2020 China life sciences and health care M&A trends report
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Preface

In 2019, M&A transactions in China experienced the lowest deal value since 2013.1 With a slowing GDP growth, tightening credit policy, and US-China trade frictions; in & outbound transactions involving industry players, operators and financial investors reduced their risk taking.

In this report, we dive into the Life Sciences and Health Care Industry in China and look at how M&A activities are currently being impacted by these uncertainties, and more specifically, the deal pattern for a number of subsectors: drugs, biotech, medical service institutions, and medical device manufacturers. Interestingly while there was an overall downward trend, biopharma companies remain 'hot' targets for investors in 2019, supported by emerging market demand, strong policy support, and the availability of multiple exit channels.

Looking ahead into 2020, we are discussing current trends, observing live business cases, and identifying the 'new next normal' developments. The black swan COVID-19 event has certainly brought challenges to China's (and global) economy, it has also sped up digital transformation of the healthcare industry, which will prompt a new wave of capital investment into the health and tech sectors this year. We shall expect growing interests in the VIC model in biopharma, primary care centers, and homegrown high-class devices projects. Finally, as the industry reform deepens, consolidation will continue among market players like distributors, retail stores, and medical device manufacturers.

Without doubt, the next few months many actors will feel the negative impacts of the macro economic downturn. In such times, opportunities are more than likely to emerge, driven by bold innovations embracing broader policy support measures, that will structure the industry for a longer time to come.

Bob Chen
China Life Sciences & Health Care M&A Partner
1. Overview of 2019 China life sciences and health care M&A

1.1 2019 China M&A deals in a nutshell

China M&A activities in the life sciences and healthcare industry slowed down in 2019, with around 24% decline in both total deal count and value compared to 2018. (See Figure 1)

Both domestic and cross border deals slid last year: domestic deal count dropped from 328 to 268, with deal value decreasing from USD29.2 billion to USD20.8 billion. Correspondingly, cross border deal count dropped from 103 to 63, with deal value decreasing from USD7.2 billion to USD6.9 billion.

The reasons behind these drops could be multiple:

**Slowdown of China’s economic growth and tightening policy.** Domestically, in 2019, China recorded the slowest GDP growth rate in the past 28 years—6.1% per the National Bureau of Statistics2. The tightening credit policy at financing institutions continued, causing low liquidity in the market and spending cuts on deal investments at the company level. In addition, the Ministry of Commerce published, “The Code of Practices for the Report Filing (Pre-approval) of Foreign Investments” in May 20193, a guideline on post-deal reporting for foreign investments, as an initiative to strengthen post-merger supervision and quality development of outbound transactions.

**Increasing restriction of foreign countries.** Overseas regulators turned 2019 into a tough year for cross border transactions. The intensified trade friction between the United States and China since the second half of 2018 has been shaking the confidence of investors, not to mention the new draft of rules from The Committee on Foreign Investment in the United States (CFIUS), which were unveiled in September 2019 to implement FIRRMA. FIRRMA expands CFIUS’s jurisdiction to foreign investment, focusing on US technology, infrastructure, and data.

On the other side of the Atlantic, the new EU framework for the screening of foreign direct investments officially emerged full force on 10 April 2019, with the aim to safeguard Europe’s security and public order in relation to foreign direct investments into the EU. Though not specifically directed at China, the act has created a more complex procedural environment for certain categories of investment activities from China going forward.

In the face of these uncertainties from both domestic economic conditions and overseas regulatory bodies, funding owners are taking on a prudent posture when it comes to investment, driving the deal value to a record low since 2014.

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**Figure 1: Total deal value and deal count of China life sciences and health care M&A transactions (2014 to 2019)**

Note: The above deal count includes 271 deals with undisclosed deal value.
Source: MergerMarket, Deloitte analysis
1.2.1 Cooling down of both outbound and inbound deals from 2018

There has been a cooling down of cross border trends in 2019 for both inbound and outbound deals. Deal numbers for both dropped about the same proportion, around 35% (Figure 2).

Outbound deals, which accounted for 70% to 85% of cross border deals in past years, plunged to new depths in 2019 from a deal number perspective. Chinese companies’ outbound investment decrease shows up in both the United States and EMEA region, which is a result of radical changes in international relationships. While for inbound deals there was a surge in 2018, the numbers returned to 2017’s level in 2019. One contributor in 2018 was the 18A item in HKEx, which aimed to attract innovative biotech companies. The new rule issues one suitability to list is “Biotechs have received meaningful investment from sophisticated investor six months before listing.” Later, sharp price drops since the IPOs of several biotech companies that benefited from the 18A rule has cooled down the enthusiasm of financing companies.

With the hot biopharma subsector dropping to 2017 levels, with 11 deals a year, (Figure 3), it seems that financing companies slowed down the processing of M&A deals in 2019. Half of the declines in deal numbers in the medical device sector resulted from caution from both the financing and medical device companies.

Figure 2: Cross border deal volume

![Cross border deal volume](image)

Note: For average deal size to be comparable, the above deal count does not include 56 deals with undisclosed deal value. Source: MergerMarket, Deloitte analysis

Figure 3: Cross border deal volume by target sector

![Cross border deal volume by target sector](image)

Note: For average deal size to be comparable, the above deal count does not include 56 deals with undisclosed deal value. There is one deal in 2017 with the target’s industry categorized as “other”, and therefore it is not included in the above diagram. Source: MergerMarket, Deloitte analysis
1.2.2 SINO-US Conflict keeps escalating

Historically, the United States dominated half of China’s outbound M&A deals, reaching to around 63% in 2018, the highest in the past five years (Figure 4). Yet SINO-US conflicts started to show their effect on cross border deals in 2019 Q1, dropping to five deals in Q1, and maintained the same trend during the following two quarters. Deals did bounce back to nine in the Q4 (Figure 5). But exclude the one gigantic deal of USD2.7 billion invested by Amgen into Beigene at a 20.5% share in November, and the value trend is still flat.

One of the main causes is CFIUS reforms. Since October 2018, CFIUS has strengthened the administrative review of acquisitions and investments from foreign interest in “sensitive” sectors with “critical technologies” in which “biotech” and “pharma” are definitely included. The reform’s impacts are mainly a) the US government is allowed to suspend/block acquisition of minority investments, not control stakes like before; b) foreign interest is expanded to enterprises with “foreign limited partners,” even the enterprise located in the United States or with US’s nature of the general partners; c) the US government has the right to investigate the investment/acquisition before the foreign interest starts filing and without a deadline of the filing’s feedback; d) Deals can be disallowed and a penalty up to the value of the deal can be imposed if there is a CFIUS ruling against the deal.4

Note: For average deal size to be comparable, the above deal count does not include 138 deals with undisclosed deal value.
Source: MergerMarket, Deloitte analysis

One of the main causes is CFIUS reforms. Since October 2018, CFIUS has strengthened the administrative review of acquisitions and investments from foreign interest in “sensitive” sectors with “critical technologies” in which “biotech” and “pharma” are definitely included. The reform’s impacts are mainly a) the US government is allowed to suspend/block acquisition of minority investments, not control stakes like before; b) foreign interest is expanded to enterprises with “foreign limited partners,” even the enterprise located in the United States or with US’s nature of the general partners; c) the US government has the right to investigate the investment/acquisition before the foreign interest starts filing and without a deadline of the filing’s feedback; d) Deals can be disallowed and a penalty up to the value of the deal can be imposed if there is a CFIUS ruling against the deal.4

Note: For average deal size to be comparable, the above deal count does not include 24 deals with undisclosed deal value.
Source: MergerMarket, Deloitte analysis
This reform imposes great impact on China LSHC companies, which have continuously pursued high-end techniques, innovative product portfolios, and access to overseas markets in past years as well as by investing aggressively globally, especially in the United States. To alleviate the impact, Chinese companies have adopted more flexible ways like license-in (Table 1) by buying and translating IP to commercial products in (greater) China, or introducing mature products through a payment package including upfront, milestone payment, and royalty.

### Table 1: Key license-in cases from the US

<table>
<thead>
<tr>
<th>Date</th>
<th>CN Company</th>
<th>US Company</th>
<th>Products</th>
<th>Upfront Value, Mn USD</th>
<th>Milestone Payment Value, Mn USD</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 2018</td>
<td>CSTONE</td>
<td>Blueprint Medicine</td>
<td>Avapritinib, BLU-554, BLU-667</td>
<td>40</td>
<td>346 and royalty</td>
</tr>
<tr>
<td>June 2018</td>
<td>CSTONE</td>
<td>Agios Pharmaceuticals</td>
<td>ivosidenib</td>
<td>12</td>
<td>346 and royalty</td>
</tr>
<tr>
<td>December 2018</td>
<td>ZaiLab</td>
<td>MacroGenics</td>
<td>Margetuximab, MGD013, TRIDENT™</td>
<td>25</td>
<td>140 and royalty</td>
</tr>
<tr>
<td>July 2019</td>
<td>ZaiLab</td>
<td>Incyte</td>
<td>INCMA0012</td>
<td>17.5</td>
<td>60 and royalty</td>
</tr>
<tr>
<td>November 2019</td>
<td>Beigene</td>
<td>Zymeworks</td>
<td>ZW25, ZW29</td>
<td>40</td>
<td>390 and royalty</td>
</tr>
<tr>
<td>November 2019</td>
<td>3SBio</td>
<td>Verseau Therapeutics</td>
<td>VTX-0811</td>
<td>na</td>
<td>na</td>
</tr>
</tbody>
</table>

Source: MergerMarket, Deloitte Research

### 1.2.3 Middle sized deals shrank the most in 2019

When zooming in on cross border deal trends, we find the middle size deals (USD 100M—500M) shrank the most in 2019 compared with previous years (Figure 6). Historically, these deals are comprised of two types of transactions:

**Type A**—PE/VC, other financing companies or conglomerates invest in promising companies seeking capital appreciation. These deals will end up with the acquisition of a minority investment, not control stakes, for example, foreign capital investment in CSTONE, Ascentage, and Innovent, before they were listed on the HKEx.

**Type B**—Industry players invest in mid to small companies with innovative pipelines or technology or an attractive market share in a niche market—a move to implement their portfolio strategy or expand business to overseas market. These deals often end up with the acquisition of more than a 30% stake share, even 100%. For example, Aier Eye Hospital Group Co., Ltd. acquired a 35% share of Singapore-based ISEC Healthcare Ltd. to expand its eye care business to South East Asia.

For 2018 deal volume, the proportion of the two parts are even. While in 2019, though the two both dropped, Type A dropped the most, from around 12 deals to 2. This is mainly due to financing companies being more cautious under an increasingly complex political and economic international environment.
1. Overview of 2019 China life sciences and health care M&A

**Figure 6: Cross border investment by deal value, USD M**

<table>
<thead>
<tr>
<th>Year</th>
<th>Deal value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>11,205</td>
</tr>
<tr>
<td>2018</td>
<td>7,208</td>
</tr>
<tr>
<td>2019</td>
<td>6,913</td>
</tr>
</tbody>
</table>

Note: For average deal size to be comparable, the above deal count does not include 56 deals with undisclosed deal value.
Source: MergerMarket, Deloitte Research

1.3 Drug R&D and manufacturing sector cools down

**Figure 7: Deal value and deal count of M&A transactions by sectors in life sciences and health care (2014 to 2019)**

Note: For average deal size to be comparable, the above deal count does not include 271 deals with undisclosed deal value.
Source: MergerMarket, Deloitte Research
Despite the downward trend of both the overall deal value and volume, the M&A activities in biotech were still heated in 2019, with an increase in average deal size from USD 72m to USD 118m from 2018 to 2019. A similar trend is also observed in the medical services sector, but largely driven by individual giant deals. The other sectors have all shown a decrease in both value and volume.

Specifically, the drug R&D and manufacturing industry is cooling down from its highest point in 2018 in both volume and value perspectives. Zoom into the subsector, and the trends are different with various causes. For the TCM and chemical drug sector, despite the fluctuation of deal value in the drugs sector driven by state-owned enterprises, M&A will continue along with the expansion of VBP scope and the government’s promotion of innovative drug development. As for the rising biopharma sector, M&A trends in this sector will stay dynamic for the preferable policy environment and influx of large capitals.

Figure 8: Drug R&D and manufacturing companies M&A trends

Note: For average deal size to be comparable, the above deal count does not include 12 deals with undisclosed deal value.
Source: MergerMarket, Deloitte Research
1.3.1 Fluctuation in TCM & chemical manufacturing sector

M&A deals in the TCM & chemical drug manufacturing industry reached a peak in 2018, with 66 deals totalling 16 billion USD. The trend in 2019 went back to almost the same level of 2017 (see Figure 9). Behind this “up and down”, some boosts can last and some are fading.

Figure 9: Chemical & TCM manufacturing deal volume & value

- Reform of state-owned assets resulted in some of the huge deals. Of the 17 deals over USD500M, 5 deals can be categorized as part of state-owned asset reforms, including Yunnan Baiyao Group’s USD7.3 billion deal in 2018 and USD830 million deal in 2017 and Harbin Pharma Group’s USD675 million in 2017 and USD678 million in 2019. Reforms of state-owned assets in the pharmaceutical industry have been emphasized by the central government since 2013, one of the eight key sectors targeted for reform. Of the 47 listed companies with state-owned asset, many have completed the reforms in the past years, with the surge in 2018 estimated to be the latest stage of the reforms.

- VBP is another driving force. Officially starting from the end of 2018, VBP keeps expanding the coverage of treatment areas from the first batch's of 25 drugs to the current 58 and is estimated to expand continuously to cover around 160 drugs in the future. Recently announced by NMPA, it will soon expand to injection formulation. VBP has caused radical changes in the pharmaceutical sector, especially among generic manufacturers. Mid to small generic manufacturers which didn’t have extra cash flow to invest in GQCE are disadvantaged when bidding in national VBP. Further, the fierce price cut for VBP products left little room for these mid to small companies that don’t have deep-pocket to build in-house API and thus cannot compete with large companies’ profitability under VBP’s pressure. This resulted in a trend of mid to small companies being acquired and financing companies’ investment in large pharmaceutical companies.

There are around 24 deals that are VBP winners related to M&A in 2018 and 2019. These deals can be divided into almost evenly into two types, a) those that enrich the current VBP portfolio and API capability, such as Lepu Healthcare acquiring 45% of Zhejiang Neo-Dankong Pharma and Chongqing YaoPharma acquiring 76% of AVIC (Tieling); and b) those that strengthened their innovative drug portfolio and R&D capability, such as Luye Pharma’s acquiring of 98% of Shandong Boan Biological share for it’s therapeutic antibody products at the clinical trial stage and Zhejiang Conba’s investment in Genor Biopharma, which is focusing on monoclonal antibody development.

- A rising emphasis on innovative drug development is also a contributor. From the 12th FYP to the 13th FYP, the government kept inclining towards innovative drugs by investment on basic scientific research and tax incentives on the R&D investment of pharmaceutical companies. Since VBP squeezes a large portion of generic drugs' profits, innovative drugs will be the future profit contributor and ensure a pharmaceutical company’s sustainable development. Thus, pharmaceutical companies, especially the big ones, are looking for innovative start-ups or small companies as a M&A target to enrich their pipeline.
These factors contributed to the surge of 2018 deals. With new capital rules and the SINO-US conflict as well as Brexit, deals dropped in 2019. The situation will be alleviated if provided with a more favorable political environment. In the long term, this market will keep its vigour.

1.3.2 Biopharma is still a hot topic
For biopharma, though the deal volume fell almost by half in 2019, deal value kept growing at double digits (Figure 10), driven by gigantic deals like Amgen’s acquisition of 20.4% of Beigene and Grifols acquisition of 26% of RAAS. Biopharma bucked the trend in 2019 as a result of multiple driving forces.

Figure 10: Biopharma M&A trends (2014-2019)

Note: For average deal size to be comparable, the above deal count does not include 22 deals with undisclosed deal value.
Source: MergerMarket, Deloitte Research

- China’s biopharma industry is an emerging player in the global biopharma market.
China is currently the second largest pharmaceutical market and is estimated to be the second largest biopharma market in 2020. Also, on patent numbers/scientific paper numbers of life sciences and biotech perspectives, China also ranked second globally, after the US. Life science scientific papers have risen from 6.56% to 18.07% worldwide.\(^5\) With support of financing companies and talent trained for years in MNC companies, local biotech start-ups seized the opportunity to bring more innovative biologics to the Chinese market (Table 2).

Table 2: Innovative biologics among China’s biotech start-ups

<table>
<thead>
<tr>
<th>Product</th>
<th>Company</th>
<th>Approval Date</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Camrelizumab</td>
<td>Suzhou Shendiya (Founded by Hengrui)</td>
<td>May 2019</td>
<td>PD-1 Antibody</td>
</tr>
<tr>
<td>Toripalimab</td>
<td>Junshi</td>
<td>December 2018</td>
<td>PD-1 Antibody</td>
</tr>
<tr>
<td>Sintilimab</td>
<td>Innovent</td>
<td>December 2018</td>
<td>PD-1 Antibody</td>
</tr>
<tr>
<td>Adalimumab</td>
<td>Bio-Thera</td>
<td>November 2019</td>
<td>Humira's biosimilar</td>
</tr>
</tbody>
</table>

Source: GBI Health, Deloitte analysis
• **Strong policy support on biopharma.** Since 2016, the NMPA (former CFDA) started to accelerate drug approval turnover time and opened several fast tracks for innovative drugs and drugs with urgent clinical needs. The NME approval number has grown from 10 in 2016 to 58 in 2018. This shortened review time and inclination to new drugs has encouraged both MNC and local players to invest in new drug development. Besides, China has officially adopted the MAH mechanism in the newly revised Drug Administration Law, creating more flexibility for innovative drug development by unbinding drug patent owners from drug manufacturers.

• **Multiple exit channels for PE/VCs.** A growing number of China biopharma companies are adopting the VIC model to sustain their business and to transfer IP to novel drugs (V stands for venture, I for IP, and C for CRO). Biopharma startups use funds invested by venture companies to transfer their IP through cooperation with CRO, which doesn’t need a lot investment in fixed assets and human resources for R&D. In this model, VC is the engine and backup of the whole process, attracting more capital to this sector that can lead to a healthy growth of these start-ups and encourage establishment of more start-ups. New listing rules of the HKEx and establishment of the Science and Technology Innovation Board (STI) in 2018 provides more attractive financing platforms for biotechs. At the same time, it provides investors behind these biotechs with earlier exit channels, especially for biotech in "pre-revenue" stages. Since launched, STI has 3 biotech companies listed, compared to 12 on the HKEx. Though average STI IPO scale is lower than the HKEx, the overall performance is outstanding, almost double the size of IPO scale, with an 88.5% increment (Figure 11&12).

![Figure 11: IPO scale compared to Feb 21st 2020 market cap, USD M](source: Wind, Deloitte analysis)

<table>
<thead>
<tr>
<th>Company</th>
<th>IPO</th>
<th>Market cap</th>
<th>Increment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovent</td>
<td>1,169</td>
<td>853</td>
<td>+88.5%</td>
</tr>
<tr>
<td>BelGee</td>
<td>484</td>
<td>1,608</td>
<td>+22.4%</td>
</tr>
<tr>
<td>CanSinoBIO</td>
<td>645</td>
<td>3,848</td>
<td>+39.3%</td>
</tr>
<tr>
<td>Junshi Biosciences</td>
<td>588</td>
<td>1,608</td>
<td>+22.4%</td>
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<tr>
<td>Bio-Tera</td>
<td>519</td>
<td>3,848</td>
<td>+72.3%</td>
</tr>
<tr>
<td>Alphamab</td>
<td>479</td>
<td>4,708</td>
<td>+21.4%</td>
</tr>
<tr>
<td>Herilys</td>
<td>328</td>
<td>4,708</td>
<td>+42.8%</td>
</tr>
<tr>
<td>Cstone</td>
<td>297</td>
<td>4,708</td>
<td>+60.4%</td>
</tr>
<tr>
<td>Akebers Pharmaceuticals</td>
<td>251</td>
<td>4,708</td>
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</tr>
<tr>
<td>SinoMed Biotech</td>
<td>113</td>
<td>4,708</td>
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</tr>
<tr>
<td>Ascletis Pharma</td>
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<td>4,708</td>
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</tr>
<tr>
<td>Mepharma</td>
<td>150</td>
<td>4,708</td>
<td>+150.0%</td>
</tr>
<tr>
<td>BioSource</td>
<td>177</td>
<td>4,708</td>
<td>+88.5%</td>
</tr>
<tr>
<td>TOT Biopharm</td>
<td>75</td>
<td>4,708</td>
<td>+150.0%</td>
</tr>
</tbody>
</table>

![Figure 12: STI & HKEx biopharma IPO scale compared to Feb 21st 2020 market cap, USD M](source: Wind, Deloitte analysis)

<table>
<thead>
<tr>
<th>Company</th>
<th>IPO</th>
<th>Market cap</th>
<th>Increment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovent</td>
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<td>853</td>
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</tr>
<tr>
<td>BelGee</td>
<td>484</td>
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<td>+22.4%</td>
</tr>
<tr>
<td>CanSinoBIO</td>
<td>645</td>
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<td>+39.3%</td>
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</tr>
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<td>113</td>
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<td>TOT Biopharm</td>
<td>75</td>
<td>4,708</td>
<td>+150.0%</td>
</tr>
</tbody>
</table>

**Outbound demands increased rapidly in past two years.** This trend is mainly driven by the growing deep pockets of China’s investment companies, their interest in the biopharma industry, and the demand for local pharma companies to build their biologics products portfolio in the short term (Figure 13). For the total 36 deals we monitored, 6 companies had IPOs after receiving the latest round of investment. For the latest round, five were initiated by investment companies (Table 3).
1. Overview of 2019 China life sciences and health care M&A

1.4 Deal value surged in the hospital segment driven by mega deals

Investment in hospital and management companies have been dominating the medical service investment activity, especially in 2016 when the activities reached a peak, driven by the Chinese government’s public health care reform and the opening of the hospital sector. Average deal size increased by 32% and deal count increased by 21%, led by funding that poured in from private capital. At the same time, specialty hospital investment almost tripled in total deal value in 2016.

**Figure 13: Biopharma outbound M&A trends (2014-2019)**

![Figure 13: Biopharma outbound M&A trends (2014-2019)](chart)

**Table 3: IPO tracking after outbound M&A deals**

<table>
<thead>
<tr>
<th>Investment date</th>
<th>IPO Date</th>
<th>Target Company</th>
<th>Target Country</th>
<th>Bidder Company</th>
<th>Deal Value USD(m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 2018</td>
<td>May 2019</td>
<td>Xynomic Pharmaceuticals, Inc.</td>
<td>USA</td>
<td>Bison Capital Acquisition Corp.</td>
<td>450</td>
</tr>
<tr>
<td>July 2018</td>
<td>February 2019</td>
<td>Gossamer Bio, Inc.</td>
<td>USA</td>
<td>Hillhouse Capital and other investment companies</td>
<td>230</td>
</tr>
<tr>
<td>December 2017</td>
<td>October 2018</td>
<td>Orchard Therapeutics plc</td>
<td>United Kingdom</td>
<td>Beijing Capital Grand and other investment companies</td>
<td>110</td>
</tr>
<tr>
<td>November 2018</td>
<td>May 2019</td>
<td>NextCure, Inc.</td>
<td>USA</td>
<td>Shenzhen Ping’an Innovation Capital Investment and other investment companies</td>
<td>93</td>
</tr>
<tr>
<td>September 2017</td>
<td>September 2018</td>
<td>Gritstone Oncology, Inc.</td>
<td>USA</td>
<td>Lilly Asia Ventures and other investment companies</td>
<td>93</td>
</tr>
<tr>
<td>July 2016</td>
<td>November 2017</td>
<td>Fireman B.V.</td>
<td>Germany</td>
<td>Staidson (Beijing) Biopharmaceuticals Co., Ltd.</td>
<td>20</td>
</tr>
</tbody>
</table>

Source: MergerMarket, Deloitte analysis

Source: Wind, public information
Figure 14: Medical services M&A trends by types of medical providers (2014 to 2019)

Note: For average deal size to be comparable, the above deal count does not include 52 deals with undisclosed deal value.
Source: MergerMarket, Deloitte Research

Figure 15: Domestic hospital M&A trends (2014 to 2019)

Note: For average deal size to be comparable, the above deal count does not include 8 deals with undisclosed deal value.
Source: MergerMarket, Deloitte Research
However, the alliance between social capital and public resources did not generate the profitable outcome as many investors expected. Some private hospital management companies experienced “culture shock” when taking over public hospitals and problems started to emerge. Shortly after the hot waves in 2016, capital investment has been cooling down since 2017, and the trend extended further into 2019. Giant deals did catch some eyeballs: New Frontier Corporation spent USD 1,321m to acquire United Family Healthcare, a leading general private hospital in China in July 2019, and there was another undisclosed deal also valued over USD 1,000m. These two deals drove the average deal size in 2019 to USD 159.2m. If excluding these two deals in 2019, however, the deal value related to hospitals declined by USD105m, a 5% decrease compared to 2018.

Figure 16: Medical services M&A deal value percentage trends by types of providers (2014 to 2019)

Source: MergerMarket, Deloitte Research

Although hospital deals did not show signs of recovery, deals for physical examination centers among the “other providers” category overran the others in 2019, in light of its manageable business model which is easier for duplication and the awakening awareness of consumers’ health self-management. Three deals valued over USD800m were knocked down in 2015, 2018 and 2019 respectively, for which Meinian onehealth as targets in 2015 and 2018 and iKang Healthcare as target in 2019.

Deals for third-party diagnostic centers are also on the rise. Since Alliance HealthCare entered early into the Chinese market through two rounds of buyouts by Tahoe Investment in 2016 to 2017, we have seen deals for domestic centers begin to thrive. This is driven by patient demand, such as the investment in Yimai Yangguang led by Baidu in USD 63m in 2018, and the series B financing of Shanghai Universal Medical Imaging in USD 86m in early 2020.
1.5 Medical devices deals hit by declining cross border investment

The drop of deals in the devices sector in 2019 was mainly driven by the decline in cross border deals. In fact, China has a relatively differentiated medical devices market, and therefore the M&A activities have shown two different patterns for domestic and cross border deals.

China has a large demand in the downstream market, especially in recent years when health care institutions were blooming, with a total market value reaching RMB 629b by 2019. However, high-end devices and high-value consumables such as diagnostic imaging devices, vascular interventional devices, and orthopedic implants are still highly dependent on imports from countries including the US, Germany and Japan. Though we have seen growth in domestic companies like Mindray Medical and United Imaging, which are among the top candidates for manufacturing replacements, imported devices still account for the majority. This urges domestic companies to seek suitable targets abroad for technologies and new product introduction from the global markets, which partly explains why cross border deals are happening on a more frequent basis in the devices sector compared to services.

Mega deals are also observed, such as Biosensors International deal of USD 1,175m acquired by Blue Sail Medical, Argon Medical deal USD 844m acquired by WW Medical and Healthcare in 2017, and SIRTeX Medical deal of USD 1350m acquired by CDH Investments and a consortium of investors in 2018. All the above targets are in area of interventional medical devices for treatment of oncology or cardiology.

On the other hand, a majority of the domestic manufacturers are small to medium size companies, with capacity mainly centralized in low-value consumables. Under this market background, domestic deals tend to be smaller in terms of average deal size, which has been decreasing from USD 68m to 57m from 2016 to 2019. As the sector consolidation and home-made initiative moves forward, a number of domestic manufacturers have come into the spotlight: LifeTech Scientific, a company manufacturing advanced minimally interventional medical devices for cardiovascular and peripheral vascular diseases and disorders, raised USD 297m from China Everbright in 2018 (the deal value is based on MergerMarket’s estimate of target’s closing share price one day prior to the announcement date); and Shanghai Runda Medical Technology, which is dedicated to provide full range of IVD products, received funding from the Hangzhou Xiacheng District’s state-owned investment in the amount of USD 210m in 2019.

### Figure 17: Medical devices M&A deal trend by regions (2014 to 2019)

<table>
<thead>
<tr>
<th>Year</th>
<th>Domestic deal count</th>
<th>Cross border deal count</th>
<th>Domestic deal value</th>
<th>Cross border deal value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>4,394</td>
<td>3,701</td>
<td>2,901</td>
<td>493</td>
</tr>
<tr>
<td>2015</td>
<td>5,801</td>
<td>1,517</td>
<td>19</td>
<td>37</td>
</tr>
<tr>
<td>2016</td>
<td>4,761</td>
<td>803</td>
<td>3,958</td>
<td>19</td>
</tr>
<tr>
<td>2017</td>
<td>5,863</td>
<td>2,927</td>
<td>2,936</td>
<td>18</td>
</tr>
<tr>
<td>2018</td>
<td>5,439</td>
<td>2,843</td>
<td>2,596</td>
<td>24</td>
</tr>
<tr>
<td>2019</td>
<td>3,533</td>
<td>3,034</td>
<td>12</td>
<td>12</td>
</tr>
</tbody>
</table>

Note: For average deal size to be comparable, the above deal count does not include 103 deals with undisclosed deal value. Source: MergerMarket, Deloitte Research
2. 2020 outlook for Chinese life sciences and health care M&A

2.1 COVID-19 acts as a "catalyst" for the technology surge in health care

The outbreak of the novel coronavirus in China overshadowed the beginning of 2020. Total deals recorded in China including Hong Kong from 1 January to 10 February, 2020 were only 84, with total deal value worth USD 8.411bn, down by 54.1% and 76.6%, respectively, compared to the same period last year, according to data from Mergermarket. The necessity for a responsive and effective public health care system while at the same time curbing the spread of the virus has never been as urgent as it is now. The virus has prompted China’s application of some next-generation technologies in certain health care offerings and in areas of public health management. Meanwhile, related financing activities are still alive. From January to February 2020, PE/VC investment in areas of digital health amounted to USD 217m, at a total count of 11 deals, taking up around one-fourth of the total financing activities in terms of both value and volume for the entire LSHC industry in China. This could probably mark a new wave of capital investment flocking to the “health & tech” sector this year.
2.1.1 Online medical consultation, 5G, AI, big data emerge

Although online medical platforms are no novelty to the Chinese, the outbreak brings it back into the spotlight, due to the need for human-to-human interactions to take place remotely. More than 10 online healthcare platforms including JD health, Ping An Good Doctor and WeDoctors launched their online consultation services for free to the public in response to the outbreak in late January 2020. The move also gained unprecedented support from the government—the National Health Commission issued two notices within four days in early February 2020 to encourage the adoption of online platforms to promote virus prevention. Under such incentives, visits to these platforms were mounting. Take Ping An Good Doctor as an example: the total visits to the APP reached 1.11 billion from late January to mid-February 2020, with new registered users increasing tenfold, and the daily consultation by new users eight times higher than usual.

While the apps are excited about their data, investors might need to act with caution. An investment would make more sense if the surge proves sustainable, and furthermore, monetized. The functions of online consultations could be restricted, limited by problems such as uneven doctor qualifications resulting in poor service quality, no direct links between prescriptions and drug purchases, or lacking offline facilities for diagnosis, etc. In the end, it is all about customer experience. Candidates that can address customer pain points will be more competitive.

A good example is the "prescription drugs at your fingertips" service launched on TMALL by AliHealth on February 6, 2020, through which patients can ask doctors directly for the prescription drugs most common to treat chronic diseases and the drugs will be delivered right to patients’ home.

The online channel becomes even more crowded by game players from the public sector. A number of public medical institutions across Jiangsu, Shanghai, Zhejiang and Wuhan, etc. have all embraced online consultations once realizing its popularity caused by the epidemic. In addition, since the end of February 2020, cities like Hangzhou, Chengdu, and provinces like Fujian have all allowed direct medical insurance reimbursement settlements when patients are making payments for online medical service or prescriptions. The model of an accredited medical institution equipped with handy online platforms could be rolled out quickly prompted by the outbreak, and this creates opportunities for those tech companies that can provide fundamental support for these institutions.

AI technology also became a focus as part of combating the virus. This technology has gradually grown to be full-fledged under years of nurturing by funding support.

Figure 18: Financing activities for AI vs. other digital health sectors in China start-ups (2017 to March 2020)

<table>
<thead>
<tr>
<th>Year</th>
<th>AI Deal Value (USD m)</th>
<th>Other Digital Health Sectors</th>
<th>Total Deals</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>32% 3,563</td>
<td>68%</td>
<td>195</td>
</tr>
<tr>
<td>2018</td>
<td>26% 8,857</td>
<td>74%</td>
<td>258</td>
</tr>
<tr>
<td>2019</td>
<td>26% 3,779</td>
<td>74%</td>
<td>159</td>
</tr>
<tr>
<td>2020</td>
<td>50% 243</td>
<td>50%</td>
<td>20</td>
</tr>
</tbody>
</table>

Note: 128 of the above deals do not disclose the exact deal value, and therefore we used the rounded amount from the data source to represent the approximate deal value. USD is converted based on the average exchange rate for each year. Source: VCbeat.top, Deloitte analysis
On the battle frontline, Shanghai Public Health Clinical Center and YITU Technology together launched the first COVID-19 AI imaging diagnostic evaluation system on 28 January 2020. This lung CT evaluation system can provide auxiliary diagnoses to help doctors detect visual signs of the pneumonia associated with COVID-19 on images from lung CT scans and make quantitative analyses on the severity of the disease within seconds. After proving its accuracy through hundreds of clinical cases, it was later applied to over 20 provincial hospitals across the nation.

In communities, the "AI automated voice calling assistant" developed by iFlytek started to provide free calling services for 30 provinces and regions that were declared the highest level of public health emergency in China on 25 January 2020. This AI calling system helps to follow up on the conditions of high-risk groups by making phone calls and collecting feedback or sending out messages regarding virus prevention measures. The feedback is then recorded and reported to local health commissions and medical institutions, including any cases that require further action. According to iFlytek, the system reached about 45 million residents from 21 January to April 2020, which helped improve the efficiency of medical staff's notification and follow-up process, and reduced the risk of potential virus transmission resulted from face-to-face interactions.15

Other technologies have also been put on display:

Remote medical consultation systems were put into use in several hospitals around China, such as the West China Hospital of Sichuan University, First Affiliated Hospital of Kunming Medical University, and Huoshenshan Hospital. The system is supported by Huawei's 5G technology and high-speed network, which allows experienced doctors to give medical consultations remotely for severe cases.

Drones were also lending a hand in the battle. Shanghai police officers used drones that are equipped with cameras, speakers, or infrared temperature sensors to patrol public crowded areas for people without facemasks, and perform thermal sensing or aerial broadcasting. Bigger drones were even dispatched as vehicles to send people quarantined at home food and medical supplies in order to minimize human contact and overcome delivery labor shortages.

The so-called “smart city”—Hangzhou, home to Alibaba, took the lead in adopting the "Hangzhou Health QR Code" on 11 February 2020. The code was developed with an initiative to efficiently identify potential high-risk groups while ensuring a smooth migration of people going back to work after the Spring Festival. Users can apply for the QR code by making declarations on the Alipay App, and a code in either green, yellow or red will be assigned after matching personal records with the big data collected from multiple data points on the phones’ apps. The code will also dynamically update if people are moving around or have finished their quarantine. Beginning early March 2020, the code has been launched successively in multiple provinces around China.

The examples could be numerous to show that quite a few companies in China have performed well under the trials caused by the virus. Bruce Aylward, WHO assistant director general, complimented China for being fast in finding and isolating cases and tracking their close contacts.16 These technologies made a great contribution to making all this possible. In fact, the virus might have sped up the nationwide health care digital transformation and could point the direction to where the next round of investment hotspots will be located.

Indeed, companies like Inspur Health, CuraCloud and Chunyu doctor are already running ahead in this capital competition: from late February to early March, 2020, these three companies declared that they have respectively closed a new round of financing amounting to several hundred million RMB. All of these companies have played their own part in the COVID-19 battle, and we should expect to hear about more deals from high potential health & tech companies like those mentioned above.
2.1.2 Further development areas lead to the future of healthcare

Problems also emerged, especially in the early stage of the outbreak, that could be deemed as reminders for industry insiders to think about the next step. For example, an integrated resource management system could have been built to manage the medical supplies logistics, efficiently deploy resources, and reduce manual work. Big data and modelling could also have been introduced earlier for epidemic tracking, such as Metabiota and BlueDot, both of which work with governments and public health agencies to assess infectious disease transmission risk. BlueDot actually notified its clients of the coronavirus threat at the end of December 2019, several days before both the World Health Organization and the US Centers for Disease Control and Prevention (CDC) issued their public warnings. Despite many of the robots being developed for food and medical resources delivery, the main force on the frontline battle still relied on humans for patient treatment, while a robot in Seattle in the US was reported to help doctors treat their first patient diagnosed with COVID-19.

In the long-term, innovation might further blur traditional health care boundaries, which will be driven by digital transformation and enabled by radically interoperable data and open secure platforms. The behemoths of the China tech industry, including Baidu, Alibaba, JD and Tencent, have all joined this movement that will bring disruptive changes to the digital health sector (Figure 19) and rocketing investment over the years.

Figure 19: Financing activities involved with BATJ investors (2017 to March 2020)\(^\text{18}\)

<table>
<thead>
<tr>
<th>Year</th>
<th>Pre A and angel</th>
<th>Series A</th>
<th>Series B</th>
<th>Series C</th>
<th>Series D</th>
<th>Others</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>37</td>
<td>103</td>
<td>140</td>
<td></td>
<td></td>
<td></td>
<td>140</td>
</tr>
<tr>
<td>2018</td>
<td>16</td>
<td>79</td>
<td>71</td>
<td>17</td>
<td>183</td>
<td></td>
<td>183</td>
</tr>
<tr>
<td>2019</td>
<td>1,008</td>
<td>171</td>
<td>35</td>
<td>198</td>
<td>501</td>
<td></td>
<td>1,913</td>
</tr>
</tbody>
</table>

Note: 2 of the above deals do not disclose the exact deal value, and therefore we used the rounded amount from the data source to represent the approximate deal value. USD is converted based on the average exchange rate for each year.

Source: VCbeat.top, Deloitte analysis
In addition, health is likely to revolve around sustaining well-being rather than just responding to illness. The availability of data and personalized AI can enable precision well-being and real-time micro-interventions that allow us to get ahead of sickness and far ahead of catastrophic disease.19

Companies like Zhiyun Health is one of the examples where the future of health care might be heading. Founded in 2014, it is now a “unicorn” in the area of chronic disease management, after closing a series of RMB 1 billion financings on 8 January 2020. As a one-stop solution provider for chronic disease management, Zhiyun Health uses its AI-based online platform and SaaS system to connect patients and doctors and timely track and offer individualized treatment solutions. At the same time, it is also dedicated to the development of AIoT by transforming its current platform into a big data storage center and building partnerships with pharmaceutical companies and insurance providers by providing them with chronic disease related AI big data support.

Technology developments will lead the health care sector further into a digital age, and certainly will benefit the industry in the long run. As start-up companies keep up the innovation momentum, investment opportunities can be myriad.

2.2 The value chain of China pharmaceutical market is at an inflection point
2.2.1 Biopharma, from me-too/me-better to first-in-class

The China biopharma market is booming and is estimated to be the second largest biopharma market globally within five years. In the next five years, around 20 novel biologics will launch in the China market each year—currently there are more than 800 on-going clinical trials for antibody drugs and it keeps increasing.

In the short term, due to global economic uncertainties in 2020 caused by the COVID-19 outbreak, Brexit, and crude oil price wars, biopharma and PE/VC companies will hold their investment on mid to high risk investments to maintain a healthy cash flow and be less vulnerable in such an environment. And to keep profitable, biopharma companies will pursue license-in instead of M&A in the short term. But in the long run, when the economy is less volatile, China biopharma M&A will continue to gain momentum to meet the continuous market demand of effective drugs and the relative mature ecosystem in the China biopharma industry as well as the top-level design support.

Besides cooperating with CROs for biosimilar development, the China biopharma market will keep looking for overseas new drug candidates and innovative technologies to help enrich their first-in-class portfolio.

2.2.2 CXO on the rise

The success rate of one promising molecular in a pre-clinical stage to final regulatory approval is around 9.6%, and despite the high failure rate, pharma companies must spend about 1.5 billion USD on R&D to develop a successfully launched product. CXO (CRO, CMO, CDMO, SMO), which helps pharma companies at various stage of R&D, can save both costs on human resources and total expenses, at around 25%, compared with in-house investment. M&A in the CXO market will usher in a new round of growth prompted by the below drivers.

Within the growing application of the VIC model in China, IP and venture funds are not hard nuts to crack. This, in turn, will drive rapid growth in the CRO sector along with the increasing M&A trend in this sector.

Cutting edge technologies like AI, cloud calculating, omics etc., can empower CXO to save costs and increase efficiency. Yet arming with these new technologies means investment in instruments and systems, which a CXO may seek from financing companies through share trading. They also need to get these new technologies through various types of cooperation with tech companies, including M&A. Historically in the China pharmaceutical market, the IP owner, and the manufacturer must be the same entity to ensure administrative effectiveness. This has impeded market vitality until the MAH mechanism was tested in some pilot cities, by allowing separate IP owners and manufacturers. With the Drug Administration Law issued, MAH has expanded nationwide, encouraging more flexible drug IP development and manufacture.
2.2.3 Distributor further consolidate
Implementation and expansion of "two-invoice" and VBP has put heavy pressure on the reform of pharma circulation companies. Trends of decreasing tiers of distributors leaves less and less room for mid and small distributors, while larger ones speed up the consolidations. Along with the expansion of VBP, "one-invoice" policies are coming, namely drugs shipped from manufacturing plant directly to end-user. This will drive more cooperation, like M&A between pharma companies and distributors.

During the outbreak of COVID-19, online channels proved themselves to be an effective alternative to offline drug stores. And further encouraged by government through a series of policies like basic health care reimbursement coverage of online return-visits, online channels will enter a new phase of high growth. This in turn, will drive a surge in the need for e-commerce drug supply chain capability. We anticipate there will be increasing cooperation between online pharmaceutical platforms and circulation companies.

Together with the consolidation of circulation companies and increasing online channel supply chain needs, distributors will keep improving efficiency through holistic digital solutions, including a) integrated logistic plans through multiple warehouse, transport corporations and end-user inventory and b) unified ERP systems. These updates will need both investment and new technology acquisition.

2.2.4 Retail store consolidation and growing demand for DTP
Under the environment of fierce price cuts to drugs, the profitability of retail stores will be squeezed. To increase profitability, the chain rate of retail drug stores will keep increasing in the following years. Single independent stores or small retail chains will be M&A targets for the big ones.

More direct-to-patient (DTP) drug stores will also emerge as a result of such dynamic changes in pharma industry. First and the most important factor is the increasing outflow of prescriptions from hospitals to adjacent DTP, as a result of the control of drug expense rates and of overall healthcare expenses and zero mark-up. VBP losers will seek alternative ways to offset their losses with one way through DTP stores that are currently out of VBP range. Moreover, for newly approved drugs, DTP is also an effective channel before entering the National Reimbursement Drug List (NRDL). Commercial teams from pharmaceutical companies can get their business started and won't need to spend much effort on hospital listings.
2.3 The clouds and silver lining in medical service institutions investment

Hospitals were once considered a "cash cow" for investors, due to their superior cash flow cycle coming from relatively rigid demand. However, as mentioned earlier in the 2019 review, capital started to retreat from hospitals in 2017 as investors began to realize the key to a successful hospital deal is about post-deal integration and management. From branding, regulation compliance, to talent retention, each could pose a challenge for private hospitals. This especially stands out among the medium-sized secondary private hospitals located in second-tier or county-level cities. As it takes continuous investment to build up the reputation in service quality and expertise, as well as the absence of equivalent government support and academic roots, make it hard for them to compete against large public tertiary hospitals for the local resources of both competent medical staff to patients.

Since 2018, several pharma companies including CR Sanjiu, Guizhou Yibai and Hunan Jingfeng carved out their hospital segments, which were consolidated through acquisitions several years before, in order to put focus back on their core businesses. After balancing the required input versus the yield, these pharmaceutical companies chose to bail out.

Opportunities still remain with specialty hospitals, as the service model is easier to standardize to form synergies, but as the market gets competitive, large hospital chains or those with unparalleled medical expertise would have a better chance winning market share due to scale effects or differentiation advantage.

Yet it might be early to conclude that the low tide of investment in medical institutions will continue in 2020. The outbreak put the hierarchical medical system under question, a system that has been promoted under the health care reform for years, and why primary care centers did not fully function as the "gate keeper" for the first layer of patient screening. Instead, patients were standing in queues for hours at designated tertiary hospitals for virus tests and hospitalization. This could be a lack of capability and infrastructure or simply a lack of trust from the patients. As 2020 is the mid-term target year for the "Healthy China 2030" initiative, investment in primary care might surge, with efforts in improving infrastructure, advancing digitalization, and enhancing collaboration between community care and upper class hospitals.

2.4 Home-grown medical devices continue as theme for 2020

From "Made in China 2025" and the 13th FYP 4 to 5 years ago to the final guideline "Special Review and Approval Procedure for Innovative Medical Devices" published by CFDA in recent years, China has never slowed down the pace of reform of the domestic medical device sector. Home-grown devices are getting various support in terms of product research, market entry approval, and downstream procurement. Hospitals are also facing mounting pressures from total budget control measures under the payment reform, thus domestically-made products with lower pricing turns out to be a better option for medical institutions. Therefore, chances are strong that investment in domestic companies will continue as the theme for 2020.

The policy stimulus has nurtured a batch of domestic equipment manufacturers that are gaining shares in the market. Many of them are within the subsectors of imaging, IVD, or interventional devices, including SonoScape, MedicalSystem, Amoy Diagnostics, Lepu Medical, and AK Medical, etc. As competition is getting intense in these areas, opportunities might be found in the niche market, such as point-of-care testing (POCT) devices that are currently at a low penetration rate at primary care centers, and could be stimulated by the need for rapid test results under the virus outbreak.

Although the replacement with Chinese-made products is on the way, the market value of the leading domestic companies is still low compared to the international giants. By looking at the evolution of the current medical device conglomerates, namely Medtronic, Roche or Stryker, we can see that acquisitions have played a big role in helping them to expand their footprint. Add to this the low market concentration of the domestic market, and we expect to see more horizontal integrations among the leaders in the coming years.
Conclusion

The aging population, overall income growth, and deeper involvement of social capital has been bringing whirlwind transformation to the Chinese life sciences and healthcare sector over the past decade. China was already the second-largest pharmaceutical market by 2018\(^\text{20}\) and currently has the largest healthcare market in the world\(^\text{21}\). In spite of the economic slow-down that has played out in China in recent years, the sector maintains a high-speed growth led by strong government incentives. With 2020 being the last year of the 13\(^{\text{th}}\) FYP, Deloitte’s life sciences and healthcare industry team looked back at the M&A trends in recent years and shared investment prospects for this coming year.

This report is based on extensive deal data research, in-depth industry studies, and based on our first-hand M&A experience. We highlighted two driving forces that are leading the capital investment trend in our discussion: domestic industry reform initiatives and technology innovation.

**Industry reform initiatives**
Health care reform has been one of the key topics on the government agenda in China.\(^\text{22}\) With an initiative to optimize and balance medical resources, the Chinese government has put forward a series of measures to implement reform in medical service systems, payment schemes, and industry consolidation. Opportunities could arise as the reform deepens, as consolidation is anticipated among smaller market players under the continuous enforcement of policies such as "one-invoice" and VBP. Challenges would remain for those who are seeking vertical integration in the hospital sector, but as the initiative remains positive for social capital investment, primary care and third-party medical service institutions could still find their own places to thrive.

**Technology innovation**
The industry in China used to suffer from minimal innovation and investment in R&D and new product development\(^\text{23}\), being unable to produce a new drug for the global market since artemisinin for malaria in the 1970s\(^\text{24}\). The government has put tremendous efforts into improving competitiveness through heavy investments in technology and stimulus policies under the directives of the 13\(^{\text{th}}\) FYP, and the participation in this innovation initiative by the domestic tech giants brings further dynamism to the sector. The approval for the new cancer drug Brukinsa in late 2019 and inspiring actions taken during the COVID-19 outbreak all demonstrated that the efforts have gradually brought the industry to blossom.

Looking ahead, investments in the life sciences and healthcare industry will continue to be driven by innovation, with broader and more in-depth application of technology in areas of health care, drug discoveries, and medical devices manufacturing.

Under the collaborative effects of the above two factors, we believe that 2020, while not a record year for life sciences and healthcare investments, will continue to be promising as the industry maintains its vitality.
Appendix

Mergermarket M&A deal database inclusion criteria

Deal size
Transactions with a deal value greater than or equal to USD 5 million are included, except for some minority stake acquisitions where a higher threshold. If the consideration is undisclosed, deals are included on the basis of a reported or estimated deal value greater than or equal to USD 5 million.

If the deal value is not disclosed and cannot be confirmed to be greater than or equal to USD 5 million, the deal is included if the target’s turnover/revenue is greater than or equal to USD 10 million.

If neither the deal value nor the target revenue is disclosed, Mergermarket will use other indicators to determine inclusion, including but not limited to:

- Number of employees of the target company—typically 100 employees is used as a base, though this number will vary depending on geography;
- Assets under management exceeding USD 200 million for asset management firms;
- Value of assets/deposits exceeding USD 50 million for banks.

Stake acquisitions
Where the stake acquired is less than 30%, or 10% where the target is based in Asia-Pacific, the deal will only be included if the deal value is at least:

- USD 100 million provided there is also evidence of an advisory mandate;
- USD 500 million in the absence of evidence of an advisory mandate.

Deal types included
- Acquisitions of part or the whole of another entity. Stake acquisitions in accordance with the rules set out;
- Acquisitions/divestments of business units, companies, divisions and trading assets of another entity;
- Mergers;
- De-mergers and spin-offs, where the shares of a subsidiary are distributed to the parent company shareholders and the subsidiary becomes a listed company. Partial de-mergers and partial spin-offs are also included. The announcement date of such transactions is based on when the board of directors of the parent company approves the deal;
- Auctions – only the winning bid, where a binding agreement is in place, is recorded;
- Joint ventures, where two or more companies pool together existing assets to form a new entity;
- Reverse takeovers;
- Debt-for-equity swaps;
- Acquisitions of or offers for preferred shares, provided the shares form part of the economic interest in the target company;
- Property transactions where a property company, with the exception of a property holdco, is acquired or merged with another entity;
- Privatizations.

Deal types excluded
- Joint ventures where the only asset contributed is cash;
- Property/real estate transactions restricted to land, buildings, portfolios or sale and leaseback agreements;
- Equity carve-outs;
- Transactions involving undeveloped oil and gas fields and undeveloped mines;
- Acquisitions of brands, rights and/or licenses (including Government-awarded telecom spectrum licenses);
- Acquisitions of individual assets (i.e. dry bulk vessel) and asset portfolios;
- On-sales/subsequent sales/back-to-back transactions which are inter-conditional;
- Share buybacks in the form of open market purchases or tender offers;
- Equity placements where shareholders’ interests in total remain the same;
- Internal restructurings where the effective change of control does not meet inclusion criteria;
- Acquisition of options and warrants;
- Dual listing collapses.
### Glossary

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIoT</td>
<td>Artificial Intelligence &amp; Internet of Things</td>
</tr>
<tr>
<td>API</td>
<td>Active pharmaceutical ingredients</td>
</tr>
<tr>
<td>BATJ</td>
<td>Baidu, Alibaba, Tencent and JD</td>
</tr>
<tr>
<td>Brexit</td>
<td>Britain exiting from the Europe</td>
</tr>
<tr>
<td>CDC</td>
<td>Centre for Disease Control and Prevention</td>
</tr>
<tr>
<td>CDMO</td>
<td>Contract Development and Manufacturing Organization</td>
</tr>
<tr>
<td>CFIUS</td>
<td>The Committee on Foreign Investment in the United States</td>
</tr>
<tr>
<td>CMO</td>
<td>Contract Manufacturing Organization</td>
</tr>
<tr>
<td>COVID-19</td>
<td>Novel Coronavirus Disease 2019</td>
</tr>
<tr>
<td>CRO</td>
<td>Contract Research Organization</td>
</tr>
<tr>
<td>DTP</td>
<td>Direct-to-patient</td>
</tr>
<tr>
<td>EMEA</td>
<td>Europe, Middle East and Africa</td>
</tr>
<tr>
<td>EU</td>
<td>Europe</td>
</tr>
<tr>
<td>FIRRMA</td>
<td>Foreign Investment Risk Review Modernization Act of 2018</td>
</tr>
<tr>
<td>FYP</td>
<td>Five year plan</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross domestic products</td>
</tr>
<tr>
<td>GQCE</td>
<td>Generics quality consistency evaluation</td>
</tr>
<tr>
<td>HKEx</td>
<td>Hong Kong Exchanges and Clearing Limited</td>
</tr>
<tr>
<td>IPO</td>
<td>Initial Public Offering</td>
</tr>
<tr>
<td>IVD</td>
<td>in vitro diagnostic</td>
</tr>
<tr>
<td>LSHC</td>
<td>Life Sciences and Health Care</td>
</tr>
<tr>
<td>M&amp;A</td>
<td>Merger and acquisition</td>
</tr>
<tr>
<td>MAH</td>
<td>Marketing Authorization Holder</td>
</tr>
</tbody>
</table>
Abbreviation | Full terms
---|---
NMPA | National Medicine Products Administration
NRDL | National Reimbursement Drug List
POCT | Point-of-care testing
QR Code | Quick Response Code
R&D | Research and development
STI | Science and Technology Innovation Board
TCM | Traditional Chinese Medicine
VBP | Volume-based procurement

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1. Translated: China & Hong Kong M&A activity during Q1-Q4 2019, see also https://trendreports.mergermarket.com/reports/4e48f976-bb98-44df-b041-3950c24f140b
10. Vcbeat.top, see also https://dyview.vcbeat.top/specialDetail/289fd3b6e37e430a63822cde0441a6d, https://dyview.vcbeat.top/specialDetail/63448d88cddcd9f695478fe782ef330
18. As of 24 March 2020, there are no deals involved with BATJ investors yet for 2020.
22. Ibid.
23. Ibid.
24. https://www.eastwestbank.com/ReachFurther/News/Article/Leveraging-Chinas-Life-Science-Opportunities
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