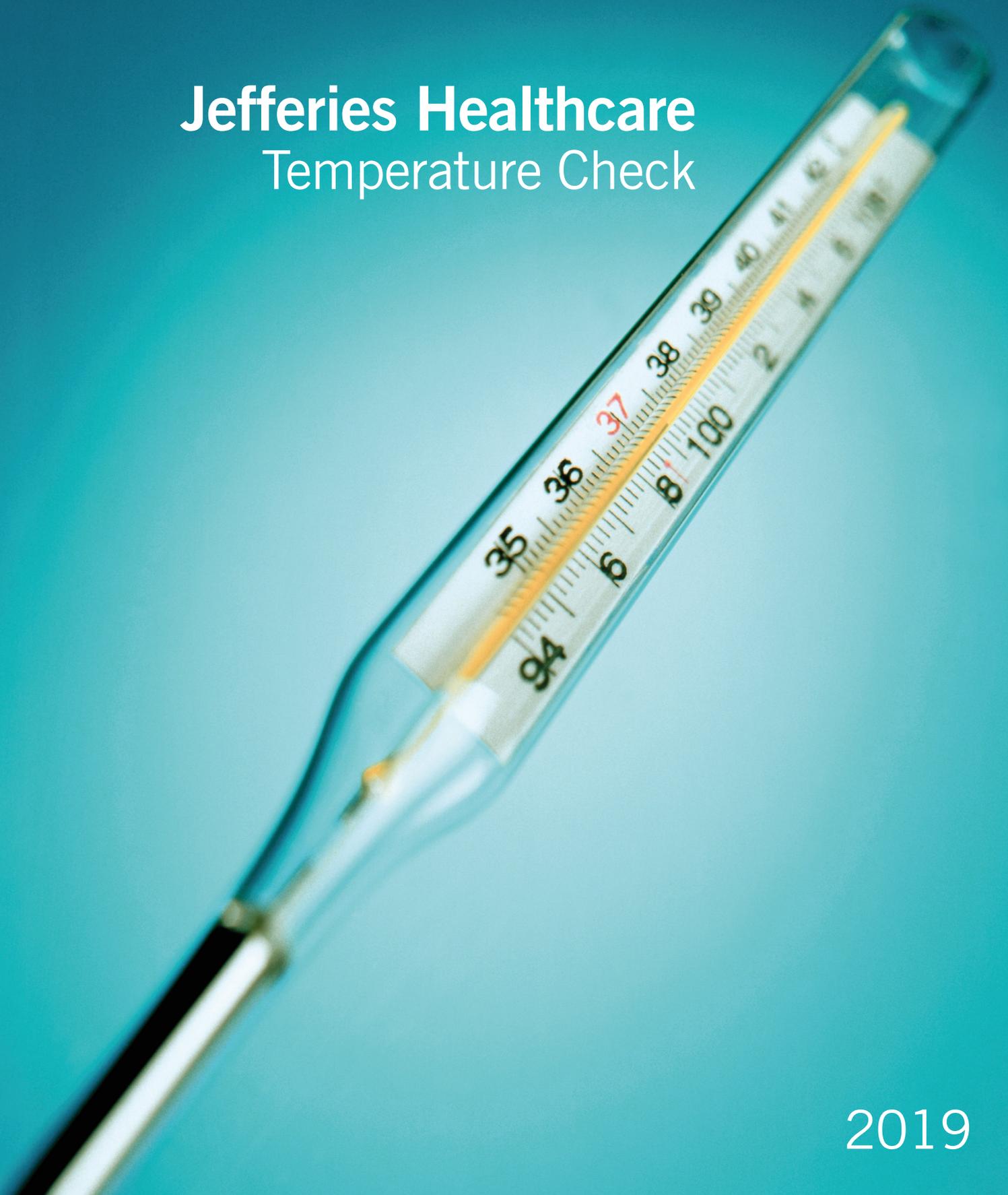
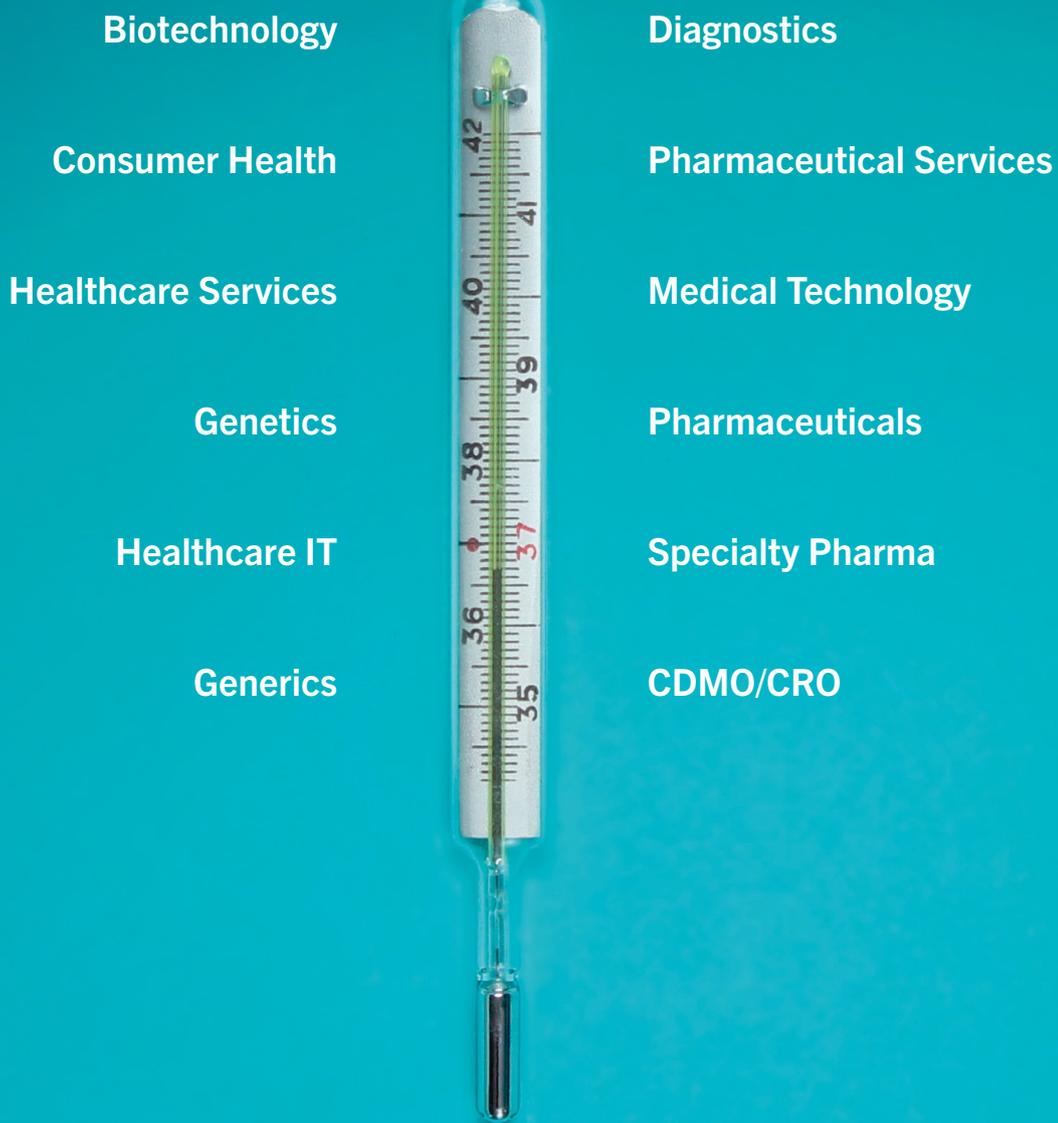


Jefferies Healthcare Temperature Check



2019

Jefferies



This survey was conducted by Jefferies in partnership with FTI Consulting's Strategy & Research team, and is based on feedback from over 500 senior healthcare professionals, investors and consultants globally. Investors included both institutional and private equity. Respondents came from all healthcare sub-sectors, including biopharma, pharmaceuticals, biotechnology, diagnostics, medical technology, healthcare services, pharmaceutical services, genetics, consumer health, animal health, and healthcare IT.

Foreword

by Tommy Erdei, Joint Global Head and European Head of Healthcare Investment Banking



I am delighted to introduce the second edition of the Jefferies Healthcare Temperature Check report, published to coincide with our annual Global Healthcare Conference in London. Now in its tenth year, we will be welcoming more than 2,000 attendees to what is now the leading healthcare conference in Europe.

It was encouraging to see a record level of responses for this year's report, with over 500 senior leaders and investors in the Healthcare sector giving their views on both 2019 and the year ahead. This level of engagement arguably reflects the heightened focus on what 2020 will look like, with ambitious corporate growth plans balanced against significant market volatility, and I expect these themes will be the basis for many of the conversations that take place at the conference.

It will therefore be no surprise to see that political uncertainty is high on the agenda and, for many, represents the greatest concern for the industry. Our report finds that the level of this concern has risen since last year, with Brexit as uncertain as ever, the UK going to the polls, and a US election looming.

However, despite these concerns, alongside rising caution around pricing pressure, it is pleasing to find leaders in the sector remain relatively positive on the outlook with the vast majority of respondents expecting to increase or maintain their Healthcare exposure next year.

In particular, the pipeline for M&A appears to be healthy with good levels of activity anticipated in 2020 and optimism among corporates notably high. This echoes views on valuations which, while arguably getting fuller, may have further to go.

In terms of where this M&A activity will be, many believe that corporates will be most active. However, responses from private equity participants suggest that they too anticipate a busy 2020.

Our report also suggests that the price of branded drugs will continue to moderate, growing at slower levels than seen historically, although significant reform of drug pricing looks set to wait until after the 2020 US election.

Once again, targeted therapies and gene therapy are the subsectors of Biopharma seen as most ripe for innovation. As such, there is an increased focus on what is happening in these two areas rather than topics such as artificial intelligence or microbiome.

It is also interesting to note that, for the second year running, the US market is where people believe there is most value to be found. Indeed, a note of caution is stuck around European markets, and in particular their ability to support growth companies in sub-sectors such as Biotech.

Finally, while predicting where markets will go is always challenging, it is a question we like to ask, and it is clear that there is greater confidence in the performance of Healthcare stocks than broader global indices.

I would like to thank you for reading this report and your support for Jefferies and our Global Healthcare Conference in London. As one of the pre-eminent advisors to Healthcare companies globally, this is a flagship event for us, and it is exciting for us to see it grow every year. We hope you enjoy reading our second Jefferies Healthcare Temperature Check.

Jefferies

Key Findings



Geographic

Respondents strengthened their views even further that the US is where the most significant value/investment opportunities are, away from all other regions in the survey.



More Bulls than Bears

Over 90% of respondents expect to either increase or maintain Healthcare exposure next year. Small and mid-cap Biotech is the subsector seen to have the most upside by investors.



Politics and Pricing

Concerns over political and policy uncertainty have grown, and are now cited by half of respondents as the biggest risks. More than two-thirds think of Brexit as having a negative effect.



Healthy M&A Pipeline

There is more M&A to come in 2020, with over 80% seeing deal flow either higher or at the same level. Optimism is highest company-side. Respondents, however, were significantly more restrained about the prospects of the IPO market going into 2020.



Drug Pricing

Reform is unlikely to happen before the US election, according to most respondents. The market appears completely divided as to whether branded drug pricing will rise or stagnate/fall.



Innovation and European Growth

44% of respondents are worried about the ability of European stock markets to support Healthcare growth companies in areas such as Biotech.



Markets

Sentiment has turned bearish on equity markets, with over 70% believing the FTSE 100 will be lower or the same this time next year. Encouragingly, there is a divergence in sentiment on Healthcare stocks, with 75% predicting these to be the same or higher over the same period.



Geographic

Finding the geographic opportunities in Healthcare for 2020

We asked respondents to select the regions in which they saw the most significant value opportunities for 2020. Consistent with last year's report, North America continues to be perceived as the region of most significant potential, with Europe second, although respondents shifted weighting even further to the US with every other region declining in terms of outlook for opportunities.



What will be the best performers in next 12 months?

Investor and corporate views on the best performing sub-sectors of Healthcare remain remarkably unchanged from 12 months ago. Notably, small and mid-cap Biotech is clearly viewed as having the most upside with over one third of respondents citing this as the likely best performer. Beyond small and mid-cap Biotech, views on allocation are evenly spread across other healthcare subsectors. There is a noticeable uptick in expectations from last year for both Large-Cap and Healthcare Services, with an increased number of respondents expecting these two subsectors to be the best performers. This may be a flight to safety away from the riskier areas of Healthcare.

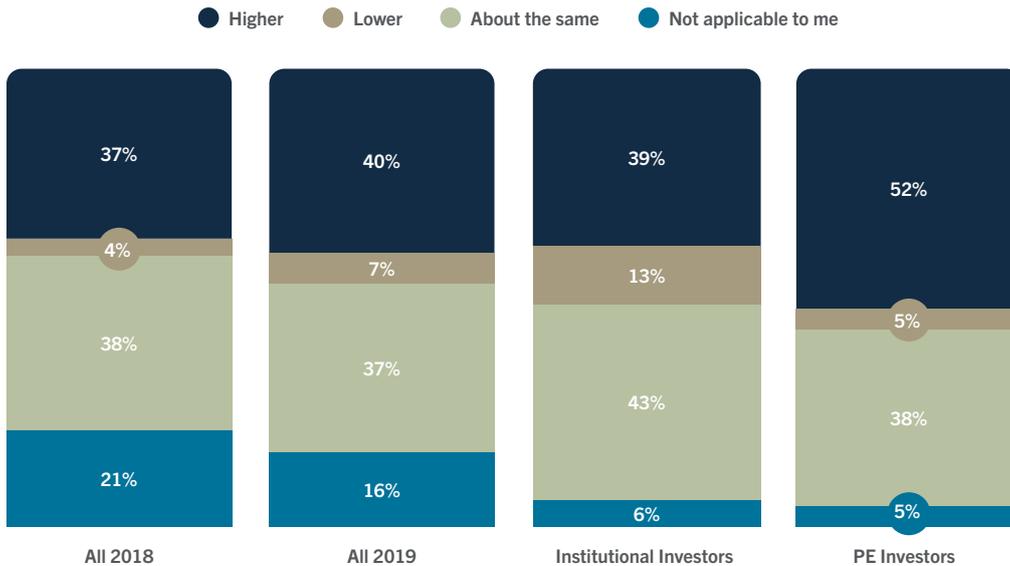




More Bulls than Bears

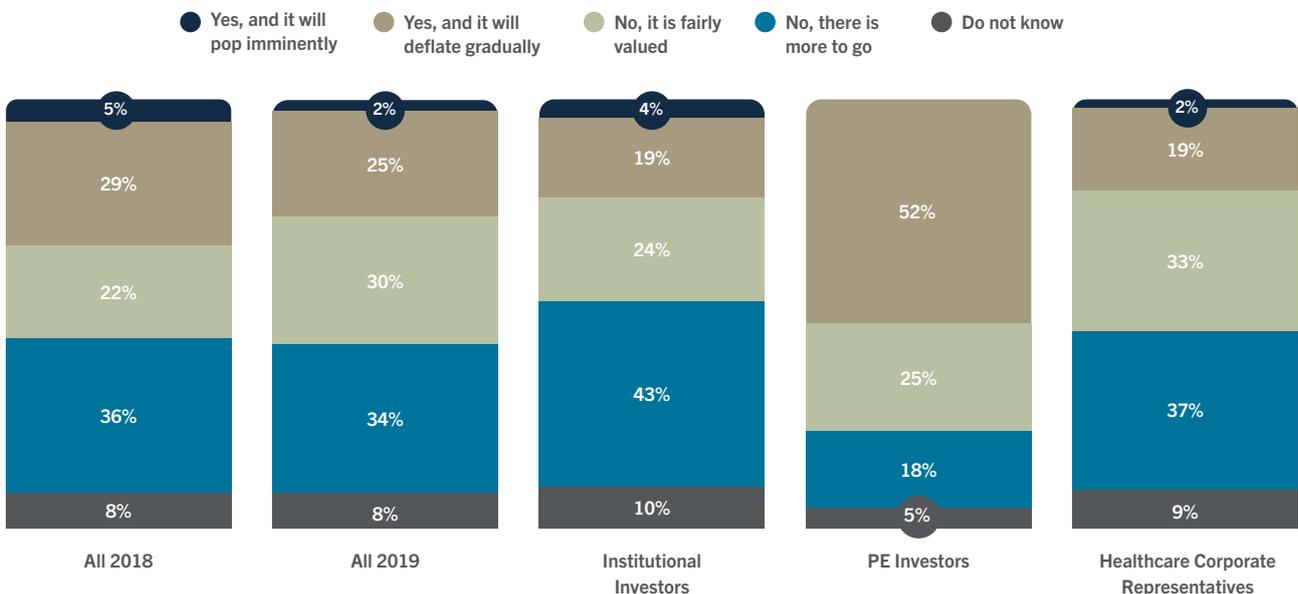
Healthcare sector exposures in 2020

It is encouraging to see sentiment around Healthcare is positive, with over 90% of respondents expressing views expecting to either increase their exposure to the sector or keep it steady at the same level. Private Equity investors are slightly more bullish than their institutional counterparts, whose caution has increased over the past year.



Is the Healthcare sector in an asset inflation bubble?

Encouragingly, two-thirds of participants are confident in current valuations or see further upside, an increase of 6% from 2018. Sentiment from corporates has driven this growth, with their neutral to positive attitude on valuations growing from 60% to 70% into 2019.

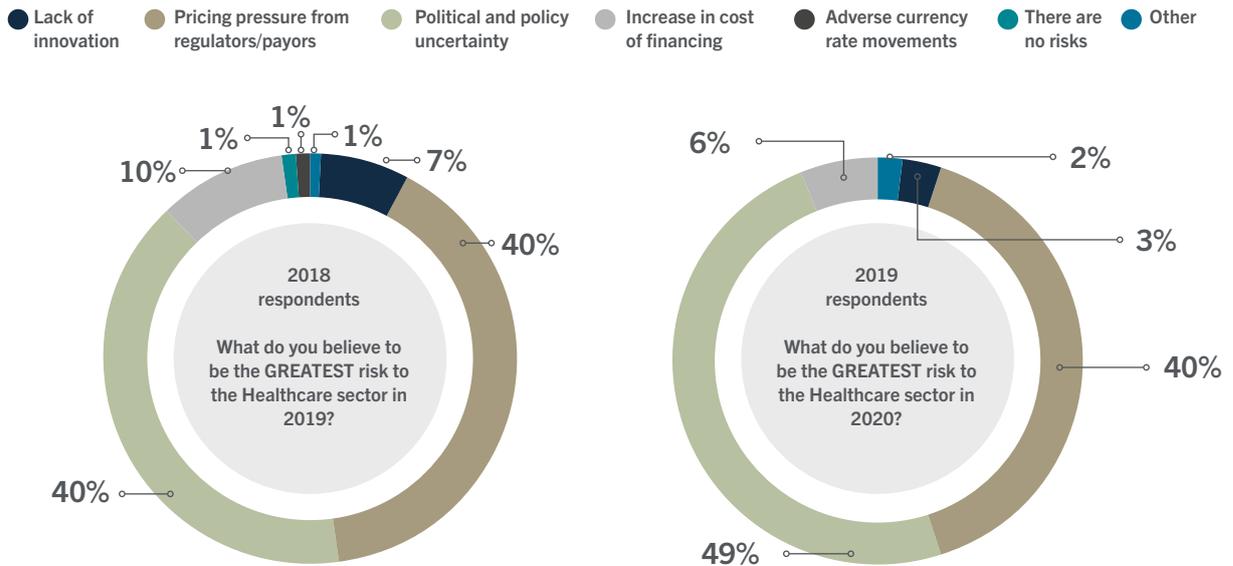




Politics and Pricing

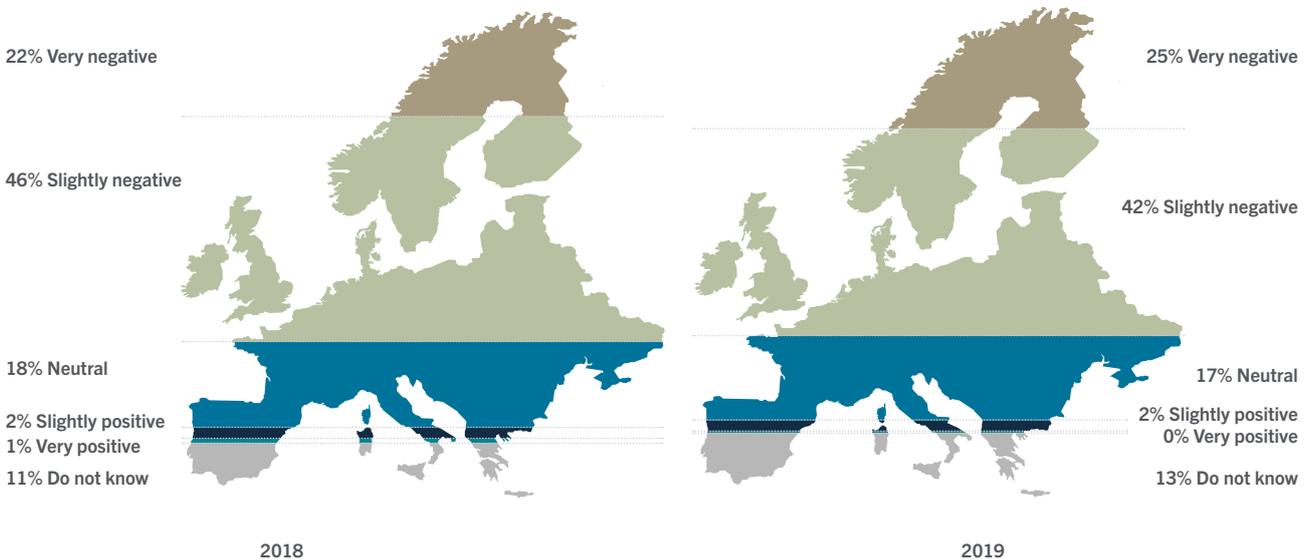
Identifying the greatest risks to the Healthcare sector in 2020

Nearly half of respondents believe that political and policy uncertainty present the greatest risks in 2020, with the latest Brexit developments and the approaching UK and US elections seeing concerns around political volatility growing. In turn, pricing pressure is also a concern as corporates and investors plan for the year ahead.



The Brexit effect

As Brexit continues to dominate the news agenda, it is no surprise to see significant concerns around its impact with a quarter believing it will have a very negative impact and only 2% anticipating a positive impact. Over two-thirds anticipate Brexit as having an adverse effect on the industry. These views are almost entirely consistent with 2018's findings, suggesting that while the political debate and figures have changed, the sector's concerns have not.

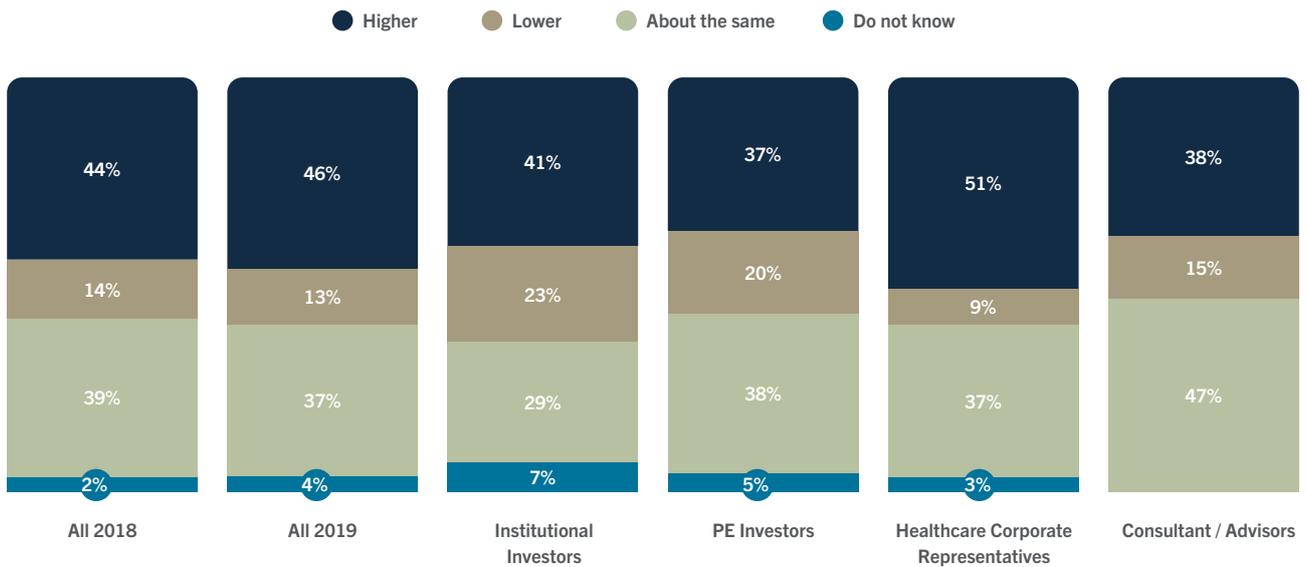




Healthy M&A Pipeline

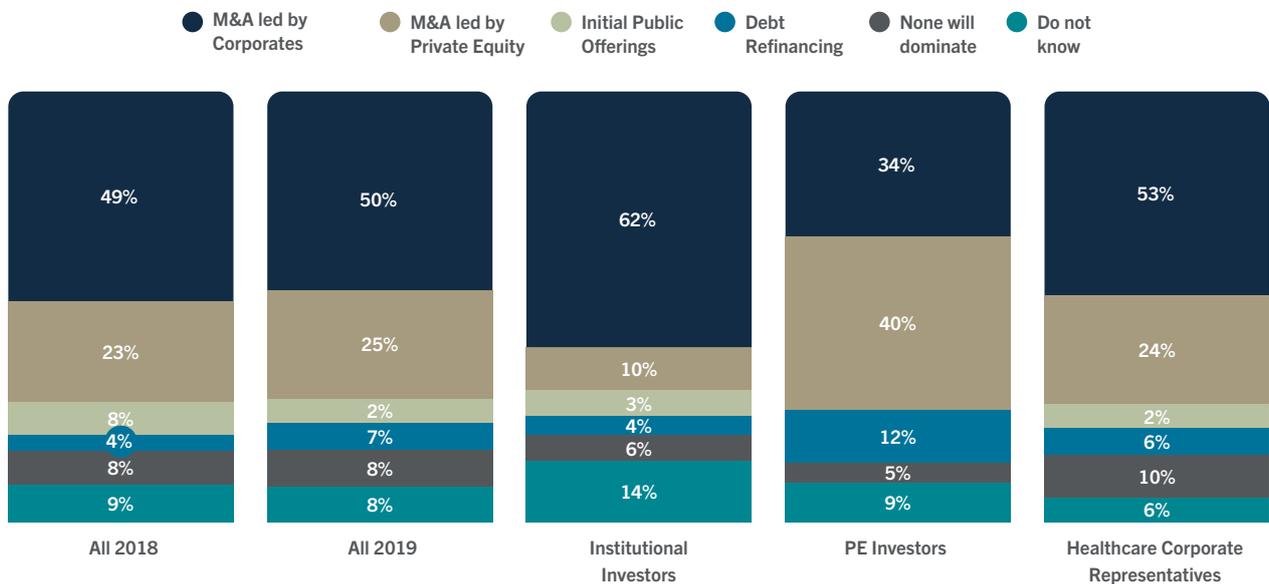
More M&A to come

Further M&A activity is predicted in 2020, with well over 80% believing next year will see either more deal flow, or activity at the same level as 2019. Healthcare corporate representatives are once again the most bullish with over half expecting to be doing more deals in 2020.



What kind of deals are Corporates going to do?

Respondents expect to see a very strong continued flow of Corporate and Private Equity led M&A into 2020. Private Equity respondents were far more bullish on their M&A activity than other respondents expect, setting the scene for some potential surprises in regard to the amount of dry powder private equity plans to deploy, and potentially outbidding strategic acquirers. At the same time, there is a very noticeable shift in the outlook for IPOs, with only 2% expecting significant IPO activity in the markets, potentially reflecting the political macro environment.

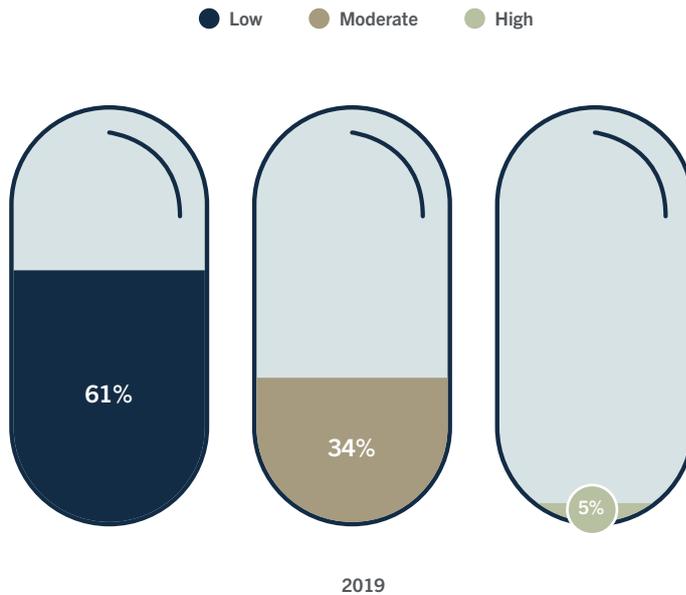




Drug Pricing

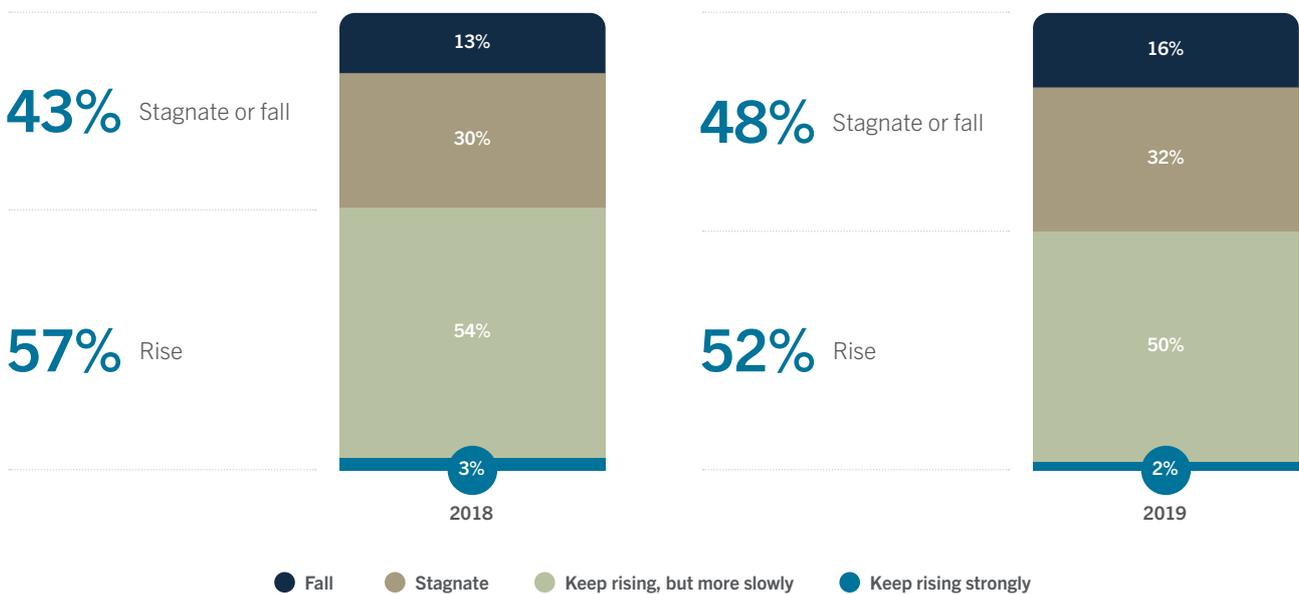
Will there be reform to US drug pricing before the next US Presidential Election?

While drug pricing is a key topic of discussion, reform is not meaningfully expected until after the upcoming US election. 95% believe the likelihood of meaningful reform before then is low or moderate.



Where next on drug pricing?

Despite the political rhetoric as the US heads into an election cycle, a majority of respondents expect drug pricing to continue rising, although potentially at lower rates than in the past. Only 16% expect to see actual price decreases.

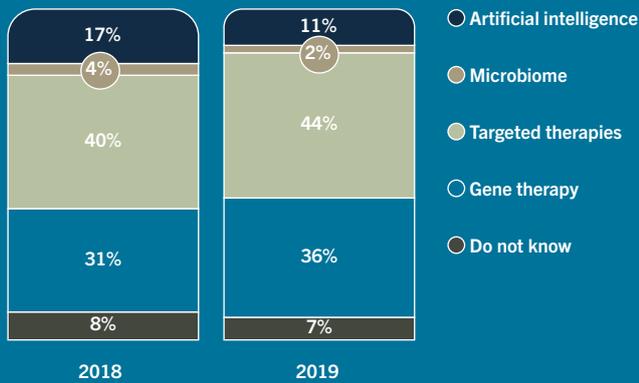




Innovation and European Growth

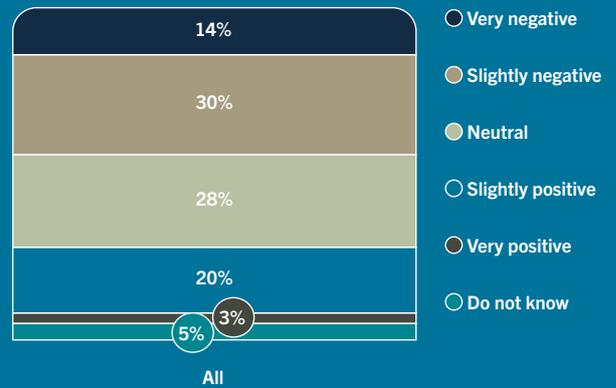
Biopharma innovation

Globally targeted therapies and gene therapy are seen as the critical areas for innovation within Biopharma according to 80% of respondents who think this is where innovation will have the biggest impact. There is an increased focus on these two areas, up from 70%, at the expense of A.I. where less innovation is anticipated, versus our 2018 report.



Views on the ability of European markets to support growth companies

There are concerns around the ability of European stock markets to support growth companies in Healthcare, especially Biotech, with 44% of participants having a negative view of their ability to fund growth.



Markets

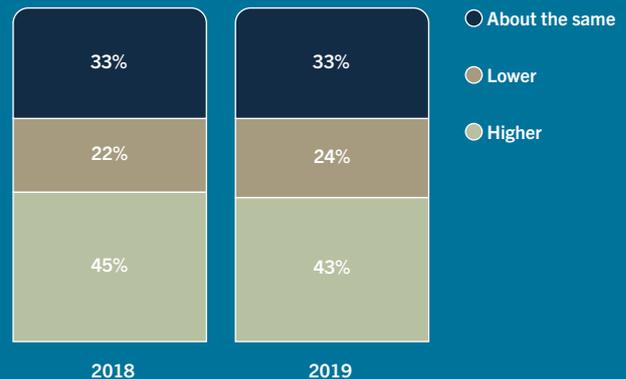
Expectations of FTSE 100 Index performance in 2020

Negative sentiment has risen marginally, with over 70% expecting the FTSE 100 to be lower or around the same level at the end of 2020 compared to 2019. Last year's poll proved accurate when approximately two-thirds of respondents expected a higher or fairly similar level for the FTSE, in line with its current circa 8% rise.



Expectations of MSCI World Health Care Index performance in 2020

Respondents are more optimistic on Healthcare stocks, with over 75% predicting the MSCI World Health Care Index will be higher or at the same level at the end of 2020. At the time of writing, those predicting the 'higher' last year stand correct with the MSCI World Health Care Index having increased by around 13% year to date.



Q&A with Tommy Erdei

Joint Global Head and European Head
of Healthcare Investment Banking



This will be Jefferies' 10th Global Healthcare Conference in London. What do you anticipate as the key themes that will be discussed this year?

On a macro level there continues to be significant political and economic volatility, including Brexit, the China/US trade war and the upcoming US election, which will influence and drive many of the conversations taking place. Arguably, this volatility is more pronounced now than it was at the same time in 2018, and the US elections are even closer with the inevitable US pharmaceutical pricing issue and broader healthcare reform gaining further focus as we enter an election year.

Examining the sector more specifically, we continue to see an aggressive search for pipeline, growth and continued innovation taking place across the healthcare market. This in turn, is driving a lot of M&A activity. Our own backlog of transactions in this area is strong.

Looking forward, while the appetite for M&A remains strong, the market volatility is making deals more complex and parties are becoming more cautious around pulling the trigger. Deals are still getting done, but there is higher percentage of these failing at the tail end of a process. Given this, transaction process and negotiations are becoming even more critical to get right and our clients are seeking our advice more than ever.

The past 12 months have been busy for the sector. What do you think have been the biggest drivers of activity?

There has been a strong emphasis on 'refocusing', driven by both competition and/or public companies' significantly increased shareholder pressure and activism. A large volume of deal activity has been companies looking to double down on the segments in which they lead, while divesting non-core or sub-scale parts of their businesses. In the past we have seen diversification as a significant theme but today, given the high level of competition and shareholder activism, you really need to commit to the core parts of your business rather than spread yourself too thin. We expect this to continue to be a key driver. As more companies become

more focused, the pressure on those who are not leaders only increases if they want to remain competitive.

We would also observe that the debt capital markets have been very healthy and supportive over the last year, evidenced by the number of private equity transactions.

Finally, the strategy of large pharma companies to secure both near- and long-term growth by adding to their pipelines has seen them very active acquirers of biotech. This will continue to remain the case.

Respondents to the report last year were both optimistic on the sector in general and there was a clear anticipation of continued deal activity. How has this played out?

CEOs are still optimistic, but as discussed there is more risk in getting transactions done.

At last year's conference, over 80% of respondents expected similar or even increased deal activity.

Through the beginning of Oct 2019, this view has clearly played out despite a global deal environment that has been weaker than 2018. Specifically, despite global M&A deal value decreasing 17%, healthcare deal value actually increased by 8% to almost \$400bn and deal activity clearly continues at a strong pace in our own pipeline of mandated transactions.

Looking across the Healthcare sector, are there any sub-sectors you are particularly excited about?

Biotech an exciting area, as we discussed earlier. There are a large number of companies that have been well funded over the last three to four years when the financing markets were open which has allowed them to develop their innovation at a rapid pace. These companies are now getting de-risked as they move into phase III or to registration phase, and we now have a large crop coming to market with more proven science and therefore more de-risked for the large pharmaceutical companies to acquire.

In the CDMO space, we have seen deal activity heighten and are starting to see the consolidation we have expected for a while. There are a few private equity firms who have invested in the space, and this is helping drive well-funded consolidation.

Specialty Pharma remains a strong sector in Europe with very significant deal flow but less strong at the moment in the US and in emerging markets. But we expect this to change for the better as some of the headwinds hopefully dissipate and balance sheets get fixed.

In Healthcare Services, activity in the mid-market continues to be strong. While there is far greater scrutiny being applied by buyers on platform quality and resilience to political risks, the quality assets continue to sell at attractive multiples. Specialization is the keyword across many sub-sectors, from mental healthcare to retail healthcare or alternative site care.

Looking ahead, where do you see the biggest opportunities and challenges for the next 12 months?

Clearly the volatility we have discussed will influence how the next year plays out. 2020 is shaping up to being a good year for M&A, but we do believe that, for those thinking about transacting, it is important to act now given the risk of conditions changing.

For example, experience suggests that as we get closer to the November US elections, activity can tend to pause as companies wait to see the outcome. More broadly, companies are very closely watching the debt markets and where they are headed – there is certainly higher risk today than there was twelve months ago.

What do you most look forward to around the Jefferies Healthcare Conference?

It is exciting to see the Jefferies Healthcare Conference gain momentum every year. The Jefferies Healthcare Conference has become the go-to conference in Europe and has become the forum for companies and investors alike to start setting their agenda for the next year.

James Vane-Tempest

Senior Equity Research Analyst

European Specialty Pharma and Medtech & Services



We continue to witness innovation across the healthcare sector which can help companies both sustain competitive advantages and contribute to long run excess shareholder returns.

In Specialty Pharma, although more “search” than “research” and development in nature, we are seeing continued innovation in life cycle management solutions such as sustained release formulations. This can provide greater flexibility or provide more tailored and convenient drug delivery mechanisms to create value for payors and improve convenience for patients. We are most focused on potential innovations to improve existing gold standards of therapy.

In our view a value-based proposition driven by innovation will become increasingly more important, in particular for generics, as differentiated products can offer new solutions to help governments contain ever-growing healthcare costs. We believe a targeted approach by therapy area can help companies focus on core R&D strengths, supplemented by targeted M&A, which could lead to improving success rates. Whilst scale can in some situations be a barrier to innovation, in some areas such as biosimilars we believe it is vital given the high costs to develop these products, though focused partnerships with smaller innovative players can be successful. We believe it is crucial that pricing of these sector innovations is sustainable, as this should allow sufficient reinvestment into the

industry and provide both the incentives and capital to finance future affordable and value-added innovative treatments.

In Healthcare Services, as value-based care can drive quality and better outcomes it has led to many provider innovations, but in our view the industry needs more payor disruption as HC systems gradually move away from fee-for-service to performance based metrics. Evidence-based arguments, data, and appropriate tariffs in our view can help hold providers to account to avoid a focus on elective and intrinsically less-risky areas.

Innovative Healthcare delivery models are evolving as the focus shifts to outcomes vs. number of beds and theatres. Future proofing hospitals will also be necessary if there is to be greater collaboration with tech providers; hence creating value for patients will likely determine long-term sector winners. The role of the hospital is also likely to change over time as outmigration of care impacts elective care.

Technology is the enabler but emerging business models are the disrupter as healthcare digital tools evolve rapidly; however the utility of information

still needs to improve. The patient is becoming more powerful as access and convenience are greater drivers of care. It is too early to pick winners, but incentives on offer will dictate progress. Investors’ expectations need to be managed given the potential to overestimate near-term progress; but this does risk underestimating long-term benefits. Getting closer to the patient in our view is a theme for the next decade.

New processes are needed to complement evolving technologies as many systems will be replaced by artificial intelligence. There is a challenge to change doctors’ behaviour which will require training and incentives; hence a huge hurdle to gain advantages of digitalisation across healthcare systems. Technological innovations and data can drive better clinical outcomes and lower costs, but the market needs to focus more on analytics. Digital disruption in our view may take longer than people expect but it could also be deeper than people think, as it’s a huge driver to lower cost. The innovative hospital of the future in our view will be driven by data.

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Peter Welford

Senior Equity Research Analyst

European Pharmaceuticals & Biotechnology



We are on the cusp of multiple new technologies reaching the market and improving the lives of patients, with Pharma and Biotech taking centre-stage for many of these advances.

Decades of research into technologies like cell therapy and gene therapy are coming to fruition with the development of effective therapies with acceptable safety profiles. Advances in our ability to manipulate immune cells and to control the synthesis of proteins from genes could facilitate the development of cures for previously untreatable diseases.

Emerging technologies that are potentially transformative for healthcare and could dramatically change patients' outcomes include:

- CAR-T cell therapy: a patient's immune cells are modified so that they will attack cancer cells
- Gene therapy: a gene is inserted into a patient's cell to treat a genetic disease
- Gene editing: the insertion, deletion, or replacement of DNA at a specific site in the genome
- mRNA: artificially generated short sections of DNA that prompt the body to make specific proteins
- siRNA: molecules that selectively silence troublesome genes
- Antisense oligonucleotides: single strands of nucleic acids that can modulate protein expression
- Bispecifics: antibodies that can interfere with two cell targets at the same time

In the last few years we have seen the first CAR-T cell therapies approved, including Kymriah (Novartis) and Yescarta (Gilead). We have also recently witnessed a transformative gene therapy, Zolgensma (Novartis), approved in the US for a devastating childhood genetic disorder, spinal muscular atrophy (SMA), plus gene therapy Luxturna approved in Europe for a rare ophthalmic condition.

Novel technologies are helping to improve available treatment for conditions like haemophilia, with the bispecific antibody Hemlibra (Roche) on the market. We could also see antisense oligonucleotide technology potentially revolutionise the treatment of Huntington's disease, currently being explored in the final Phase III stage of clinical testing.

Companies that are willing to understand and embrace emerging technologies are likely to remain well-positioned in increasingly competitive markets.

Innovation driven by data science: Pharma companies have already started forming partnerships to gain access to large datasets (e.g. GSK with 23andMe) and explore better ways of utilising data they collect (e.g. Roche's acquisition of Flatiron).

Advances in artificial intelligence machine learning could speed up clinical development and help to unearth promising new targets for drug development.

Regulatory authorities amenable to approvals: The regulatory landscape remains favourable with both US FDA and European EMA willing to accept a degree of risk for new products, notably for unmet medical needs.

Priority Reviews of filings are now available not only in the US but also in Europe, Japan and China, in addition to expedited routes for novel cell and gene therapies. Innovative pathways are also being pursued, such as FDA's Real-Time Oncology Review (RTOR) pilot allowing the agency to access key data and begin reviewing supplemental indications of approved cancer drugs before a sponsor's official submission.

We believe the current regulatory landscape should improve R&D productivity, shortening time to market, reducing costly clinical trial spend, and in many cases aiding reimbursement/pricing discussions.

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our clients win.

There was a time when investment bankers were trusted partners and advisors to their clients. The goal was simple: relentlessly commit to your clients; be hardworking and humble; stay unconflicted in your work and uncompromising in your values. The rest will take care of itself.

Our success proves there's still room in the world for a firm that embraces an approach that has stood the test of time: Clients First—Always.SM

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Jefferies: A Leader In Global Healthcare Investment Banking

- Jefferies is a global full-service investment bank offering M&A advisory, equity and debt capital markets, across the United States, Europe, and Asia
- Jefferies has the largest Healthcare investment banking group in the world with over 100 Healthcare bankers worldwide
- Since January 2017, Jefferies ranked #1 in Healthcare Investment Banking transactions globally, completing 341 M&A advisory book run equity and leverage finance Healthcare transactions during this period⁽¹⁾



Selected Global Healthcare Transactions Executed by Jefferies

| | | | |
|--|---|---|--|
|  <p>RECORDATI Upfront consideration: \$390,000,000</p>  <p>Acquisition of worldwide rights to Signifor, Signifor LAR, and osilodrostat (LCI699) from Novartis</p> <p>Sole Financial Advisor</p> <p>Pending</p> |  <p>AUROBINDO</p> <p>\$1,000,000,000</p> <p>Acquisition of Dermatology and Solid Orals Portfolio of Sandoz from Novartis</p> <p>Sole Financial Advisor</p> <p>Pending</p> |  <p>September 2019</p>  <p>\$915,000,000</p> <p>Sale to SOBI</p> <p>Lead Financial Advisor</p> |  <p>July 2019</p>  <p>\$582,000,000</p> <p>Initial Public Offering Active Bookrunner</p> |
|  <p>May 2019</p>  <p>\$3,333,000,000</p> <p>Initial Public Offering Active Bookrunner</p> |  <p>April 2019</p> <p>IVC GROUP International A portfolio company of EQT</p> <p>Undisclosed</p> <p>Sale of a Minority Stake to Nestlé and a consortium of investors Sole Financial Advisor</p> |  <p>March 2019</p>  <p>\$1,000,000,000</p> <p>Merger with Option Care</p> <p>Joint Financial Advisor</p> |  <p>February 2019</p>  <p>\$1,215,000,000</p> <p>Sale to JAB Holdings B.V.</p> <p>Sole Financial Advisor</p> |
|  <p>January 2019</p> <p>ONEMED</p> <p>Undisclosed</p> <p>A portfolio company of 3i</p> <p>Sale to Nalka Invest Sole Financial Advisor</p> |  <p>December 2018</p>  <p>\$1,600,000,000</p> <p>Sale of UPSA Consumer Health Business to Taisho Pharmaceutical Joint Financial Advisor</p> |  <p>November 2018</p>  <p>Upfront consideration: \$1,500,000,000 Total consideration: Up to \$2,315,000,000</p> <p>US rights to Synagis from AstraZeneca</p> <p>Sole Financial Advisor</p> |  <p>October 2018</p>  <p>\$2,101,000,000</p> <p>Sale to Novartis AG Joint Financial Advisor</p> |
|  <p>October 2018</p>  <p>\$373,000,000</p> <p>Initial Public Offering Active Bookrunner</p> |  <p>July 2018</p>  <p>Undisclosed</p> <p>Sale to Bracket a portfolio company of Genstar Capital Sole Financial Advisor</p> |  <p>June 2018</p>  <p>\$3,030,000,000</p> <p>Sale of FIMEI to CVC Capital Partners Sole Financial Advisor</p> |  <p>April 2018</p>  <p>\$1,400,000,000</p> <p>Sale to Humana Inc., TPG Capital, and Welsh, Carson, Anderson & Stowe Sole Financial Advisor</p> |

(1) From January 2017 to 1 November 2019; source: Thomson One

Clients First—AlwaysSM

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For further information on Jefferies Healthcare Investment Banking, please contact: London.hc.conference.core@jefferies.com

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