Personal Genome Diagnostics.[15] However, small financings (of less than $100 million) have been the most common type of investment in this area.

◆ **Automated multiplex molecular diagnostics.** Infectious disease detection and advancements in multiplexing technology have been major drivers of deal making. The ability to test for several diseases in one test (for example, COVID-19 and the flu) streamlines the process of getting patients the most appropriate care.

Some diagnostics manufacturers have used the earnings gains from COVID-19 testing for additional M&A. In our survey, 18 percent of diagnostics-sector respondents said that the revenues they realized from COVID-19 testing allowed them to make more deals in 2021. Instead of looking for an immediate payoff, some companies are now willing to give acquisitions several years to show value for innovations still in development. In our survey, 17 percent of respondents said that enhanced revenues from COVID-19 testing allowed them to make non-accretive deals; 16 percent said it enabled them to make larger deals (Exhibit 14). Some of the biggest transactions, not surprisingly, were in molecular diagnostics.

**Exhibit 14. The COVID-19 windfall continues to fuel diagnostics deals**

**Q29. To what extent has COVID testing enhanced your revenues and enabled you to conduct investment activities?**


## Notable deals in molecular diagnostics

- Illumina, which has reported more than $1 billion in testing revenue since the first quarter of 2020, used some of its increased earnings to purchase GRAIL for more than $7 billion, or approximately 71x revenue multiple,[17] in August 2021. Illumina's market-development capabilities and extensive access will help expand the availability of GRAIL's oncology blood test, which screens for more than 50 types of cancer.[18] Hologic's diagnostics revenue has been $800 million to $1 billion per quarter since the pandemic began, up from $100 million to $200 million per quarter pre-COVID-19.
- In 2021, Hologic spent over $1 billion to purchase Biotheranostics, a precision-medicine molecular lab ($230 million),[19] Mobidiag, a manufacturer of molecular diagnostics for infectious diseases and antibiotic-resistant infections ($795 million, 10.7x revenue multiple)[20] and Diagenode, a leading immunodiagnostics manufacturer ($159 million).[21]

[15] Source: Foo Yun Chee, "Illumina laments EU regulators' pause into Grail deal probe," Reuters, August 12, 2021

[16] Source: "Labcorp Acquires Personal Genome Diagnostics," Precision Medicine, December 23, 2021

[17] Source: Mike Scarcella, "FTC urges judge to unwind $7.1 bln Illumina-Grail merger," Reuters, August 24, 2021. (The FTC has asked a court to unwind the deal on the grounds that it would harm innovation and raise prices. Illumina has argued that this deal is a vertical integration that would enable it to address the high cost of GRAIL's tests and improve patient accessibility. A court decision is expected in 2022).

[18] Source: "Illumina to Acquire GRAIL to Launch New Era of Cancer Detection," Company website, August 18, 2021

[19] Source: "Hologic to Acquire Biotheranostics, Leader in Molecular Tests for Breast and Metastatic Cancers, for Approximately $230 Million," Press Releases, Company website, January 5, 2021

[20] Source: "Hologic to Acquire Mobidiag, Innovator in Near-Patient, Acute Care Diagnostic Testing, for Approximately $795 Million," Press Releases, Company website, April 8, 2021

[21] Source: "Hologic Acquires European Molecular Diagnostic Company Diagenode for Approximately $159 Million," Press Releases, Company website, March 1, 2021

- Roche attributed triple-digit growth in point-of-care sales in 2020 to its COVID-19 antigen test, a product that was only available for the final two months of the year. In 2021, Roche put some of its COVID-19-related earnings to work by purchasing GenMark Diagnostics for $1.8 billion (11x revenue multiple).[22] GenMark is a leading provider of multiplex molecular-diagnostic testing solutions for a wide variety of infectious diseases.
- Diasorin's molecular-diagnostics test revenue grew by 313 percent in 2020, attributable to several acquisitions as well as COVID-19 testing solutions that include two molecular-diagnostic tests and three immunodiagnostic tests. In 2021, Diasorin acquired Luminex for $1.8 billion (a 4.5x revenue multiple) to further strengthen its position in molecular diagnostics.[23]

## Other notable deals of 2021

- Quidel's $6 billion deal to acquire Ortho Clinical Diagnostics to expand access to clinical chemistry, immunoassay, molecular diagnostics, immunohematology, donor screening, and point-of-care diagnostic offerings[24]
- Novo Holding's $564 million acquisition of BBI Group, including its Novarum Dx mobile smartphone and rapid home-test-kit technologies, announced in June 2021.[25]
- Exact Science's approximately $2 billion acquisition of Thrive Earlier Detection in early 2021 enhanced Exact Science's early-stage-cancer molecular-diagnostics offerings with Thrive's test to detect multiple cancer types.[26]
- Thermo Fisher's $450 million acquisition of Mesa Biotech (including $100 million in milestone payments), completed in March 2021. Mesa Biotech produces a rapid PCR-based test that gives results in 30 minutes and has been instrumental in on-site COVID-19 testing.[27]
- NeoGenomic's $390 million acquisition of Inivata, an early-stage liquid-biopsy manufacturer, announced in May 2021[28]
- PerkinElmer continued its innovative life sciences and diagnostics transformation in 2021, including a $5.25 billion deal for BioLegend, a leading global antibody and reagent provider. BioLegend will contribute to PerkinElmer's diagnostics franchise and become PerkinElmer's global center of excellence for research reagent content.[29]

## China's moves in diagnostics

China is a crucial region of growth for the diagnostics industry. Although diagnostics acquisition activity in this region was lower than in the U.S. or EU in 2021, notable strategic partnerships and financing activity highlight the ongoing expansion of oncology and genetic testing.

In February, Chinese diagnostics company AmoyDx announced a partnership with AstraZeneca to develop companion diagnostics (CDx) for use in treating ovarian cancer patients with homologous recombination deficiency.

In March, AmoyDx and Haihe Biopharma announced an agreement to codevelop CDx for the U.S. market. The partnership is using AmoyDx's MET mutation detection kit as a CDx assay to support the U.S. registration of Haihe's MET kinase inhibitor Glumetinib, used in the treatment of lung cancer.

In June, two China-based firms, Burning Rock Biotech and Impact Therapeutics, announced a global strategic partnership to develop CDx for a pipeline of targeted oncology drugs. Regulatory submissions are planned for both the U.S. and China. Finally, China's interest in innovative technologies such as liquid biopsy increased from 20 percent in 2019 to 51 percent in 2021, according to the KPMG DxET Database.

China will continue to build its diagnostic prowess in the coming years. With a population of 1.5 billion and an age-standardized cancer-incidence rate of 204.8 per 100,000,[30] the country has a huge domestic market to address, as well as global ambitions.

[22] Source: "Roche signs definitive merger agreement with GenMark Diagnostics, Inc., to access novel technology to test for broad range of pathogens with one patient sample," Media Releases, Company website, March 15, 2021

[23] Source: "Diasorin To Acquire Luminex Corporation For USD 37.00 Per Share Or Approximately USD 1.8 Billion," DiaSorin Group, April 11, 2021

[24] Source: Sean Wooley, "Quidel to acquire Ortho Clinical Diagnostics for $6B," massdevice.com, December 23, 2021

[25] Source: "Novo Holdings acquires BBI Group from Exponent for $564m," Medical Device Network, June 16, 2021

[26] Source: "Exact Sciences Completes Acquisition of Thrive Earlier Detection, Creating A Leader in Blood-Based Multi-Cancer Screening," Press Releases, Company website, January 5, 2021

[27] Source: Omar Ford, "Thermo Fisher Scoops up Mesa Biotech for $450M," mddionline.com, January 19, 2021

[28] Source: Andrea Park, "NeoGenomics to acquire Inivata for $390M after success of lung cancer liquid biopsy collab," Fierce Biotech, May 6, 2021

[29] Source: Sean Whooley, "PerkinElmer completes $5.25B acquisition of BioLegend," MassDevice.com, September 20, 2021

[30] Source: Cao, Wei; Chen, Hong-Da; Yu, Yi-Wen; Li, Ni; Chen, Wan-Qing, "Changing profiles of cancer burden worldwide and in China: a secondary analysis of the global cancer statistics 2020," Chinese Medical Journal, Volume 134 - Issue, March 17, 2021

## Outlook and investment considerations for 2022

In 2022, 88 percent of our survey respondents say they expect the number of deals in the subsector to increase and more than half expect deal volume to rise by at least 10 percent (Exhibit 15). Half of respondents say the most likely type of deals will be small strategic tuck-ins and strategic partnerships (35 percent) rather than large consolidations (15 percent). In last year's survey, strategic partnerships were seen as more likely, followed by small strategic tuck-ins and large consolidations.

**Exhibit 15. Deal makers have high expectations for increased volume in 2022**

**How do you believe overall deal volume for diagnostics manufacturers in 2022 will compare to 2021?**


As in 2021, survey respondents predict that the top three areas for M&A activity will likely be: (1) point-of-care testing, driven by the pandemic, (2) next-generation sequencing (NGS), driven equally by enhancing the pipeline and a continuing push for innovation, and (3) liquid biopsy, driven primarily by manufacturers' desire to develop a robust pipeline in key therapeutic areas such as oncology. Of the three, the point-of-care testing segment is expected to have the largest increase in valuation, according to 95 percent of survey respondents.

In 2022, we expect to see more deals by diagnostics companies that are aimed at building the foundations for growth after COVID-19 recedes. Thanks to increased earnings during the pandemic, many companies now have the wherewithal to make non-accretive deals that will offer access to future innovations. We also expect continuing growth in mobile and home testing, as players— such as Binax, Ellume, and Cue—aim to move testing outside of traditional labs.

Everlywell, a provider of at-home lab tests for allergies and other conditions, grew by 300 percent in 2020, largely from COVID-19 test revenue. In March 2021, the company acquired PWN Health and Home Access Health Corporation, a national telehealth network, and rebranded the parent as Everly Health Solutions.[31]

In our survey, respondents predict the greatest increase in valuations will be for point-of-care diagnostics businesses (Exhibit 16). Portability/accessibility is also a growth opportunity in sequencing (see "More genetic sequencing outside the lab").

### More genetic sequencing outside the lab

- GenapSys has developed a portable next-generation-sequencing (NGS) platform for electrical detection of nucleotide incorporation. The platform is powered by a sequencing chip that utilizes simple fluidics to evenly distribute DNA across millions of sensors, providing highly accurate base calls. The company says this technology will be the foundation for an affordable, accessible, next-generation instrument, as well as an automated solution for large-scale sequencing.[32]
- Sherlock, a start-up, is using CRISPR in molecular-diagnostic tests with its INSPECTR platform. The company says that the platform can be programmed to distinguish targets based on a single nucleotide without an instrument and at room temperature. It can be applied across multiple diseases and is adaptable for use in laboratory or point-of-care settings, according to the company.[33]

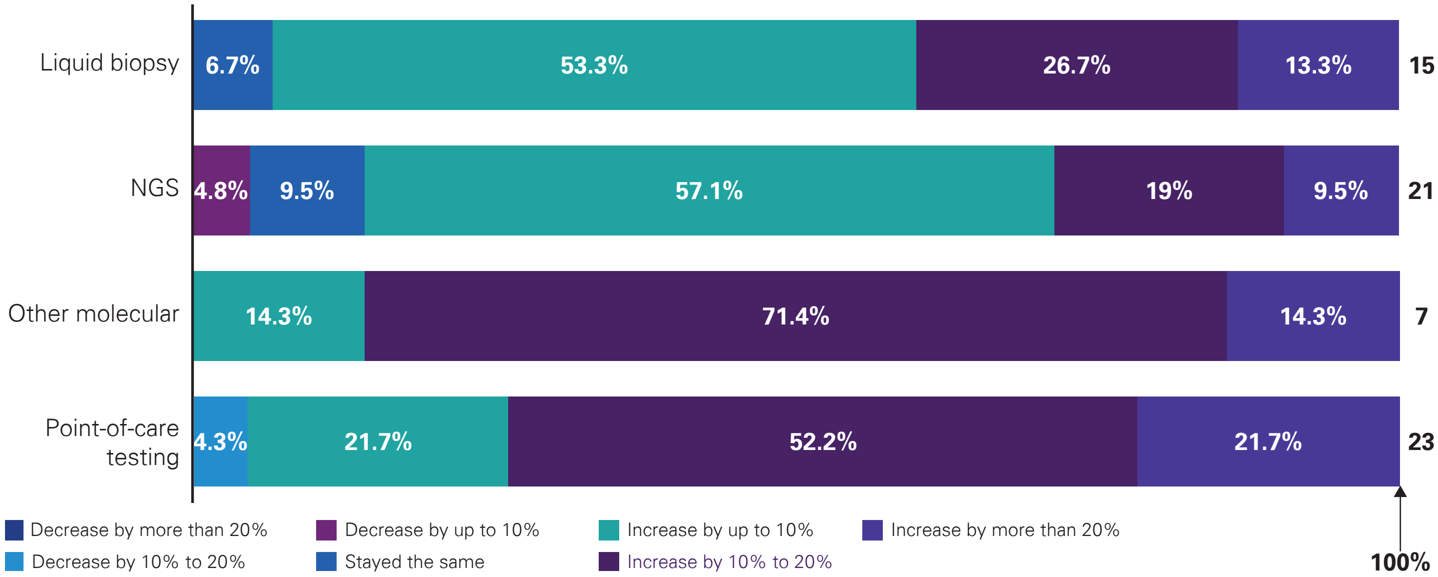
[31] Source: "Everlywell Acquires PWNHealth and Home Access Health Corporation, Forming Everly Health," Newsroom Releases, Company website, March 24, 2021

[32] Source: Michael M. Kaminski, Omar O. Abudayyeh, Jonathan S. Gootenberg, Feng Zhang, and James J. Collins, "CRISPR-based diagnostics," Nature Biomedical Engineering, July 16, 2021

[33] Source: "What is INSPECTR™?," Sherlock Biosciences, Company website

**Exhibit 16. Deal makers expect the fastest rise in multiples in point-of-care**

**Q31. How do you expect valuations to compare to previous years?**




## Tailwinds and headwinds

**Tailwinds**

- **Growing accessibility.** Diagnostic technology is becoming more portable and accessible to consumers, clinicians, and scientists.
- **Widening optionality.** Throughout diagnostic-platform history, developers have aimed to innovate to provide more throughput and configuration options for customers and their labs. This started in the core lab with immunoassay and clinical chemistry before moving into molecular optionality and now into NGS optionality.

**Headwinds**

- **Loss of COVID-19 volumes.** A significant decline in COVID-19-related revenues would deprive diagnostics players of the strong cash flow that some have deployed to make acquisitions. It could also make these players less attractive targets. To preempt a steep decline in revenue, leading companies are adapting platforms developed for COVID-19 testing to other types of testing.
- **Depleted pipeline of targets.** After the buying sprees in recent years, the number of attractive targets may be dwindling. If the pipeline is not replenished, strategic and financial investors may start taking a more cautious approach to playing in the market.
- **Portfolio rationalization.** Companies that have been on buying sprees will likely step back from making additional acquisitions to allow time for integrating their acquisitions and rationalizing their portfolios. If these big spenders slow their pace, the hot market could cool down.
- **Market risks.** The market may not be able to support all the new point-of-care and at-home tests that have become available. And physicians may still prefer to outsource certain tests to labs.
- **Regulatory uncertainty.** Some diagnostic products that entered the market under EUAs during the pandemic may be subject to new FDA guidance. Manufacturers can take steps to foster compliance with applicable statutory and regulatory requirements to allow them to continue selling these products.

## The take-away

Diagnostics manufacturers are soaring, due in equal parts to the pandemic and appreciation of their impact on healthcare ecosystems worldwide. As they provide more innovation and optionality to diagnostics labs (their customers), that ecosystem is also thriving (see Biopharma and Diagnostics Lab Services). The sectors are also converging: some diagnostic manufacturers are acquiring labs (for example, Hologic acquired Biotheranostics) and some labs are acquiring diagnostics manufacturers. Leading companies are also pursuing opportunities to apply their innovations in testing and measurement across sectors, such as consumer products, industrial manufacturing, and telecommunications.

Overall, 2021 was a banner year for the diagnostics industry. In 2022, we expect to see rationalization of acquisitions, continued innovation related to access, and increasing maturity of this converging ecosystem.

> Nearly 90 percent of our survey respondents say they expect the number of deals in the subsector to increase in 2022, and more than half expect deal volume to rise by at least 10 percent.

# Medical devices: Still feeling direct impact of the pandemic

Among life sciences subsectors, medical devices have been the most negatively disrupted by COVID-19. In 2021, the surge in cases caused by variants thwarted a sustained rebound for both elective procedures requiring inpatient treatment and hospital stays and outpatient procedures in specialty physician offices. This has led to variable demand for devices used in deferrable procedures—such as hip and knee replacements, ortho extremities, aesthetics, spine surgery, cataract/LASIK, and LAAC. Knee-surgery rebounds have been 20 percent lower than predicted, according to a recent Epic Health survey.[34]

Some products have escaped the worst effects, such as devices used in less deferrable procedures that fall within trauma, cardiac, oncology, and TAVR, as well as dialysis and diabetes management. Although no elective-surgery categories have reached pre-COVID-19 utilization levels, those for which there are no comparable alternative treatments, such as breast surgery and hysterectomies, have come close. And the Delta surge in 2021 sustained demand for ventilators and other respiratory devices, as well as PPE, syringes, and other consumables.

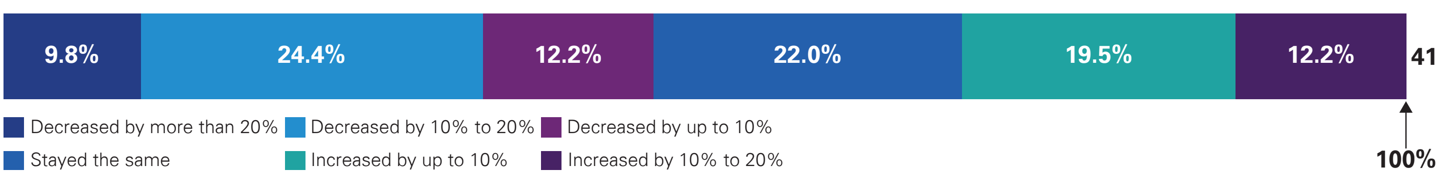
In this unpredictable environment, deal makers in 2021 tended to focus on smaller-scale, strategic deals rather than transformative transactions. Such deals were used in 2021 to diversify or extend product lines, expand into new geographies, and add scale, while managing the risks of the uncertain environment. For example, Boston Scientific announced that it is acquiring Baylis Medical Company for an upfront payment of $1.75 billion.[35] The acquisition expands Boston Scientific's portfolios of electrophysiology and structural heart products.

## How medical devices fared in 2021

Despite the unpredictable environment, it was a good year for deal making. Deal volume rose by 13 percent compared with 2020 and was strong in each quarter. The total deal value increased by 65 percent, to $79 billion (Exhibit 18). Among our medical device survey respondents, 34 percent said that they believed the valuation of medical device manufacturers had decreased between 10 percent and 20 percent or more this year (Exhibit 17). That represents an improvement over last year, when 59 percent believe valuations had decreased by that extent.

**Exhibit 17. 40 percent of deal makers still think the pandemic has negatively impacted valuations**

**Q24. To what extent do you believe the value of elective-procedure medical device manufacturers has changed since COVID-19?**




Three major themes drove M&A in medical devices in 2021: portfolio shaping by established organizations to accelerate growth, deals aimed at innovation, and acquisitions of device companies by diagnostics players:

- **Portfolio shaping.** In February 2021, Zimmer Biomet announced that it is spinning off its spine and dental businesses to focus on its core orthopedics business—including hip, knee and sports medicine, extremity, and trauma devices.[36] In March, Cardinal Health announced the sale of Cordis, a cardiovascular device manufacturer, to Hellman & Friedman, a private equity fund, for approximately $1 billion.[37]

- **Innovation.** Device companies are pursuing innovation through traditional M&A and through investments in early-stage companies. For example, Olympus has created a venture

[34] Source: Anastassia Gliadkovskaya, "Volumes for these elective procedures are closest to rebounding from COVID declines, Epic finds," Fierce Healthcare, October 25, 2021

[35] Source: "Boston Scientific to acquire Baylis Medical Company for $1.75bn," Medtech News, October 11, 2021

[36] Source: "Zimmer Biomet Announces Intent to Spin Off Spine and Dental Businesses," Newsroom Releases, Company website, February 5, 2021

[37] Source: "Cardinal Health signs definitive agreement to sell its Cordis business to Hellman & Friedman," Press Releases, Company website, March 12, 2021

fund to "nurture partnerships with relevant and compelling entrepreneurial teams."[38] Bayer has funded One Drop, which has developed an artificial-intelligence-powered platform designed to help predict trends in an individual's glucose levels and blood pressure.[39] Connected devices for use in care settings and for home monitoring remain a focus of innovation and investment. In September 2021, Baxter International announced a $10.5 billion deal for Hillrom, a maker of smart beds and other connected devices, which Baxter says will accelerate "expansion into digital and connected care solutions that are increasingly enabling patients with access to hospital-level care at home or in other care settings."[40]

- **Multi-disciplined diagnostics players branching out.** Diagnostics-test manufacturers, with a windfall of COVID-19-related revenues, are investing in medical devices. Hologic, for example, continued its acquisition program with the $160 million acquisition of Bolder Surgical, a maker of surgical tools. That deal was announced in October 2021.[41]

## Outlook and investment considerations for 2022

On balance, the outlook for investment in the medical device subsector appears to be positive. Survey respondents said that they will be looking for manufacturers of medical devices that have solid underlying technology as well as tuck-ins to expand market share or share of wallet.

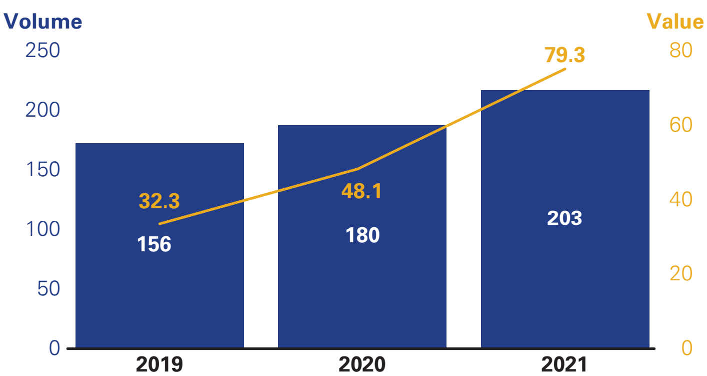
Regarding the types of medical device deals for the coming year, respondents gave a slight edge to small strategic tuck-ins over strategic partnerships (Exhibit 19). Respondents showed decreasing interest in large consolidations compared with last year (5 percent, down from 17 percent).

The two principal drivers of transactions in 2022 will likely be portfolio reshaping and a resumption of normal demand. Established players are shedding non-core, non-complementary, or lower-performing businesses (which nonetheless have high valuations) and buying into new growth opportunities. Early-stage companies are ripe targets for investment by companies seeking access to innovation, with connected devices garnering a great deal of attention.

Divestitures by two major medical device players are planned. GE has announced that it will divest GE Healthcare, which is in interventional imaging, as part of a major restructuring. Johnson & Johnson is keeping its medical device and pharmaceutical businesses, but plans to spin off its consumer health business.

Investors will need to consider new variants and potential surges, as well as their impact on supply chains. Further, there are some areas where breakthrough innovations could eliminate the need for certain devices. Investors will need to stay abreast of regulatory developments as the Biden administration's agenda comes more clearly into focus. There is some discussion in Washington around reshoring critical manufacturing processes, at least for sourcing of some critical components. However, it remains to be seen whether the Biden administration's agenda will prioritize medical devices over other critical manufacturing-based industries.[42]

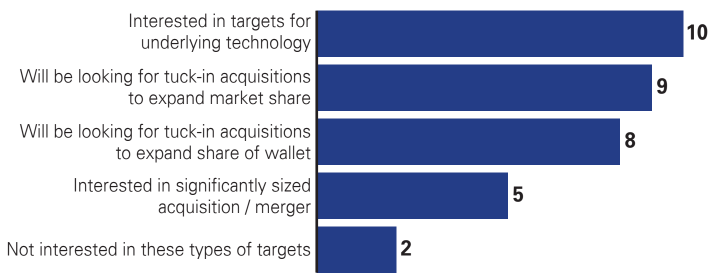
### Exhibit 18. Medical device acquisitions, 2019-21




Note: Includes targets including imaging equipment, and supplies, implantable devices, surgical equipment etc. May include some other life sciences subsectors where targets offer multiple assets. May exclude some targets with device assets where targets offer a multi-sector portfolio of products; Source: Informa, Pitchbook.

### Exhibit 19. How acquirers are looking at elective surgery

**Q25. To what extent will you be targeting elective-procedure medical device manufacturers for investment in 2022? (multiple selections)**




[38] Source: "Notice Regarding Establishment of a Corporate Venture Capital Fund 'Olympus Innovation Ventures,'"Olympus-Globa news release, September 27, 2021
[39] Source: "One Drop Receives CE Mark, Launches Data-Driven Insights for People Managing High Blood Pressure," Press Releases, Company website, May 26, 2021
[40] Source: "Baxter to Acquire Hillrom, Expanding Connected Care and Medical Innovation Globally," Newsroom Releases, Company website, September 2, 2021
[41] Source: "Hologic to Acquire Bolder Surgical for $160 Million, Expanding its Surgical Franchise," Press Releases, Company website, October 14, 2021
[42] Source: David Z. Morris, "COVID exposed global supply-chain flaws. Can Biden bring manufacturing back to the U.S.?," Fortune, April 24, 2021

## Tailwinds and headwinds

### Tailwinds

- **Portfolio shaping.** Companies with narrow product portfolios will continue to pursue diversification, while companies that are already diversified may want to take advantage of high valuations to initiate spinoffs.

- **Resurgence of demand.** In 2022, device manufacturers may benefit from a backlog of spending by hospital systems that may now complete capital purchases disrupted by the pandemic. Demand from aging baby boomers will boost sales of devices used in cardiovascular, neurological, and orthopedic treatments.

- **Pursuit of early-stage companies.** Global medical device companies are filling the historical gap in venture funding for early-stage med tech companies by launching or expanding corporate venture capital funds.

- **Connected devices.** The intersection of medical devices and consumer technology, such as home tests that incorporate digital solutions, is an increasing focus for the industry.

### Headwinds

- **Persistent uncertainty.** The unknowns regarding the course of the pandemic will continue to complicate demand forecasting for medical devices used in elective procedures, creating additional risks for investments in the subsector.

- **Supply-chain disruptions and inflation.** Investors will need to consider how the pandemic's impact on supply chains and prices will affect the cost structures and profitability of device manufacturers, as well as their ability to meet demand.

- **Competition from noninvasive diagnostic testing.** The increasing availability and popularity of noninvasive diagnostics testing—such as Cologuard as a substitute for colonoscopies—threatens to impede demand for devices used in collecting samples.

- **Regulatory issues.** CMS could repeal the Medicare Coverage for Innovative Technology final rule, which currently grants expedited Medicare coverage for certain breakthrough medical devices.[43]

## The take-away

Low procedural volumes, supply chain disruptions, and delayed capital sales made 2021 a difficult year for many medical device companies. The extent to which the environment will normalize in 2022 remains an open question. To thrive amid the uncertainty, medical device players will need to maintain their focus on innovation and diversification and emphasize risk management in structuring their deals.

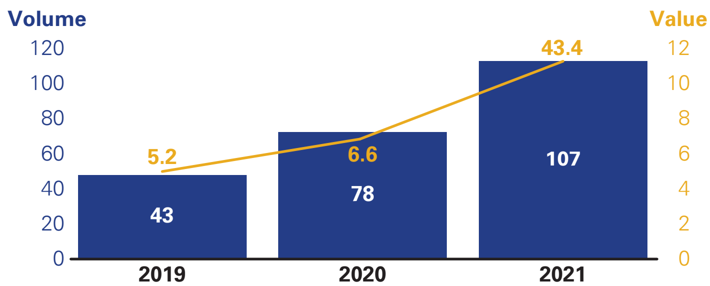

[43] Source: Dr. Lee A. Fleisher, "Medicare Coverage of Innovative Technologies (MCIT)," Centers for Medicare & Medicaid Services (CMS) blog, September 13, 2021

# Biopharma and diagnostic lab services

The future of biopharma services and diagnostic lab services remains bright as the favorable trends catalyzed by COVID-19 show no sign of abating. Deal volume in the subsector climbed sharply in 2021—rising 37 percent compared with 2020. The market was especially active in the first half of the year, during which 66 of the 107 deals of 2021 were made. Total deal value rose dramatically, thanks to several deals in the $10 billion range (Exhibit 20). Companies in the subsector are using M&A to meet demand arising from global growth and diversification in biopharma. Some notable transactions:

- Thermo Fisher Scientific acquired PPD, a leading CRO, for $17.4 billion, describing the acquisition as a "natural extension" that adds "highly complementary services," including a drug-development platform, patient-recruitment capabilities, and laboratory services, to its offerings.[44]
- ICON, an Ireland-based CRO, acquired PRA Health Sciences, a U.S.-based CRO, for about $12 billion. ICON seeks to benefit from PRA's mobile and connected health platforms and real-world data as well as increased functional, geographic, and therapeutic scale.[45]
- Parexel International, a global CRO, was acquired by the EQT IX fund and Goldman Sachs Asset Management in one of the biggest private equity deals of the year in healthcare and life sciences. The funds bought the company from Pamplona Capital Management LP for $8.5 billion. The investment is intended to accelerate the growth of Parexel's "global footprint, strong operational capabilities, and expansive healthcare network." The company is seeking to innovate in several areas, including greater use of real-world evidence, decentralized clinical trials, biostatistics, and data management.[46]
- Danaher, a diversified manufacturer, acquired Aldevron, a CDMO that produces plasmid DNA, mRNA, and recombinant proteins used in vaccines and cell and gene therapies, for approximately $9.6 billion. Danaher seeks to expand its capabilities into genomic medicine.[47]

**Exhibit 20. Biopharma and diagnostics lab services acquisitions, 2019-21**




Note: Includes CROs, CDMOs, lab services, digital health, and those marked as miscellaneous. May include some other life sciences subsectors where targets offer multiple assets

## How biopharma services and diagnostic labs fared in 2021

## Biopharma services

In 2021, biopharma services were in high demand to support the development of innovative drugs and reduce patient burden during clinical trials. Several trends are driving growth:

◆ **High utilization and huge inflows of capital.** Utilization remains high, as some research work from 2020 was pushed to 2021 and the pandemic generated new work. Additionally, as investments in new areas such as cell and gene therapy continue to grow, so too will demand for related wraparound services. With more projects than employees can handle, companies are facing a demand-and-supply imbalance and an ever-growing backlog. At the same time, COVID-19, government funding, and the relevance of the sector are driving inflows of capital.

◆ **Acceleration of R&D and clinical trials.** Biopharma companies are looking to service providers to enable faster speed to market. For example, some biopharma and med tech companies are willing to pay a significant premium to jump the queue for trials and run them faster. Although this is largely possible for companies benefiting from the halo effect of rapid COVID-19 vaccine development, it was also evident in oncology trials before the pandemic.

◆ **Digitization of commercial and medical communications.** The growing emphasis on digitalization and omnichannel capabilities has continued in communications. The pandemic accelerated the trend toward virtual interactions with physicians

[44] Source: "Thermo Fisher Scientific to Acquire PPD, Inc., a Leading Clinical Research Organization," Company website, April 15, 2021

[45] Source: "ICON to acquire PRA Health Sciences," Press Releases, Company website, February 24, 2021

[46] Source: "Parexel to be Acquired by EQT Private Equity and Goldman Sachs Asset Management," Newsroom Releases, Company website, July 2, 2021

[47] Source: "Danaher to Acquire Aldevron," Press Releases, Company website, June 17, 2021

and greater use of digital marketing channels. Biopharma companies need to partner with communications companies that can push out campaigns through different media channels and collect and analyze consumer and provider engagement data to create a feedback loop for improving these campaigns. As an indication of the opportunity to meet these needs, Fishawack Health, a global healthcare communications company, acquired closerlook, a digital marketing agency for life sciences brands, for an undisclosed amount.[48] Closerlook uses AI and data analytics to develop omnichannel strategies and digital-media campaigns across a drug's pre-commercial and commercial lifecycles.

These trends are driving historically high valuations. For example, multiples of publicly traded CROs in the sector are setting records. Structural changes in pharma outsourcing are also attracting private equity and non-traditional players to the space.

# Diagnostic lab services

Diagnostic testing has flourished as companies in this market serve pharma's need for companion and complementary diagnostics testing for clinical trials. As companies position themselves for growth, the convergence of the diagnostics ecosystem is accelerating. Labs are working more closely with diagnostics manufacturers to develop tests that cover a continuum of options for patients and physicians, from lab testing, to point of care, to near patient, to at home.

For example, to broaden its presence in the global market, Veracyte, a U.S. company specializing in genomic cancer testing, acquired HalioDx, a France-based biopharma services provider and maker of lab kits. In another example of ecosystem convergence, Labcorp is acquiring Toxikon, a CRO that provides nonclinical testing services. Labcorp views the acquisition as a means to extend its range of drug-development and medical device solutions, from discovery to market approval.[49]

The sharp decline in basic lab testing early in the pandemic was short lived. Business has largely returned to pre-pandemic levels as people resume many of their normal activities, including with respect to healthcare. Some types of testing have experienced higher volumes of business—for example, prenatal testing has benefited from the higher number of pandemic pregnancies and the volume of cancer testing continues to grow as people need more granular diagnoses as the basis for targeted drug therapies. At the same time, most clinical labs are still processing large volumes of COVID-19 tests.

Leading lab services companies recognize opportunities for growth, as well as the need to offset the loss of COVID-19-related revenue in the coming years. We see companies making several smart moves for the future.

- **Divesting noncore assets.** Companies are divesting noncore assets to raise money for investments in growth. For example, in 2021 Myriad Genetics sold its Myriad myPath lab to Castle Biosciences and its Myriad RBM lab to Q2 Solutions. The company also sold select operating assets and intellectual property, including the Vectra rheumatoid arthritis assay, to Labcorp. Myriad plans to use the total divestiture gross proceeds, which is expected to be approximately $380 million, to "fund investments in technology and commercial efforts."[50]

- **Investing in R&D.** Companies are accelerating their investments in innovations unrelated to COVID-19 testing. For example, Labcorp has established a venture fund to invest in start-ups developing biomarkers and companion diagnostics, mobile-health and digital diagnostics, and consumer-wellness solutions, among other areas. The fund has made more than 45 direct investments, deploying $150 million in capital.[51] Even as its COVID-19 testing business was flourishing, BioReference Laboratories introduced an in-home, digital platform for mobile specimen collection that provides patients with access to on-demand diagnostic services. The company views the platform as the "first of many digital health advances" focused on patient convenience.[52]

- **Making deals.** To fuel their growth ambitions, labs are partnering with or acquiring companies. For example, Veracyte also acquired Decipher Biosciences, a commercial-stage precision-oncology company focused on urologic cancer, for $600 million. Veracyte says the acquisition will not only accelerate revenue growth, but also allow the company to serve patients across the clinical-care continuum with diagnostic services for "7 of the 10 most prevalent cancers in the United States with highly differentiated and clinically impactful tests."[53] Labs are also being acquired. For example, Biotheranostics, a precision-medicine molecular lab, was purchased by Hologic for $230 million. The deal is expected to accelerate access to Biotheranostics' molecular-diagnostic tests for breast and metastatic cancers.[54]

[48] Source: "Welcoming analytics-driven digital marketing agency closerlook to the Fishawack Health pack," Newsroom Releases, Company website, June 8, 2021

[49] Source: "Labcorp to Acquire Toxikon, Expanding Nonclinical Development Testing Capabilities for Pharmaceutical, Biotech and Medical Device Clients," Press Releases, Company website, November 18, 2021

[50] Source: "Myriad Genetics Reports Third Quarter 2021 Results, Continues Strong Execution of Strategic Growth & Transformation Plans," Newsroom Releases, Company website, November 2, 2021

[51] Source: "Labcorp Venture Fund," Company website

[52] Source: "OPKO Health's BioReference Laboratories Introduces Scarlet Health, an In-Home Diagnostic Service to Expand Digital Health Access," Press Releases, Company website, January 13, 2021

[53] Source: "Veracyte to Acquire Decipher Biosciences," Newsroom Releases, Company website, February 3, 2021

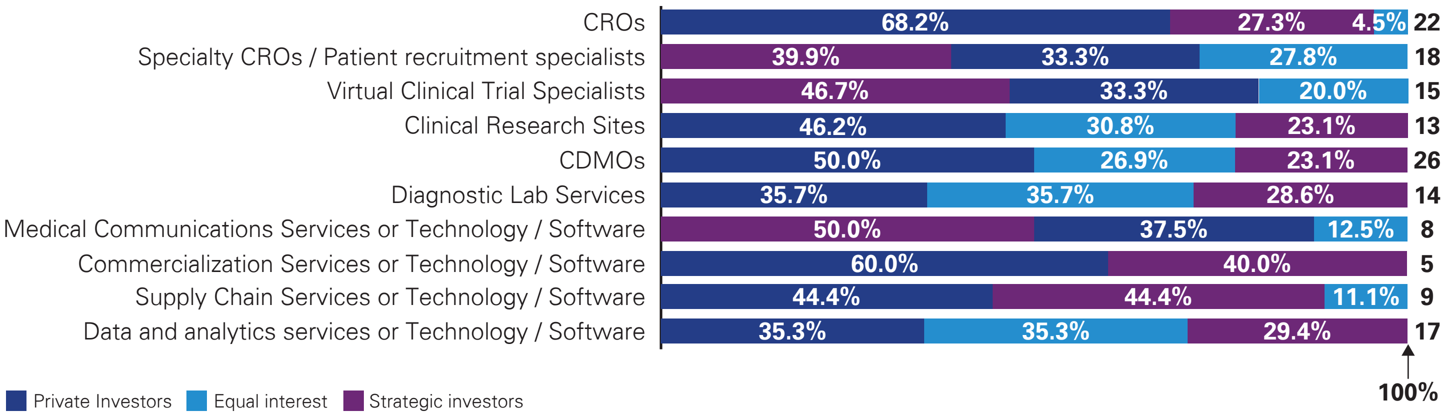
[54] Source: "Hologic to Acquire Biotheranostics, Leader in Molecular Tests for Breast and Metastatic Cancers, for Approximately $230 Million," Press Releases, Company website, January 5, 2021

## Outlook and investment considerations for 2022

The outlook for the next 18 months remains strong, and trends point to a continuation of intense deal-making activity. Both private equity and strategic investors have a positive outlook, but their areas of focus differ. Private equity is expected to focus more on CROs, commercialization services or technology, CDMOs, clinical research sites, and supply-chain services and technologies. Strategic investors are expected to focus more on medical communications services or technologies, virtual clinical trial specialists, supply-chain services and technologies, and specialty CROs and recruitment-services specialists (Exhibit 21).

### Exhibit 21. How different kinds of investors are focusing on biopharma services

**Q34. Where do you believe the majority of investment interest will come from?**

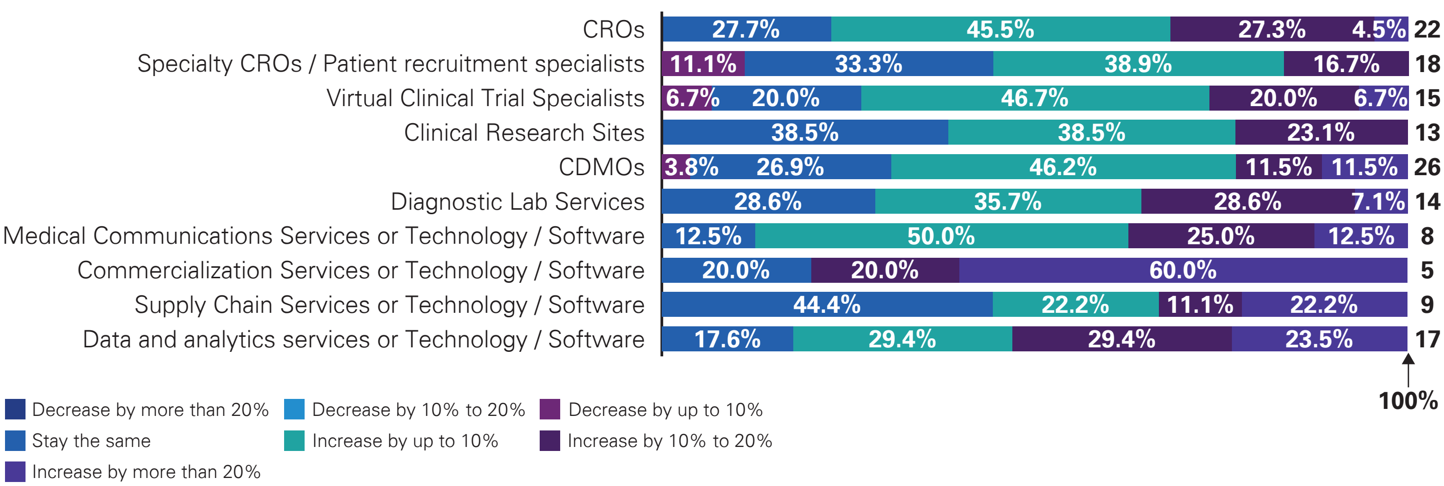



In our survey, most investors expected valuations to rise across all segments of biopharma services and diagnostic labs in 2022, with potential increases of 10 to 20 percent or more (Exhibit 22). In "commercialization services or technology," 60 percent of respondents expect to see valuations increase by more than 20 percent.

Survey respondents said that the top three areas for M&A activity in the subsector in 2022 are likely to be: (1) CDMOs, driven by a robust pipeline of innovative therapeutics (such as cell and gene therapies) as well as the pandemic and potential regulatory changes; (2) CROs, driven primarily by a robust pipeline of innovative therapeutics; and (3) data and analytics services or technologies, driven primarily by the maturing of early-stage companies associated with the digitization.

### Exhibit 22. Investors expect valuations to rise by 10 percent or more in most subsectors

**Q35. How do you expect valuations to compare to previous years?**



Investors' enthusiasm stems from a variety of tailwinds. Beyond addressing the pandemic's impact, biopharma services providers will play vital roles in helping biopharma companies achieve their objectives for more targeted and faster trials as well as risk mitigation. Although the subsector also faces challenges, these will tend to promote deal making as companies look to add capacity, build site-management and patient-recruitment capabilities, increase global scale, and gain expertise in specific therapeutic areas.

## Tailwinds and headwinds

### Tailwinds

- **Ongoing impact of COVID-19.** The pandemic continues to drive growth in biopharma services as biopharma companies need to test new vaccines, boosters, and therapies, and monitor interactions with other drugs and therapies.

- **Stratification of patient populations.** Many biopharma companies need smaller trials, more diverse participants, specific biomarkers, and shorter clinical-trial timelines. This is a growth opportunity for CROs that have the expertise and capacity to fulfill these needs.

- **Safety issues for biopharma.** Safety issues in clinical trials have hurt the potential of new platforms to produce commercial assets. To mitigate the risks, biopharma companies will rely even more on CROs' expertise for data capture and analytics and clinical-trial design. Some trials may also become longer and require more data.

### Headwinds

- **Scarcity of talent.** It is getting harder to find qualified personnel to keep up with demand from biopharma customers. Labor costs are rising and, so far, companies have been able to pass these costs through. CROs also have to be careful to avoid overcapacity if a slowdown occurs.

- **Decentralization of trials.** COVID-19 has created challenges for trial participation, resulting in decentralization of trials (for example, through virtualization and at-home collection). Companies that become the frontrunners in managing decentralization will gain an important advantage.

- **Supply-chain risks.** Many raw materials are sourced from China. Higher costs (stemming from supply-chain issues, for example) would hurt margins.

## The take-away

In 2022, objectives that gained paramount importance during COVID-19—such as accelerating speed to market, getting therapies to large and diverse populations, and enhancing patient access and convenience—will continue to shape demand for biopharma services and diagnostic lab services. Companies that have the capabilities and resources to help their customers achieve these objectives will position themselves for competitive advantage. Deal makers will play a key role in helping the companies separate themselves from the rest of the pack.

# Healthcare IT: Telehealth and beyond

Information technology continues to create more value in healthcare as digitization transforms every link in the value chain. The dramatic acceleration of telehealth adoption during the pandemic has helped set up healthcare IT for continuing double-digit growth.

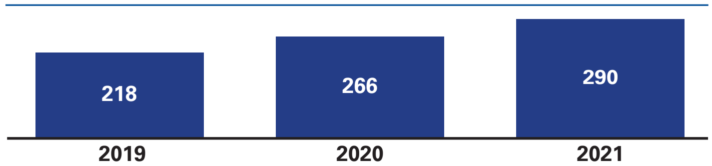
In our survey, respondents say telehealth is the most attractive target for IT investment now. When the economy went into lockdown in 2020, CMS loosened reimbursement restrictions so that patients could get remote care and some of these policies have been extended. The CHIME Digital Health Most Wired survey[55] found that 7 percent of patients used telehealth services in 2019, 32 percent in 2020, and 26 percent in 2021.

Investors clearly believe telehealth is here to stay and will be widely used in certain treatment areas, such as behavioral health. The industry is introducing more connected devices to support remote healthcare, including wearables and home-monitoring equipment, as well as distinctive new offerings in ambulatory, post-acute, and even acute care. Mega platforms are forming as smaller platforms are acquired.

Healthcare IT deals rose to 290 in 2021, from 266 in 2020 (Exhibit 23). But this modest growth in deal count included some of the biggest deals in all of HCLS. In December, for example, Oracle agreed to buy Cerner, an electronic health records vendor, for \$28 billion.[56] Other notable deals include: Invitae, a provider of genomics testing for consumers, plans to invest \$325 million to acquire Ciitizen,which allows patients to collect, organize, store, and share digital medical records to improve communication with their physicians and aid self-management of chronic conditions.[57] Datavant's merger with Ciox Health,[58] which will allow the merged company to securely share troves of longitudinal claims data and other information with providers, payers, and health data analytics and life sciences companies, government agencies, research institutions, and even consumers via patient-facing apps.

Investors also recognize that healthcare IT is at the heart of care-quality improvements. Digital technologies continue to help reduce costs and boost efficiency in hospitals and other care sites. But there is still much to be done to harness patient and clinical data to drive better patient outcomes.

**Exhibit 23. Healthcare IT acquisitions (2019-21)**




## How healthcare IT fared in 2021

Three-quarters of survey respondents said deal activity in 2021 had exceeded their expectations. In addition to the Oracle-Cerner deal, there was the \$17 billion acquisition of Athenahealth by Bain Capital and Hellman & Friedman. Athenahealth, which has a broad range of technology offerings that include electronic health records software and care-coordination platforms for both providers and patients, had been taken private in 2019 for \$5.7 billion by a group led by buyout firm Elliot Management.[59]

One attractive area for M&A in healthcare IT was middle-office systems, such as technologies that allow payers to realize more efficient use of data for care and utilization management, as well as care-delivery-network administration.

Acquisitions spanned consumer engagement, telehealth, network management, claims repricing, health and wellness platforms, and more. A few examples:

- **Hospital at home.** Mayo Clinic and Kaiser Permanente joined forces in May to scale up hospital-at-home efforts, investing \$100 million in Medically Home, an at-home acute-care company.
- **Remote patient monitoring.** In October, Best Buy agreed to acquire Current Health, which brings together remote patient monitoring, telehealth, and patient engagement in a single solution.[60]

[55] Source: "Healthcare's Most Wired: National Trends 2021," Chimecentral.org

[56] Source: "Oracle buys Cerner," company website, Dec. 20, 2021

[57] Source: "Invitae to Acquire Ciitizen to Strengthen its Patient-Consented Health Data Platform to Improve Personal Outcomes and Global Research," company website, September 7, 2021

[58] Source: "Datavant and Ciox Health Announce Merger, Creating the Largest Neutral and Secure Health Data Ecosystem," Datavant website, June 9, 2021

[59] Source: Mchael J. de la Merced, "Athenahealth's \$17 billion takeover is the latest private equity megadeal, The New York Times, November 22, 2021

[60] Source: Cindy Capitani, "Best Buy to Acquire Current Health to Advance Tech-Focused Patient Care," PYMNTS.com, October 12, 2021

- **Virtual care.** Cigna purchased MDLive, a low-cost alternative to urgent care clinics that uses telehealth to help patients connect with a doctor.[61]

- **Healthcare-focused SaaS deals.** Investor interest in software as a service (SaaS) remains high. Definitive Healthcare, which offers "healthcare commercial intelligence," went public in September and at the time of this writing had a market cap of more than $5 billion.[62]

- **Revenue cycle software.** R1 RCM, for example, agreed to pay $4.1 bilion for Cloudmed, which says it has 3,100 customers.[63]

- **IT carveouts by large healthcare organizations.** HMS Holdings, a healthcare technology, analytics, and engagement solutions provider, was sold to Gainwell, a portfolio company of Veritas Capital and Cotiviti, for about $3.4 billion in April.[64]

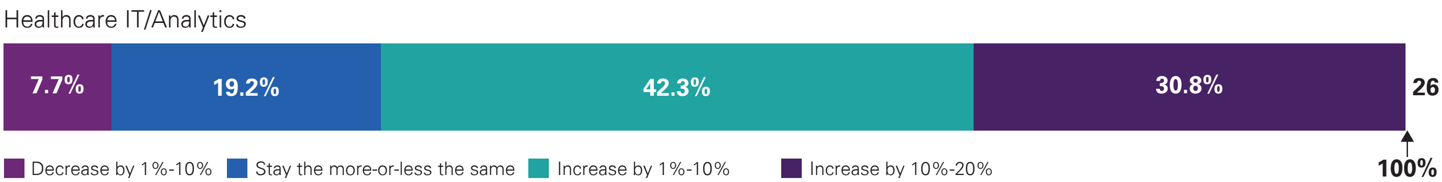
- **The increasing value of data.** Data assets are becoming more valuable to healthcare organizations, driving investment interest. Providers see the value in cross-organizational data sharing to improve clinical care, but these efforts require stringent security protocols and adherence to HIPAA rules.

## Outlook and investment considerations for 2022

Survey respondents ranked telehealth, electronic health records, and clinical workflow solutions as the most attractive for investment in the next 12 to 24 months, in part because these tools can ease the strain of staffing shortages. Three-quarters of survey respondents expect higher valuations in 2022 (Exhibit 24).

> We expect one of the next frontiers to be solutions that help connect data across apps, programs, platforms, electronic health records, and, eventually, health systems.

**Exhibit 24. How will valuations in healthcare IT change from 2021 to 2022?**




Although observers have long predicted that higher deductibles and pricing transparency would drive consumers to be more discerning about where they seek care, that possibility is now becoming a reality. The shift is due largely to the role of IT in easing the integration of clinical, financial, administrative, and other data.

Consumer-friendly apps are key to helping patients choose providers, while health and wellness apps will likely continue to proliferate for everything from medication management to healthy eating to chronic disease management, such as Livongo for diabetes and Hinge Health for chronic back pain. We expect one of the next frontiers to be solutions that help connect data across apps, programs, platforms, electronic health records, and, eventually, health systems.

[61] Source: Paige Minemyer, "Cigna's Evernorth completes acquisition of virtual care provider MDLive," Fierce Healthcare, April 19, 2021

[62] Source: "Market Watch," Definitive Healthcare Corp. (DH) U.S.: Nasdaq Overview November 24, 2021

[63] Source: Neha Gupta, "R1 RCM to Acquire Cloudmed for $4.1 Billion," nasdaq.com, January 12, 2022

[64] Source: Jason Roop, "Gainwell Technologies acquires health care tech company for $3.4B," Virginia Business, April 7, 2021

## Tailwinds and headwinds

### Tailwinds

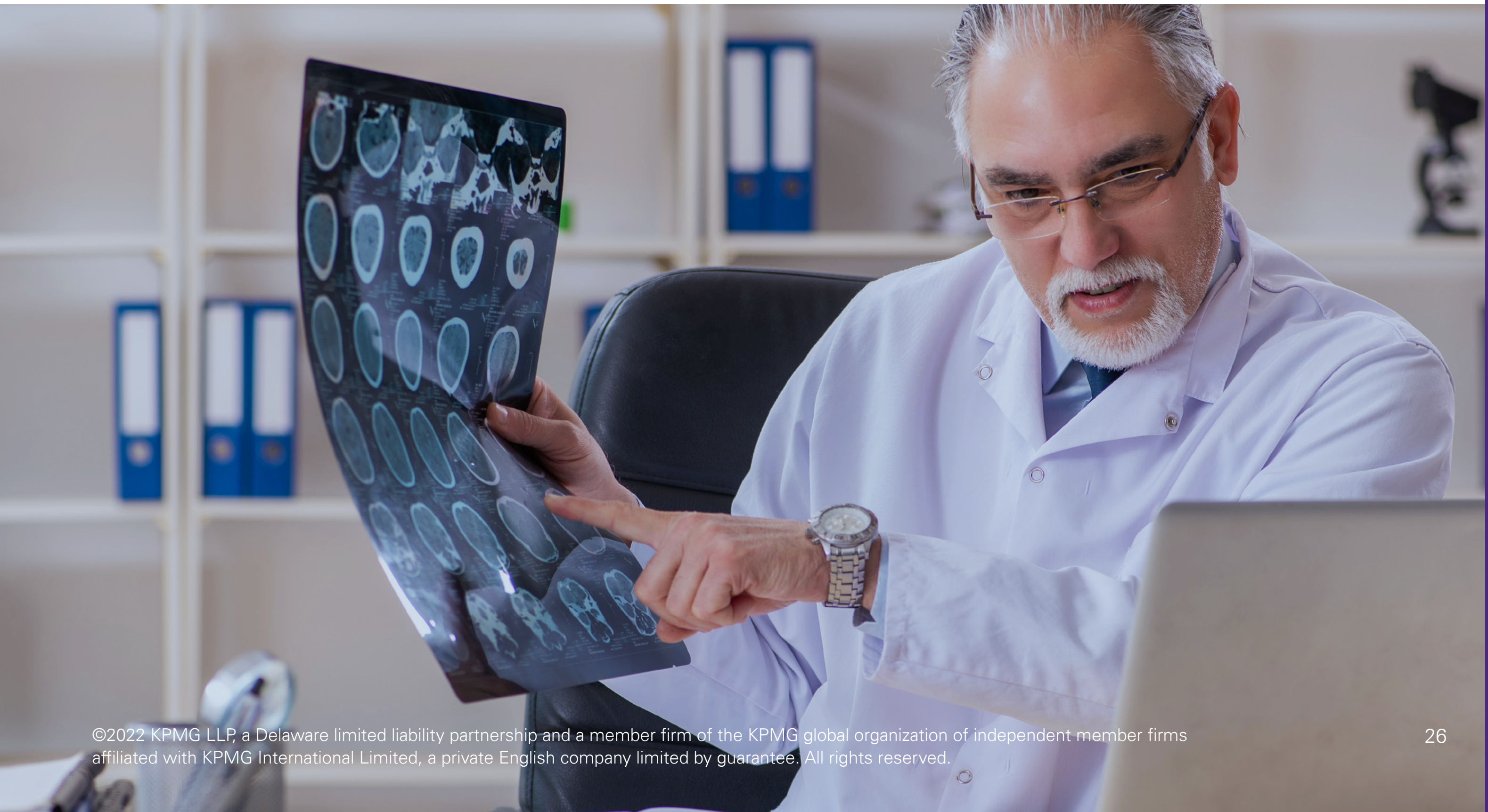
- **More money and talent** are flowing into healthcare IT, spurring new rounds of innovation.
- **Healthcare consumers have embraced virtual care.** The emergence of Omicron and other variants of COVID-19 may drive new growth in telehealth usage.
- **Nursing and other staffing shortages** will endure for at least a year, driving demand for digital tools that can boost efficiency and improve outcomes in every sphere of care.

### Headwinds

- **Interoperability** remains a major challenge to providers—and a concern to investors—as organizations seek to integrate new digital tools with legacy systems.
- **Restrictions on access** to and use of patient data present challenges to providers seeking new insights into care modalities to drive better outcomes.
- **Valuations** are likely to keep rising as healthcare IT continues to grow faster than most other subsectors.
- **Reimbursement** for telehealth and other forms of virtual care may lag advances in the technology and pressure from consumers.
- **Tougher antitrust enforcement** could hinder some hospital mergers and limit healthcare IT investment.

## The take-away

Healthcare IT will generate more value for stakeholders, providing extraordinary new insights into every aspect of care from diagnosis and treatment to compliance, billing, collections, and even fraud. As the pace of innovation accelerates, investors with a deep understanding of products, needs, and players will find major opportunities. As telehealth becomes a commodity, many of the winners will improve outcomes and lower costs with predictive modeling and proactive care management.



# Hospitals and health systems: Still pinned down by pandemic effects

With the Delta and Omicron variants, the pandemic continues to disrupt business for hospitals and health systems. And many institutions struggle with labor shortages that have been exacerbated by the pandemic. U.S. hospitals were projected to take an estimated $54 billion hit to net income in 2021, according to an American Hospital Association-backed study.[65] But large for-profit chains are mostly back in the black and major hospitals and health systems are again turning their attention to growth strategies.

Deal volumes rose in 2021, with for-profit systems continuing to invest in horizontal and vertical integration. They are growing and diversifying revenue by buying physician practices, ambulatory surgery centers, and urgent-care and post-acute-care assets. They are also investing in a wide range of clinical and nonclinical technologies, including telehealth, predictive analytics, and other digital capabilities. Survey respondents in this subsector said they expect to invest in ancillary capabilities, healthcare IT, and urgent care in the year ahead.

Meanwhile, some large systems are reshaping their portfolios by exiting select markets and investing in others that offer greater opportunities. Tenet Healthcare, for example, sold five hospitals in Florida for $1.1 billion in June[66] and announced in November that it would acquire more than 90 ambulatory surgery centers for $1.2 billion.[67]

## How hospitals and health systems fared in 2021

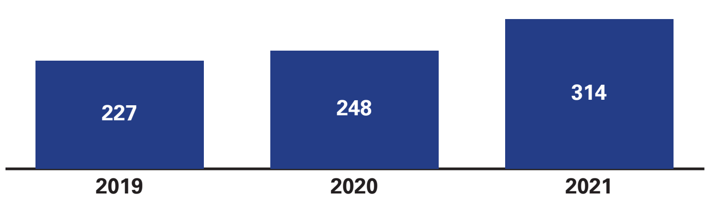
As 2021 began and the vaccine rollout was underway, it looked like hospitals and health systems might start to return to normal operations. But the Delta and Omicron variants held back the recovery in the hospital business that began in late 2020. Yet deal making continued, with a total of 314 transactions in 2021, up more than 26 percent from 2020 (Exhibit 25).

Staffing shortages have become a huge pain point for health systems. In addition to retirements (due to both aging and burnout), many nurses have given up fulltime jobs and switched to better paying temporary and traveling assignments. While COVID-19 initially hit smaller and rural hospitals hardest, staffing challenges across clinical, nonclinical, and support positions are now impacting the operations and margins of hospitals of all sizes.

Growth varied widely by state, often based on the impacts of COVID-19. Patient volume rose by double digits in Virginia and North Carolina, for example, and fell by more than 17 percent in Florida and Colorado.[68]

- **Creative staffing solutions:** Margins continued to be squeezed between depressed volumes and rising costs, specifically around labor and supplies. More healthcare systems addressed the staffing challenge with creative solutions that extended beyond wage increases and signing bonuses. HCA, for example, bought three nursing schools.[69] In May, Boston University Medical School announced a five-year partnership with St. Elizabeth's Medical Center and Steward Health Care.[70] The University of South Florida launched a pilot "excellence in nursing" program with Sarasota Memorial Health Care, which focuses on coaching and other wellness strategies to help nurses avoid burnout and stay in the profession. Other providers continue to seek partnerships with health systems outside their regions to find med students and residents and build clinical research capabilities. Christus Health and Texas A&M College of Medicine, for example, signed an affiliation in October that will help north Texas institutions recruit and train more physicians.[71]

**Exhibit 25. Hospital and health-system acquisitions, 2019-21**




Source: Capital IQ

[65] Source: "Report projects U.S. hospitals will lose at least $54B in net income this year," American Hospital Association, September 21, 2021

[66] Source: Samantha Liss, "Tenet to sell 5 Florida hospitals for $1.1B as it doubles down on surgery centers," HealthcareDive, June 17, 2021

[67] Source: Tara Bannow, "Tenet to buy $1.2 billion stake in 92 more ambulatory surgery centers," Modern Healthcre, November 8, 2021

[68] Source: Credit Suisse Hospital Volume Tracker, August 18, 2021

[69] Source: Sapna Bagaria, "HCA Healthcare Acquires Galen, Expands Nursing Schools," Yahoo! Finance, January 9, 2020

[70] Source:"BU School of Medicine Adds St. Elizabeth's Medical Center as New Teaching Hospital," BU Today, May 3, 2021

[71] Source: "CHRISTUS Health announces new affiliation with Texas A&M," CHRISTUS press release, October 6. 2021

## Notable transactions

Notable deals in 2021 included Boston Children's Hospital's effort to improve its mental health offerings by acquiring Franciscan Children's Hospital, announced in October.[72] LifePoint Health agreed to acquire Kindred Healthcare in June, creating a new company with 79 hospital campuses in 25 states.[73] Spectrum Health and Beaumont Health hope to combine to create a system in Michigan with 22 hospitals, 64,000 employees, and $13 billion in revenue (pending FTC approval).[74]

Several notable transactions were abandoned in 2021. Beaumont called off a proposed merger with Summa Health in May. Sanford Health canceled its merger with Intermountain Healthcare in March after the unexpected departure of Sanford's longtime president and CEO. Sentara Healthcare and Cone Health called off their 17-hospital merger in June, saying they would "be better served by remaining independent."[75]

The number of new partnerships, joint operating agreements, and service-line joint ventures rose, partly in response to increasing antitrust scrutiny of full mergers, but also because these deals can be executed more quickly with less capital.[76]

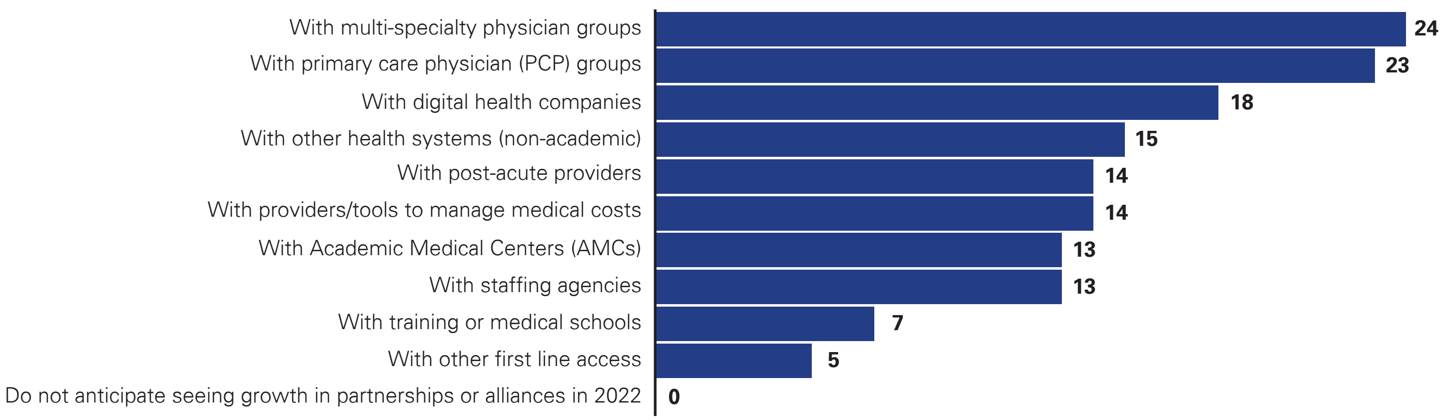
## Outlook and investment considerations for 2022

We expect many larger health systems to continue to perform well in a challenging marketplace, although some will continue to struggle financially due in large part to rising labor and supply costs.

As smaller hospitals and health systems continue to struggle, many that have remained independent may finally be forced to partner with, or be acquired by, larger institutions. We expect the most capable health systems to keep pursuing scale and market-share growth with new business models and revenue streams, as well as a wider range of services (Exhibit 26).

**Exhibit 26. Where hospitals and health systems are looking for deals**

**Q40. What types of partnerships or alliances do you anticipate health systems will pursue in 2022? (multiple selections)**




- **The talent shortage.** Demand for nurses rose during the pandemic and will keep rising. Nurses are leaving the profession due to pandemic burnout and age—almost half of RNs are now over 50. Meanwhile, demand continues to grow: the number of Americans 65 and older will grow by about two million by 2030. According to the American Nurses Association, 100,000 nursing positions will remain unfilled in the years ahead, with no relief in sight.[77] Labor challenges will vary widely by geography. California may face a shortfall of more than 44,000 RNs by 2030, while Florida could have a surplus of more than 53,000.[78]

  Providers will be required to devise new and innovative approaches to training, recruiting, and retaining nurses, as well

[72] Source: Marissa Plescia, "Boston Children's wants to acquire Franciscan Children's in move to upgrade mental healthcare," Hospital Transactions & Valuation Issues, Becker's Hospital Review, October 13, 2021

[73] Source: Alia Paavola, "LifePoint, Kindred to create new company with 79 hospitals: 8 things to know," Hospital Transactions & Valuation Issues, Becker's Hospital Review, October 26, 2021

[74] Source: Jacqueline LaPointe, "Beaumont Health, Spectrum Health Announce Merger Plans," Revcycle Intelligence, June 18, 2021

[75] Source: "Cone, Sentara cancel merger plans, but future consolidation seems inevitable," NCHealthNews, June 7, 2021

[76] Source: Alamance News, June 2, 2021

[77] Source: Workforce, American Nursing Association website

[78] Source: "The 2021 American Nursing Shortage: A Data Study," University of St. Ausgustine for Health Sciences, May 2021

as ways to sustain quality and patient outcomes with fewer resources. Hospitals will continue to evaluate their physician partnerships to supplement their in-house medical staff. These arrangements include everything from staff privileges to physician-services agreements (PSAs), joint ventures, and employment. Many large hospitals are hiring more physicians rather than relying on PSAs, which could negatively impact private practices more than PE platforms.

## Closing the staffing gap

Nurses and other healthcare providers were in short supply before the pandemic began. This trend was exacerbated by the pandemic and burnout: in 2021, about one in five nurses quit their jobs, and many of those still on the job have considered quitting.[79] Here are some of the steps that providers are taking to maintain staffing levels:

- Offering more generous signing bonuses and base pay, along with new rewards and recognition for existing staff
- Expanding cross-specialization and on-the-job training, including training nurses in the latest technologies and procedures in fields of their choice, and, in some cases, encouraging them to pursue advanced degrees
- Creating more flexible and technology-based staffing models with some shifts as short as three hours
- Tapping staffing agencies, managed service providers, foreign-trained nurses, and even the National Guard. More hospitals are hiring nurses directly from campuses
- Harnessing robotics and other new technologies, such as telenursing in high-risk ICUs and long-term care
- Focusing more on employee well-being, including friendlier sick-leave policies and employee assistance programs

**Investing in innovation.** Large health systems are funding innovation incubators to develop new technologies and capabilities. These innovations can be for internal use and some may be turned into commercial offerings. UPMC Enterprises, for example, founded Curavi Health, a telemedicine company, to improve post-acute and nursing-home care.

Hospitals of all sizes will continue making new investments in telehealth, data analytics, apps for monitoring chronic conditions, and other technologies to boost access, efficiencies, and the physician and patient experience. Some flexibilities on telehealth reimbursements granted during the COVID-19 public health emergency have been extended through 2023. Additions to the Medicare telehealth services list include certain services that otherwise would have been removed from the list at the end of 2021, when the emergency ended. However, it should be noted that even those services included on the list are still subject to geographic restrictions, particularly in the area of mental health.[80]

**More patient technology.** Health systems are also investing in patient-monitoring technology, from apps to track health and wellness (meditation, recipes, exercise, etc.) to those that help patients manage hypertension, diabetes, and other chronic conditions. Mount Sinai Hospital, for example, launched a mobile app in 2021 that helps patients manage their medical information, connect with doctors, and learn about available services.[81] UC San Diego Health is developing and commercializing technologies that allow remote patient monitoring at home or even in the hospital.[82] One example is an AI-based system to help prevent sepsis. In all, more than 350,000 consumer-health apps are now on the market, according to IQVIA.[83]

We expect that value-based care models, such as capitation for some patient segments, will spur adoption of monitoring as well as collaboration and data interoperability. Sharing data between patients, payers, and providers can help improve access and lower the total cost of care.

**Regulators taking a closer look at concentration.** The FTC now requires companies to get prior approval for any transaction "affecting each relevant market for which a violation was alleged" for at least ten years. The agency may also seek prior approval provisions for geographic markets beyond just the markets immediately affected by the merger. In New Jersey, 25 state attorneys general urged a court to block the merger of Hackensack Meridian Health and Englewood Health, citing the risk of higher prices and lower-quality care.

**More billing transparency**. As the Centers for Medicare and Medicaid Services (CMS) seeks to make hospital pricing more transparent, it has proposed higher penalties for noncompliance based on bed count. Penalties could top $100,000 annually for institutions with 30 or fewer beds and more than $2 million for those with more than 550. As patients shop for care in the years ahead, low-cost providers could benefit, leading to additional revenue and margin pressure in some geographies.

[79] Source: "Nearly 1 in 5 Health Care Workers Have Quit Their Jobs During the Pandemic," Morning Consult, Oct. 4, 2021

[80] Source: "Medicare Proposes to Extend Coverage of Certain Telehealth Visits Through the End of 2023," capc.org., July 16, 2021

[81] Source: "Mount Sinai Health System Launches Comprehensive Mobile App for Patients," press release, September 7, 2021

[82]Source Jackie Carr, "UC San Diego Health Launches New Center to Spur Patient-Centered Technologies," Newsroom Releases, Company website, September 2, 2021

[82] Source: Emily Olsen, "Digital health apps balloon to more than 350,000 available on the market, according to IQVIA report," mobilhealthnews, August 4, 2021

[83] Source: Emily Olsen, "Digital health apps balloon to more than 350,000 available on the market, according to IQVIA report," mobilhealthnews, August 4, 2021

Private equity investors will continue to pay high multiples for assets they can combine to realize efficiencies. Research by Health Affairs shows that hospitals are quicker to adopt profitable new services and technologies after being acquired by private equity firms—one way that investors can justify today's high multiples.[84]

Vertical integrations will continue in 2022 as hospitals continue to acquire and/or partner with physician practices, ambulatory surgery centers, urgent care, post-acute care, and behavioral health providers (although such deals are likely to face regulatory scrutiny). Health systems will increasingly attempt to re-enter businesses they previously found challenging, now that there are vastly different reimbursement models and operating and cost structures, which often include skilled nursing facilities and home health capabilities. With these deals, they can provide a full continuum of care—the foundation of success in value-based care models.

More health systems are preserving their flexibility and capital by pursuing joint ventures rather than acquisitions, partnering with physician practices or for-profit health technology companies, for example. We expect partnerships, joint operating agreements, and service-line joint ventures to remain attractive as they typically create value more quickly than mergers and acquisitions, particularly under the umbrella of a powerful, respected brand and an experienced operator that can build market share and slow patient leakage.

In many cases, hospitals and health systems are buying local or regional practices that can be aggregated into centers of excellence in a specialty such as oncology. Partnerships are likely to appeal to academic medical centers and children's hospitals that can benefit from scale.

## Tailwinds and headwinds

### Tailwinds

- **Demographics.** The aging of the population and greater longevity will continue to drive overall growth in the industry. By 2030, all baby boomers will be 65 or older.
- **Beyond COVID-19.** The Omicron variant has been a setback for hospitals, but overall, the industry has learned to adapt. COVID-19 will remain a fact of life and, between severe outbreaks, health systems can start working off the backlog of postponed elective procedures and get back to normal volumes.

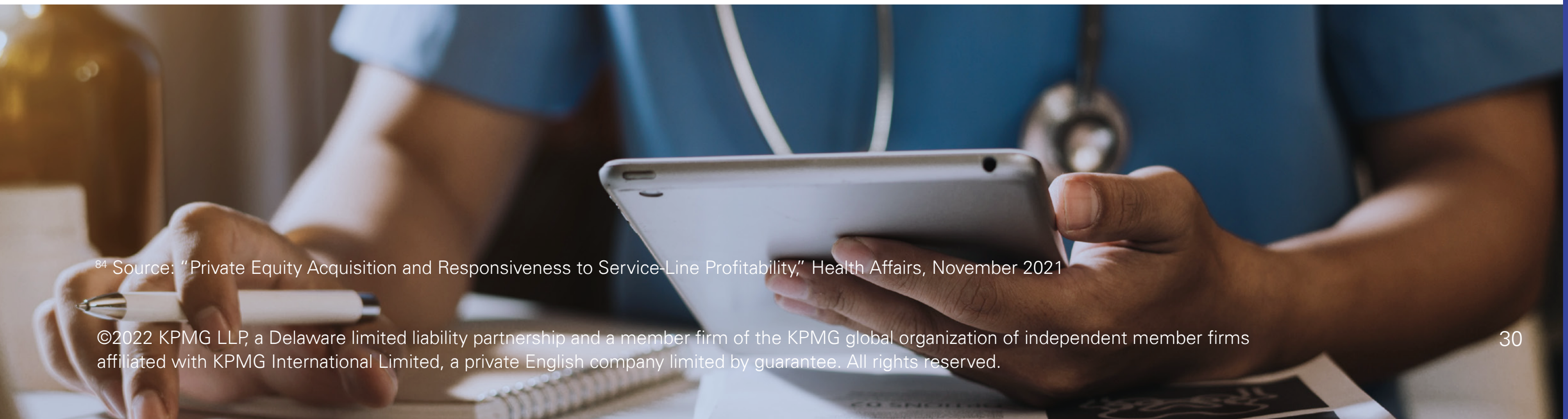
### Headwinds

- **Regulatory and legal.** The Biden administration and FTC are looking at the impact of hospital consolidation on the costs and quality of care.
- **Outpatient care.** The continuing push for outpatient care helps ambulatory care businesses, but can reduce hospital volumes.
- **Talent.** The labor shortage will continue to challenge hospitals and health systems, limiting their ability to deliver more services and impacting profitability in some systems.

## The take-away

Hospitals and health systems now know how to treat COVID-19 patients, easing the all-hands-on-deck pressures of the early pandemic. Industry leaders are looking ahead again, investing in physician practices, infrastructure, technology, and other growth drivers. Many feel they need to add scale to drive revenue and share and combat rising costs.

Demographics will continue to drive steady annual revenue growth, estimated to be in the low single digits. In this environment, the best performers will be institutions that provide a full continuum of care, excel in value-based care models, provide exceptional patient and physician experiences, manage rising costs, and use partnerships and technology to improve access, quality, and efficiency.



[84] Source: "Private Equity Acquisition and Responsiveness to Service-Line Profitability," Health Affairs, November 2021

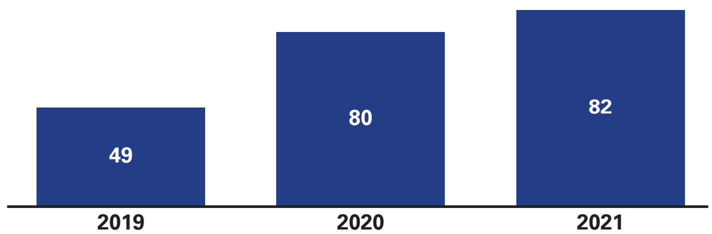
# Behavioral health: Demand for services is high, so is investment interest

As demand rises and reimbursement remains strong in behavioral health—mental health counseling, substance abuse treatment, weight loss support, and psychiatry—investors continue to pursue acquisitions, raising valuations. Many acquisitions are predicated on scale advantages, operating efficiencies, and the ability to negotiate with payers for higher rates. Even before the spike in patients suffering with depression, anxiety, and substance use disorders during the pandemic, demand was growing faster than the number of new practitioners.

The increase in usage is driven by recognition of long-term value by employers and payers, as well as the decreased stigma around seeking treatment. Still, volumes could keep growing: according to the NIMH, more than 50 million Americans have a mental, behavioral, or emotional disorder—and only about half receive treatment.[85]

The number of deals in behavioral health rose to 82 in 2021 (Exhibit 27). And behavioral health topped the list of specialties our survey respondents cited as most likely targets for investment in the next 12-24 months. More than 80 percent of respondents expect valuations to rise, and nearly 70 percent expect to increase their deal activity in behavioral health in 2022.

**Exhibit 27. Behavioral health acquisitions, 2019-21**




Source: Capital IQ

## How behavioral health fared in 2021

Demand for behavioral health rose sharply in 2021. More than half of employees felt some sort of burnout in the past year, and half of U.S. healthcare workers have experienced mental health challenges since the pandemic began, up from only 11 percent in 2019.[86] One in three Americans now has signs of clinical depression or anxiety.[87] Senior leaders across industries recognize the vital importance of employees' mental health and well-being, and payers know that unaddressed behavioral health conditions can cause or exacerbate other chronic conditions, costing health plans up to 4.5 times more than patients without behavioral health issues.[88]

In the U.S., nearly all in-person talk therapy went virtual during the COVID-19 pandemic, reducing no-shows and lowering costs for providers and patients alike, especially in rural areas. Teletherapy also boosted efficiency and allowed providers to scale beyond their immediate geographies. Use of teletherapy is likely to keep growing. The pandemic has proven how convenient teletherapy can be, and therapists and patients agree that teletherapy is as effective as in-person treatment.[90]

Even as the telehealth trend accelerates, staffing is becoming more challenging for traditional health systems and behavioral health providers, particularly in more rural areas where trained practitioners are scarce. Burnout among practitioners is having an impact on staffing as well: skilled workers increasingly seek part-time, flexible, and work-from-home positions, and roughly one in five is at least considering leaving the profession. Figures from the HRSA suggest that behavioral health agencies would need to hire more than 6,000 workers to close the staffing gap.
To address this problem, Filton and some other behavioral health providers are seeking joint ventures with acute-care providers.

Respondents to our survey ranked three behavioral health services of greatest interest for investment in 2022: medication management, outpatient psychiatric care, and psychotherapy. Many investors are focused on psychiatry practices, where some EBITDA multiples rise well into the mid-double digits. Substance abuse treatment slipped in the rankings despite more than 100,000 overdose deaths in 2021, a record high.



[85] Sources: "Mental Illness" and Statistics, National Institutes of Mental Health

[86] Source: "Symptoms of Depression, Anxiety, Post-Traumatic Stress Disorder, and Suicidal Ideation Among State, Tribal, Local, and Territorial Public Health Workers During the COVID-19 Pandemic," CDC, July 2, 2021

[87] Source: "Anxiety and Depression Household Pulse Survey," CDC

[88] Source: On Trak investor presentation, August 2021

[89] Source: Claudia Wallis, The Pandemic Has Created a 'Zoom Boom' in Remote Psychotherapy," Scientific American, January 1, 2022

Examples of major investments in 2021 include Centene's acquisition of Magellan Health for $2.2 billion and Odyssey Behavioral Healthcare's acquisition of Shoreline Center, which focuses on treatment for eating disorders. In October, SonderMind acquired Qntfy, a predictive analytics platform, to provide more data-driven, personalized mental health services.

Several other trends are driving interest in the subsector. Esketamine, which was approved by the FDA in 2020 for treatment-resistant depression, requires infusion, creating a new investor opportunity in esketamine clinics. Investor interest remains strong in inpatient and outpatient treatment for autism-spectrum disorders, thanks to promising treatments such as applied behavior analysis and medications including Risperidone, selective serotonin reuptake inhibitors, antianxiety medications, and stimulants, which often qualify for commercial reimbursement.

## Outlook and investment considerations for 2022

Strategic investments can help address perennial behavioral health challenges across segments. Survey respondents looking to acquire behavioral health providers, clinical practices, and treatment facilities ranked three goals highest: expanding or broadening provider networks; acquiring new capabilities, such as telehealth and patient analytics; and gaining capacity to expand services. Some other investors aim to acquire assets and expertise that will help them move toward value-based payment models.

Rollups of outpatient mental health providers will create larger, more diversified entities. And we expect physician practices to remain interested in behavioral health investments as they pursue practice rollups. Demand for substance-abuse treatment will almost certainly continue to rise. More providers will become certified in applied behavior analysis, which is built on a deep understanding of how people learn and what motivates their behavior. This will enable providers to expand beyond autism-spectrum disorders to treat people suffering from anxiety, depression, and substance-use disorders.

Many employers are acquiring or building behavioral health programs in-house as they recognize the value of supporting employees as "soft providers" of care.

Disruptors and innovators will continue to look for opportunities, as will larger entities. Billions of dollars in investments will continue to flow to technology-enabled behavioral health services, platforms, and niche providers.

### Tailwinds and headwinds

**Tailwinds**

- **Demand is high and rising** due to widespread mental and emotional challenges resulting from the pandemic.
- **Telehealth options** reduce no-shows and could help providers reach more patients.
- **Increasing reimbursement** for select providers by commercial payers and employers who recognize the value of behavioral health services.

**Headwinds**

- **Staffing** is a growing challenge. Providers are having difficulty finding, recruiting, and retaining qualified professionals. This was a challenge before the pandemic but is even more acute now, particularly in certain geographies and specialties, including psychiatry and ABA therapy.
- **Reimbursement pressures** remain an issue, particularly payer mix and Medicare/Medicaid reimbursement.
- **Utilization management** programs and policies remain a concern, as the shift to value-based care slows.

## The takeaway

A mental health crisis has emerged in the wake of COVID-19, driving demand for behavioral health as millions of people recognize that they need treatment. Providers will continue to be reimbursed for telehealth visits and will therefore continue employing teletherapy to scale their practices and provide consumers with more access and treatment options. Larger providers will also see better reimbursement rates as the industry continues to move toward value-based care, which is likely to sharpen investor interest in rollups and acquisitions.

# Specialty physician practices: Strong investor interest despite ongoing disruption

We continue to see strong volume trends and rising valuations in specialty physician practices. In 2021, specialty physicians were hoping for relief from the effects of the pandemic, but the Delta and Omicron variants forced millions of patients to postpone elective procedures. Nevertheless, investor interest—especially among private equity firms pursuing rollups—remains high. These investors believe they can get value from specialty practices by boosting front- and back-office efficiencies, using advanced analytics to improve patient flow, and harnessing telehealth as a low-cost option for expanding patient access and meeting patient expectations for more convenient care.

One of the most compelling value propositions for deals in this subsector is the industry-wide shift from inpatient to outpatient care, as CMS and payers push for value-based care models that reward providers for performing more procedures outside of hospitals.

Seven in ten respondents to our survey reported conducting more deals in specialty practices than they had anticipated at the beginning of the year. Overall, physician practices were more appealing to investors than any other healthcare sector other than healthcare IT.

During the pandemic, practices operating under a capitation model have been more resilient than those operating under fee-for-service models. We expect more fee-for-service physicians, who have been whipsawed by volatile demand over the past two years, to embrace value-based care and alternative payments. In our survey, most owners of physician practices who contemplated selling to an organization using risk-based compensation said they expect to sell to a private equity firm. For investors, the No. 1 reason to buy risk-based physician practices was to grow in new markets.

## How specialty physician practices fared in 2021

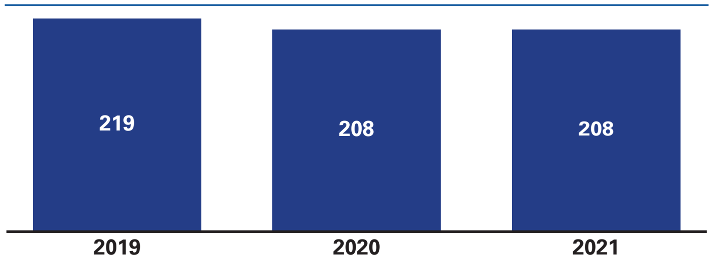
Even as patient volumes ebbed and flowed, many physician practices boosted efficiencies by adopting innovative technologies and improving back-office functions. Telehealth improved access and sustained revenues in specialties such as behavioral health. On the other hand, telehealth is only beginning to impact specialties such as allergy and ophthalmology.

Established industry leaders continue to grow. For example, we see platform consolidation in dermatology, dental, ophthalmology, and physical therapy—specialties that focus primarily on elective procedures. Behavioral and women's health platforms are growing and trading, with newer deals emerging in GI, urology, nephrology, and cardiology, along with other specialties that serve patients with chronic conditions. Interestingly, the most appealing specialties cited by our survey respondents were behavioral health, cardiology, orthopedics, and urgent care.

Investors pursuing rollups, especially at high multiples, must eventually find efficiencies, improve back-office functions, and upgrade operating systems. Complexities include ownership structures, varying physician-compensation models, whether the practice has adopted a management services organization (MSO) model, and the need to transition from manual to automated systems. (For more on the technologies that can help rollups succeed, please see the section on healthcare IT).

The impact of the Delta and Omicron variants, and the speed of the recovery, have varied widely across specialties and geographies. But for some types of practices, EBITDA multiples traded in the teens. A total of 208 deals were announced in 2021, in line with the number in 2020 (Exhibit 28).

**Exhibit 28. Specialty-practice acquisitions, 2019-21**




Source: Capital IQ

Many specialty practices will continue to partner or divest portions of their practices to reduce operating costs, attract capital, and, in some cases, restore physician compensation back to pre-pandemic levels. At the beginning of the pandemic, compensation dropped sharply as volumes fell. Earnings had rebounded for many physicians by the end of the year, however, in some cases by shifting in-person visits to virtual care, according to research by Medscape.

### Four-legged patients getting more attention

The pandemic has put a premium on veterinary businesses, as pet ownership has surged. An estimated 800 to 1,000 companion animal practices were rolled up in 2021. That's up from 700 to 800 in 2020. EBITDA multiples have moved from the mid-teens into the mid-twenties.[90]

## Outlook and investment considerations for 2022

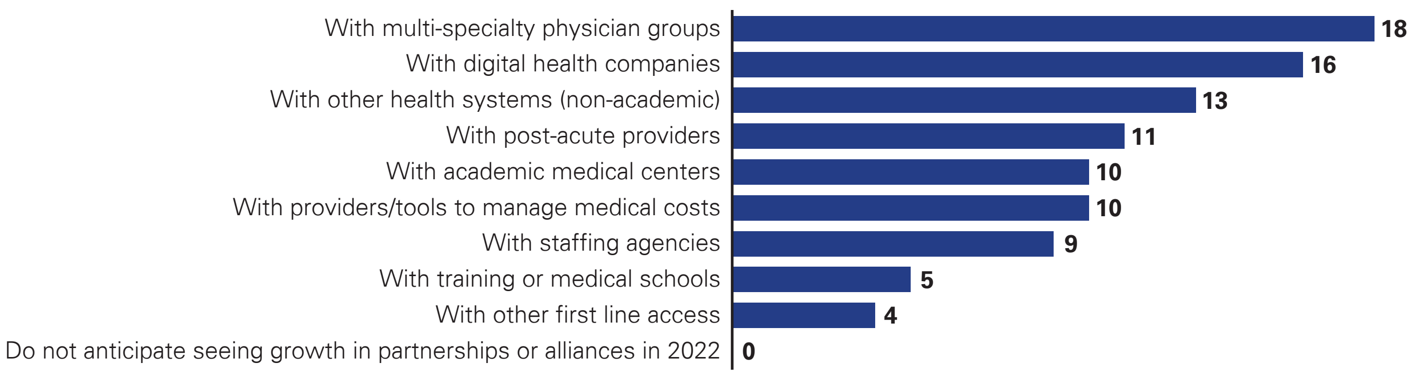
Specialty practices will continue to face staffing and supply challenges that may impact financial performance and operations. Nevertheless, we expect deal activity to keep rising in many specialties, including podiatry, nephrology, neurology, women's health, and cardiology. Orthopedic surgery should also continue to be active, often in combination with neurosurgery. For example, seven orthopedic practices in New Jersey, with more than 100 physicians, merged to form Ortho Alliance NJ. Six orthopedic groups in Texas merged to form OrthoLoneStar with more than 150 physicians, 40 locations, and 1,000 employees.[91]

According to respondents to our survey, investors' top three priorities are expanding provider networks, adding new services in current and/or new markets, and acquiring assets and expertise required for value-based payment initiatives.

Some investors, including hospitals and health systems, will seek to acquire practices to gain turnkey telehealth capabilities, while others will look to gain expertise in important specialties. More health systems are preserving their flexibility and capital by pursuing joint ventures with physician practices rather than outright acquisitions (Exhibit 29).

**Exhibit 29. Telehealth is an important capability for acquirers**

**Q40. What types of partnerships or alliances do you anticipate health systems will pursue in 2022? (multiple selections)**




[90] Source: Ross Kelly, "Pandemic hastens ongoing trend in veterinary consolidation," VIN News Service, December 30, 2021

[91] Source: Alan Condon, "5 orthopedic practice mergers involving 300+ physicians total," Becker's Spine Review, May 18, 2021



## Tailwinds and headwinds

### Tailwinds

- **Demographics forces** continue to drive demand. These include the aging population, longer lifespans, and a rising number of patients with one or more chronic conditions.
- **Physicians frustrated** by the challenges of running increasingly complex businesses may be more willing to consider sales and partnerships.
- **Elective procedures** could start to return to normal volumes if the pandemic eases.
- **New technologies** will continue to improve and boost the efficiency of physician practices.

### Headwinds

- **Staffing and supply** challenges will continue through 2022.
- **Industry trends** such as rising preferences for home health and telehealth may compress revenues and raise reimbursement challenges.
- **The shift toward value-based payments** will accelerate, presenting challenges to practices that still take a fee-for-service approach.

## The takeaway

A wide range of specialty practices will continue to offer attractive opportunities for investors—and more physicians will be open to offers, given rising multiples and the challenges of managing practices and negotiating with payers. Many investors will need to invest in MSO and back-office capabilities, but the aging population and inexorable rise of chronic conditions will continue to drive long-term growth in many specialty practices, regardless of how the economy performs.

# Home health and hospice care: Rising complexity and investor interest

The fragmented home health and hospice sector continues to appeal to investors, due to demographic and social trends, rising reimbursements, and the shift to home care from higher-acuity settings, which accelerated during the pandemic. In 2021, home health and hospice businesses were hit particularly hard by labor shortages, a trend that factors heavily into M&A decisions. At the same time, complex regulatory compliance requirements, particularly for companies operating under value-based payment models, may encourage the many "mom and pop" organizations among the nation's 34,000 small providers to sell out to the 50 or so large organizations that now account for nearly 30 percent of industry revenues.[91]

COVID-19 continues to affect the industry in multiple ways. High COVID-19 death rates among the elderly reduced demand for hospice care. But the pandemic drove demand for at-home treatment, helping the home health business.

Demand for assets in home health and hospice remains strong and sellers can expect attractive offers—some EBITDA multiples hit the mid-teens in 2021, up from last year and pre-pandemic levels. Still, making these acquisitions accretive can be challenging because many small and medium-sized providers have underinvested in people and technology, which may hinder post-deal synergies. Severe staffing challenges have also prevented many of these businesses from growing, which forces buyers to make additional investments. Some investors are looking with more scrutiny at potential acquisitions in states with certificate-of-need laws, which can create higher barriers to entry.

Home health and hospice businesses are positioned to continue recovering. Older baby boomers are entering their mid-seventies, driving demand for services. Even at today's valuations, buyers can generate outsize returns if they conduct effective, data-driven due diligence, manage the revenue cycle, and drive operational efficiency in the companies they acquire.

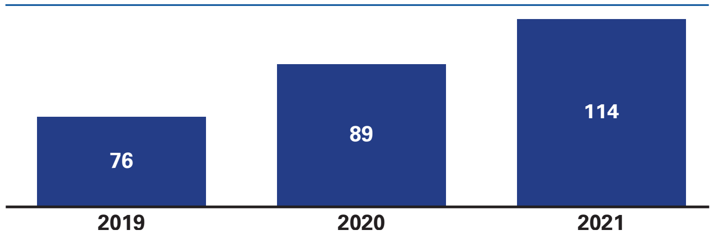
Consolidation and deal volume are likely to continue at the same pace or even accelerate in the year ahead. Reimbursement is always a concern, but more than 60 percent of respondents expect that the movement to alternative payment models (ACOs, direct contracting, etc.) would increase investment in home health and hospice.

## How home health and hospice fared in 2021

In 2021, there were 114 acquisitions in home health and hospice, up from 89 in 2020, when the pandemic slowed activity (Exhibit 30). Strategic buyers were behind many of these transactions, typically to expand their service lines or build scale in geographic areas. In June 2021, LHC Group, a publicly traded home healthcare company, acquired Heart of Hospice and Heart `n Home Hospice & Palliative Care, expanding its footprint in seven states from Oregon to South Carolina. In October, LHC acquired a home health provider and a hospice in Virginia Beach,[92] and, in November, it finalized its acquisition of 47 Brookdale Health Care Services agencies.[93]

Private equity funds continue to build positions in home health and hospice. TowerBrook invested in Compassus, for example. And KKR invested in BrightSpring in 2019, then in 2021, Brightspring acquired Abode for $775 million and Pate Rehabilitation (for an undisclosed price). Joint ventures and management service agreements are becoming more common as providers seek to broaden the continuum of care they offer. For example, some large operators are forging agreements with health systems' post-acute operations. After considering a full or partial separation of its home health and hospice business in 2021, Encompass announced its plan for a tax-free spin-off in January 2022.[95]

**Exhibit 30. Home health and hospice acquisitions, 2019-21**




Source: Capital IQ

[92] Source: "Finding Value in Home Health and Hospice M&A," KPMG

[93] Source: "LHC Group finalizes home health, hospice acquisitions in Virginia," October 5, 2021

[94] Source: "LHC Group finalizes acquisition of home health, hospice, and therapy assets from HCA Healthcare and Brookdale Health Care Services Venture," press release, November 2, 2021

[95] Source: "Encompass Health Corporation Announces Plan to Spin Off Home Health and Hospice Business under the New Brand Enhabit Home Health & Hospice," company website, January 19, 2022



## Outlook and investment considerations for 2022

The home health and hospice sector will continue to grow as demand for home care rebounds and more patients have elective procedures that were postponed during the pandemic and require post-treatment home care. Demand will also be driven by long-term trends: more families and physicians recognize the benefits of home care, and more patients are being diverted from skilled nursing facilities.

As in other healthcare sectors, technology is changing the business models of home health and hospice care organizations. Providers expanded their use of telehealth technology during the pandemic to provide services to Medicare patients at home—a change that is likely to endure even as COVID-19 wanes. A general shift toward at-home end-of-life care will also lower costs.

We expect that multiples in this subsector will remain high with increased competition, a shrinking number of platform opportunities, and rising demand and spending. Success will depend on maintaining quality of care and preventing fraud through close oversight of family caregivers. The ultimate goal is a better experience and better outcomes for patients, lower costs, and the ability to scale.

Investors still must proceed with care. To uncover hidden risks, particularly when acquiring small and medium-sized providers, buyers need a deep understanding of demographics, disease prevalence, referral patterns, penetration of fee-for-service Medicare versus Medicare Advantage plans, competitor concentration, and PE penetration in the market.

## Tailwinds and headwinds

**Tailwinds**

- **Demographics.** The home health and hospice care subsector will continue to grow as the "silver tsunami" grows and more people suffer from chronic, life-limiting diseases.
- **More home care.** The trend of sending patients directly home from acute-care facilities will continue to drive demand for home health services. More than 1.5 million Americans per year now receive hospice care at home.
- **Technology.** Advances in technology will continue to offer ways to improve service and operate more efficiently. More home health providers will use telehealth, including remote monitoring, allowing skilled caregivers to serve more patients each day. New IT systems can help providers navigate an increasingly complex regulatory environment.
- **Continuing pandemic effects.** Recurring outbreaks of COVID-19, such as the Omicron variant, will drive demand for home-based services.

**Headwinds**

- **Slow transition to value-based care.** Successfully navigating to a value-based care model will depend on the patient population, care models, and organizational competencies of each home health provider.
- **Staff shortages.** Hiring and retaining skilled staff will continue to pose costly challenges. We expect the most successful acquirers to retain more of the best employees by using their scale to offer more diverse and appealing career paths, along with better pay and working conditions and opportunities for advancement.
- **Lack of technology expertise.** Innovative technology is a double-edged sword because investments sometimes fail to deliver expected returns, for example when staff lack incentives or training to get value from new tools. Investing in hardware and software is not enough: cultural change is also essential. Home health and hospice are people businesses—literally hands-on—where the quality and quantity of staffing are paramount.

## The take-away

We believe the subsector's growth will continue or accelerate, with robust investment activity throughout 2022. Many deals will be made in pursuit of market-share growth rather than synergies. In the long run, we expect the winners in this space to build the expertise, infrastructure, and culture to create leadership positions in value-based care—the inevitable future of the home health and hospice industry.

> We expect that multiples in this subsector will remain high with increased competition, a shrinking number of platform opportunities, and rising demand and spending.

# Conclusion

The lasting impact of the past two turbulent years seems to be a heightened emphasis on M&A to acquire innovation, optimize portfolios, drive efficiency, and position companies in HCLS for long-term growth and success.

The central message is positive. Investors are focused, have clear priorities, and are increasingly optimistic about the investment landscape in 2022. Winning players will start with a cohesive and overarching growth and portfolio strategy. They will execute with shrewd target scanning and creative diligence, as well as careful integration and performance optimization.

Our research for this report focused on key trends and opportunities for investors. We also identified potential headwinds, such as rising cost of capital and labor shortages. We pointed out sector-specific headwinds from reimbursement policies to talent shortages and rising valuations.

There are many potential challenges in a market that continues to operate in overdrive. Overpaying, rushing at targets for fear of missing out—or the inability to identify the value that justifies a winning bid price. All of these are risks. We believe the HCLS sectors will go from strong to stronger in 2022. Making the deals that build the future will be challenging, but the rewards will be great.

# How KPMG can help

KPMG LLP is one of the largest providers of professional services—advisory, strategy, audit, and tax—to the healthcare and life sciences industry globally with more than 4,200 industry-specific partners and professionals. The KPMG Healthcare and Life Sciences Strategy practice specializes in advising corporate, private equity, and public organizations across all phases of the M&A lifecycle, from deal strategy to diligence to post-close value creation.

Our integrated, multidisciplinary approach provides clients with critical insights into value opportunities—and obstacles to value—at deal speed. The ability to go beyond standard diligence methods will be increasingly important in the post-COVID-19 M&A market. Further, KPMG has a proprietary set of tools and methodologies to deliver data-driven insights.

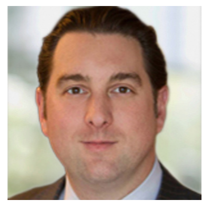
Our dedicated healthcare and life sciences M&A teams have extensive experience in mergers, acquisitions, affiliations, JVs, and partnerships across all segments and subsectors of the healthcare and life sciences industry. We understand the regulatory, commercial, operational, and accounting complexities unique to the industry and provide a client-centric, integrated suite of services across the deal lifecycle to assist our clients in achieving business results. For more information about our Healthcare & Life Sciences practice, please visit **https://home.kpmg/us/en/home/industries/healthcare.html.**

# Authors

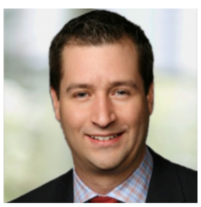
**Kristin Ciriello Pothier**
*Global HCLS DAS Leader*
617 549 2779
kpothier@kpmg.com

**Steve Sapletal**
*National HCLS DAS Leader*
612 708 2556
ssapletal@kpmg.com

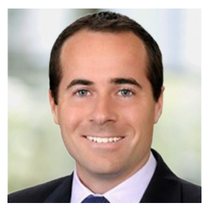
**Ross Nelson, M.D.**
*National HC Strategy Leader*
630 207 7728
rossnelson@kpmg.com



**Jeffrey Stoll, Ph.D.**
*National LS Strategy Leader*
857 334 8768
jeffreystoll@kpmg.com

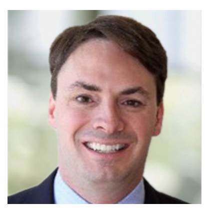


**Brett Glover**
*National HCLS Deal Advisory Leader*
214 840 8579
bglover@kpmg.com



**Alex Neil**
*National HCLS Accounting Advisory Services Leader*
917 375 5029
alexneil@kpmg.com

**Janet Lehman**
*National VC Life Sciences Leader*
617 290 8223
jlehman@kpmg.com



**Jason Moran**
*National HCLS Corporate Finance Group Head*
415 297 4407
jasonmoran@kpmg.com

**Jessica Lin**
*HCLS Strategy*
617 283 8336
jessicalin4@kpmg.com

**Alasdair Milton**
*HCLS Strategy*
617 372 3453
alasdairmilton@kpmg.com

## We thank the many KPMG colleagues who contributed to this project:

Sush Bose, Patrick Carpenter, Donna Ceparano, Hillary Cimock, Jana Cuggino, Marc Dumaine, Mitch Fleming, Puja Ghelani, Darron Gill, Michaela Giovani, Teresa Gregg, Thomas Johnson, Karan Jolly, David Klein, Kriti Khanna, Whitney La Bounty, Geoff Lewis , Walter Olshanski, Andrew Sadowski, James Stephanou, Andrew Stephenson, Brian Tam, Howard Tomb, Alexandra Vargas, and Jeffry Whitcomb