China Medical Device M&A Review and Outlook

June 2016
**Strong mergers and acquisitions (M&As) activity in the medical device industry since 2012**

In November 2012, Medtronic, the global medical device giant officially announced the completion of its acquisition of China Kanghui Holdings. In accordance with the agreement signed by both parties, Medtronic paid about US$816 million in cash to Kanghui. In March 2013, Stryker Corp acquired Trauson Holdings Co Ltd for US$764 million to increase the share in China market for orthopaedic products. Covidien acquired Changzhou Kangdi Medical Stapler Co., Ltd. in September 2014, afterwards it experienced tax review, shareholders’ opposition, assets stripping against monopoly, and issuance of ultra-large-amount bonds, and was acquired by Medtronic at a price of US$49.9 billion in January 2015.

Since Pfizer failed to acquire Allergan for US$160 billion in the same year, the acquisition of Covidien by Medtronic became an acquisition case involving the largest amount of money in the medical device sector so far (exceeding the amount of US$21.3 billion which was paid by Johnson & Johnson in 2012 for purchasing Synthes, a medical device service company in Switzerland). In 2015, the annual trading volume of the global healthcare industry reached nearly US$700 billion, far beyond that for 2014.
The global medical device market will maintain rapid growth

According to the statistical forecasting by EvaluateMedTech (based on public data of 300 top medical device manufacturers in the world), the global medical device market will be worth US$477.5 billion by 2020, the compound annual growth rate (CAGR) between 2016-2020 being 4.1%; and in vitro diagnostic products (IVD) with a sales amount about US$ 67.3 billion will remain to be the sub-sector making the greatest contribution by 2020, accounting for 13% of the sales amount of global medical devices, and the CAGR being 6.1% between 2015-2020, higher than the overall growth rate of the medical device industry for the same period.

Major global players in medical device sector (US$ billion)
The China medical device market is smaller but still growing

The CAGR of the medical device industry in China from 2009 to 2014 was more than 20%. Although with a size much smaller than global counterparts, renowned medical device enterprises in China such as Mindray, Yuwell and Lepu Medical have become diversified through joint venture and/or M&As. As regards Shinva, it is more like a leader in a market segment.

Given that the medical device industry in China is now characterized by a small enterprise scale and a low concentration ratio without a mature profit model, its development in the next 10 years will mainly depend upon an increase in the concentration ratio via M&As.

2015 sales of major players in US$ million:
Overview of China M&A in past three years

2015 was a record year for China M&A with deal volumes up 37% and values up 84% at US$734 billion, among which healthcare sector reached US$32 billion in value, 138% up from 2014, with volumes and values hitting new records with investment from strategic buyers, PE/VC and outbound channels.

We expect that the global wave of mergers and acquisitions will continue in 2016, and that both quantity and scale of deals in China’s pharma and healthcare industry will be higher than 2015.

In China, investment trends in the healthcare industry are influenced by medical reform, especially when involving core assets or businesses such as hospitals. Over the past few years, an increasing number of policies have been launched to encourage social capital to invest in healthcare and participate in medical reforms. As a consequence, investors are now enthusiastic about investing in hospitals, supply chains and other core healthcare related services such as rehabilitation and diagnosis rather than health check centers, cosmetic institutions and dentist surgeries.

In 2015, the government announced to cancel the approval on qualification of medical insurance designated hospital and drugstores and launched a two-child policy, which will attract more investors into the healthcare industry.

At the same time, the development of digital and new technology are revolutionary to traditional healthcare industry and creating more, dynamic space for investors to engage. In 2015, some big pharmaceutical and medical equipment companies, especially listed companies, launched a significant number of merger and acquisition deals in a bid to expand market size and complete their industrial layout. These companies invested in quality assets, offline drugstores and e-commerce, with a particular focus on deals in precision medicine, internet medicine and gene sequencing.

Concurrently, domestic companies have been looking for overseas acquisition opportunities in medical equipment, services and biotechnology.

<p>| Total China M&amp;A deal volume and value, from 2013 to 2015 |
|---------------------------------|----------------|----------------|----------------|
|                                   | <strong>2013</strong> | <strong>2014</strong> | <strong>2015</strong> |</p>
<table>
<thead>
<tr>
<th>Volume  US$bil</th>
<th>Volume</th>
<th>Value</th>
<th>Volume</th>
<th>Value</th>
<th>Volume</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strategic buyer</strong></td>
<td>2,979</td>
<td>160.6</td>
<td>4,534</td>
<td>261.4</td>
<td>5,137</td>
<td>459.6</td>
</tr>
<tr>
<td></td>
<td>- healthcare</td>
<td>167</td>
<td>6.4</td>
<td>296</td>
<td>13.5</td>
<td>354</td>
</tr>
<tr>
<td></td>
<td>- % of total</td>
<td>6%</td>
<td>4%</td>
<td>7%</td>
<td>5%</td>
<td>7%</td>
</tr>
<tr>
<td><strong>PE/VC</strong></td>
<td>1,130</td>
<td>36.3</td>
<td>1,927</td>
<td>72.9</td>
<td>3,797</td>
<td>196.5</td>
</tr>
<tr>
<td><strong>Outbound</strong></td>
<td>339</td>
<td>59.0</td>
<td>437</td>
<td>63.5</td>
<td>486</td>
<td>77.6</td>
</tr>
<tr>
<td><strong>Total China M&amp;A</strong></td>
<td>4,448</td>
<td>255.9</td>
<td>6,898</td>
<td>397.8</td>
<td>9,420</td>
<td>733.7</td>
</tr>
</tbody>
</table>

Source: ThomsonReuters, ChinaVenture and PwC analysis
The prospect for extensive investment in the medical device industry in China is still bright due to new healthcare reform policies, increased government investment and other external drives as well as ageing of population, consumption level upgrade and other internal drives.

1. **Larger and larger capital used for investments and M&As.**
   Now the inflow of an amount of ten million or more than one hundred million dollars seems to be a common phenomenon, indicating that there is a great boom in the medical device industry. Besides, more and more institutional investors, in China or other countries, bet on the medical device industry, also suggesting that there is a considerable market potential in that industry.

2. **More Frequent investments and M&As.**
   Financing and M&As are inevitable for the development and growth of a company. As a sunrise industry, the medical device industry will witness more and more frequent enterprise investment, financing and M&As with the emergence of a large number of novel technologies and the continued growth in demand. The industry is still under development, so further integration is inevitable. There will be real giants in the industry or any segment in the future.

3. **Improvement of product lines via M&As.**
   One after another medical device giants acquired smaller medical device companies to improve their own product lines and integrate resources for the purpose of further development. As a result, the medical device industry experienced the global wave of mergers and acquisitions and a new peak of technology transfer. The frequent occurrence of technology transfers and M&As has to some degrees promote the rapid development of the whole industry; and M&As are also helpful to the development of enterprises, and facilitate technology renewal in the whole industry.

4. **Investment by giants of other industries.**
   The investment in the medical device industry by Homyear and Winsan, the real estate giants, also demonstrated the vitality and tremendous market potential of the medical device industry. The inflow of a large amount of capital from other industries provides financial support for the development of the medical device industry and enables the medical device industry to grow rapidly. Of course the return of investment is huge!

5. **mHealth cutting a figure.**
   SBCVC invested $100 million in Easyhin, indicating the bright prospects of mobile health (mHealth). For a time mHealth drew sharp criticism and was in an undeveloped state. As more attention is paid to by the country and more policy support is obtained, more funds will be invested in mHealth in the future with the continuous improvement of technologies and constant upgrading and humanization of products. We believe that in the near future mHealth will enter its real golden age.
There were 81 (exclude outbound) medical device M&A deals in 2015 in China, up 17% from 2014’s 69, driven by expectation on high growth of China healthcare industry with medical reforms, ageing society and hospital upgrade. Among them, 57 deals (70%) were from domestic strategic buyers, followed by VC deals (12), PE deals (7) and foreign strategic buyers (5).

In term of value, with more than 16 deals over US$50 mil and average deal value of US$56mil (up 83% compared with 2014), total deal values reached US$3.9 billion, advanced by 156%.
Strategic buyers

In *The National Health Service System Program Outline (2015-2020)* issued by the General Office of the State Council on March 30, 2015 was presented the “Healthy Chinese Cloud Service Program”, which was a specific practice of “Internet Plus” in the field of health service system. Wearable devices, medical information, remote medical service, mobile health and other segments related to the program will enjoy a five year golden development period.

Also, in 2014, the formal version of Regulations for the Supervision and Administration of Medical Devices was issued by the State Council, and four department regulations were published, all of which became the most important documents influencing the development of the industry. Now more rigorous national regulatory technical specifications are used, and large companies get more chances to have their efforts concentrated in strengthening research, development and innovation to improve their competitive advantages, whereas inferior small companies under the environment of disorderly competition have been gradually subject to M&As by mainstream enterprises. Consequently, the industry competition is gradually concentrated in large companies.

Under the combined action of internal industry characteristics and external environment, the medical device industry in China has become more concentrated and diversified. Now the strategic layout of domestic enterprises mainly involves the control of segments and expansion via M&As, and those taking the lead in actively expanding through integration have more opportunities to become long-term winners. At present many innovations of large enterprises are achieved based on those of small companies, that is to say, the large ones own innovations of small ones by M&As. The process of merger and reorganization is actually the course during which innovations incubate.
Domestic strategic M&A grew strongly (in volume) in 2014 and (in value) in 2015, driven by economic transformation, sector consolidation, restructuring and inorganic growth strategies as the domestic M&A market matures; on the other hand, foreign inbound M&A appears to remain inactive.

Source: ThomsonReuters, ChinaVenture and PwC analysis
Except the Stryker/Trauson deal in 2013 and Danaher/Xitogen deal in 2014, there were not many foreign inbound deals in China. MNC players were not active in buying Chinese medical device assets as these assets did not seem to be competitive in terms of high-end technology.

International capital and medical device enterprises pay more attention to China’s growing market demand and development space. International enterprises mainly aim to purchase a market segment of the related industry in China. For example, the acquisition of Kanghui by Medtronic and that of Jinkewei by Philips, basically targeted an end market in the medical device industry of China.

There are many medical device companies in China, but their scale is relatively small; the medical device industry is developing fast, but most products are low- and medium-end imitations. There is a big gap between China and foreign countries in terms of high-end medical devices. So foreign investment can’t be attracted effectively in this respect, but this also indicates that there is room for the development of high-end products.

<table>
<thead>
<tr>
<th>Year</th>
<th>Value of Transaction ($mil)</th>
<th>Target</th>
<th>Sector</th>
<th>Main products</th>
<th>Acquiror</th>
<th>Acquiror nation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>764</td>
<td>Trauson Holdings Co Ltd</td>
<td>Orthopedics</td>
<td>Traumatic and spine implants</td>
<td>Stryker Corp</td>
<td>United States</td>
</tr>
<tr>
<td></td>
<td>39</td>
<td>Thinkertron Precision Equipment</td>
<td>Other</td>
<td>Peristaltic pump in lab, and medical industry</td>
<td>Halma PLC</td>
<td>United Kingdom</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>Adval Tech Medical Suzhou</td>
<td>Other</td>
<td>Injection molding for medical machine</td>
<td>Phillips Medisize Corp</td>
<td>United States</td>
</tr>
<tr>
<td>2014</td>
<td>-</td>
<td>Xitogen Technologies Inc</td>
<td>IVD</td>
<td>Flow cytometry and analytical equipment</td>
<td>Beckman Coulter Life Sciences (Danaher)</td>
<td>United States</td>
</tr>
<tr>
<td>2015</td>
<td>129</td>
<td>PW Medtech Group Ltd</td>
<td>Orthopedics</td>
<td>Medical consumables and orthopaedics implants</td>
<td>Right Faith Holdings Ltd</td>
<td>British Virgin</td>
</tr>
<tr>
<td></td>
<td>88</td>
<td>Tong Da Medical Device Ltd</td>
<td>Consumables</td>
<td>Disposable sterilized consumables</td>
<td>SHC Capital Ltd</td>
<td>Singapore</td>
</tr>
<tr>
<td></td>
<td>19</td>
<td>Shenzhen Emperor Electr Tech</td>
<td>Imaging</td>
<td>X-ray ultrasound equipment and abortion apparatus</td>
<td>Echosens SA</td>
<td>France</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>Shanghai Espec Env Equip Corp</td>
<td>Other</td>
<td>Thermostat and drying box</td>
<td>Espec Corp</td>
<td>Japan</td>
</tr>
<tr>
<td></td>
<td>0.2</td>
<td>Shanghai Ailex Tech Co Ltd</td>
<td>IVD</td>
<td>In-vitro diagnostic apparatus</td>
<td>Itochu Corp</td>
<td>Japan</td>
</tr>
</tbody>
</table>

Source: ThomsonReuters, ChinaVenture and PwC analysis

Notes:

2014
Beckman Coulter Life Sciences, a unit of Danaher Corp., planned to acquire the entire share capital of Xitogen Technologies Inc., a Suzhou-based manufacturer of flow cytometer. Xitogen is a manufacturer of flow cytometers with R&D bases in Suzhou and Dalian. This acquisition will provide Beckman Coulter Life Sciences with a much stronger base of operations in the growing Chinese market as well as more R&D instruments to enrich the world-class flow cytometer product line of Beckman Coulter.

2015 (top2 were actually PE trading)
Right Faith Holdings Ltd of British Virgin Islands (United Kingdom) agreed to acquire an 19.536% stake or 327.148 mil ordinary shares in PW Medtech Group Ltd, a Beijing-based manufacturer of surgical appliance and supplies, from Warburg Pincus Private Equity X LP, for CNY 2.448 (USD 0.394) per share or a total value of CNY 800.859 mil (USD 129.061 mil), in a privately negotiated transaction.

SHC Capital Ltd of Singapore, a unit of See Hoy Chan Sdn Bhd, signed a Memorandum of Understanding (MoU) to acquire the entire share capital of Tong Da Medical Device Ltd, manufacturer of irradiation apparatuses, from CIUKS Ltd, MENGGS Ltd, LILC Ltd, and Flourishing Profits Venture Ltd, for CNY 544.733 mil (USD87.655 mil) in cash.
IVD (In-Vitro Diagnostics, especially reagent) were particularly hot sectors in 2014 and 2015 due mainly to higher growth expectations for the healthcare sector, hospital reforms, people’s demand for better care, and significant pace of development and capital raising for hospital construction in China.

China market is smaller and grows faster as compared to foreign mature ones. Because of the controlled reimbursement of medical fees, the 15% markup on drug costs of domestic medical institutions has been gradually cancelled, and diagnosis and other medical items follow the rule of “one aspect wanes, the other waxes”. We believe that the IVD industry will hopefully benefit from the general trend of the healthcare reform and maintain a fast growth rate for a long time.

Source: Thomson Reuters, ChinaVenture and PwC analysis
Notes:
2013 orthopedic’s value is big, due to Stryker/trauson deal amounting to 764million
2014 imaging sector’s value was attributed to Neusoft (442mil) and China resource Wandong (194mil), see next part top deals.
2015 IVD’s value attributed to Chinese Peptide Co (1033mil), and Shenzhen Yiti (495mil)
From 2013 to 2015, we have seen a rapid growth in both number and scale of M&A in the medical devices sector. In 2013, there were only two US$50 million deals, and both were around orthopedics sector.

**US$50 mil deals in 2013**

<table>
<thead>
<tr>
<th>Rank</th>
<th>Value (US$m)</th>
<th>Target</th>
<th>Acquirer</th>
<th>Sector</th>
<th>Main products</th>
<th>Deal category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>764</td>
<td>Trason Holdings Co Ltd</td>
<td>Stryker Corp</td>
<td>Orthopedics</td>
<td>Traumatic and spine products</td>
<td>Inbound</td>
</tr>
<tr>
<td>2</td>
<td>94</td>
<td>Jiangsu IDEAL Med Sciences &amp; Tech</td>
<td>Shanghai Kinetic Med Co Ltd</td>
<td>Orthopedics</td>
<td>Implants</td>
<td>Domestic</td>
</tr>
</tbody>
</table>

In 2014, one of the biggest players China Resources quit from the medical device industry, while another player Yuyue Med was creative in leveraging “PE+listing Co” model, and took over China resources’ medical device business.

It also showed a trend that imaging, IVD (reagent) and household medical electronics started to enter US$50-million club. With the development of computer and network technology, the development of medical management will be focused on informatization and networking in the medical field in the future.

Accordingly, the demand for imaging, digital and other sophisticated medical equipment is increasing, and the development and combination of IT and medical technologies will result in a lot of new medical methods.

**US$50 mil deals in 2014**

<table>
<thead>
<tr>
<th>Rank</th>
<th>Value (US$m)</th>
<th>Target</th>
<th>Bidder</th>
<th>Sector</th>
<th>Main products</th>
<th>Deal category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>442</td>
<td>Shenyang Neusoft Med System</td>
<td>Dallas Neusoft Holdings Co Ltd, Goldman Sachs and etc</td>
<td>Imaging</td>
<td>CT, NMR-CT</td>
<td>Domestic</td>
</tr>
<tr>
<td>2</td>
<td>194</td>
<td>China Resources Wandong</td>
<td>Jiangsu Yuyue Tech Dmp</td>
<td>Imaging</td>
<td>X-Ray, NMR</td>
<td>Domestic</td>
</tr>
<tr>
<td>3</td>
<td>139</td>
<td>Jiangsu Yuyue Med Equip</td>
<td>Shenzhen Qianhai Hongshan</td>
<td>Other</td>
<td>Respirator, sphygmomanometer, CSSD</td>
<td>Domestic</td>
</tr>
<tr>
<td>4</td>
<td>130</td>
<td>Laoken Med Tech Co Ltd</td>
<td>Chengdu Tianxing Meter Co Ltd</td>
<td>Other</td>
<td>Infection control equipment, CSSD</td>
<td>Domestic</td>
</tr>
<tr>
<td>5</td>
<td>82</td>
<td>DiaSys Diagnostic System</td>
<td>Beijing Leadman Biochemistry</td>
<td>IVD</td>
<td>IVD reagents</td>
<td>Domestic</td>
</tr>
<tr>
<td>6</td>
<td>68</td>
<td>Changsha Sanji Biotech Co Ltd, Boai NKY Pharmaceuticals Ltd</td>
<td>IVD</td>
<td>IVD reagents</td>
<td>Domestic</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>66</td>
<td>Chengdu Yingde Biomedical</td>
<td>Shinwa Med Instr Co Ltd</td>
<td>Other</td>
<td>Equipment of blood product</td>
<td>Domestic</td>
</tr>
<tr>
<td>8</td>
<td>58</td>
<td>Shenzhen Dong Di Xin</td>
<td>Kingworld Medicines Group Ltd</td>
<td>Other</td>
<td>household medical electronics (eg. thermometer)</td>
<td>Domestic</td>
</tr>
</tbody>
</table>

Source: ThomsonReuters, ChinaVenture and PwC analysis
The change became even more significant in 2015. Medical informatization is entering the era of Web 2.0, and digital hospital products are now leading the industry reform.

During the era of Web 1.0, isolated data and fragmented services were severe problems due to the separation of hospital business systems. In the Internet+ Age, the need for data exchange is increasing. In May 2015, the evaluation of maturity of standard hospital information interconnection was pushed forward by the National Health and Family Planning Commission, and a new round of construction climax of interconnection in the medical information industry has commenced.

In 2015, we have also seen several new features. For example, deals were increasingly expensive. The average size rose to US$63 million, and the top deal amounted at more than US$1 billion. IVD was leading the M&A, with blood testing, DNA testing, and cell analysing domimative. In precision medicine, internet medicine, gene sequencing and other medical segments, deals are particularly active.

Also, digital and IT technologies created new ways to play, driving digital hospitals in deals such as Jiangsu Shixuan Tech Co Ltd and Medex Tech-Trade Corp. More demand occurred for household products, and other industry buyers such as real estate players showed interest in medical device as acquirers.

### US$50 mil deals in 2015

<table>
<thead>
<tr>
<th>Rank</th>
<th>Value (US$m)</th>
<th>Target</th>
<th>Bidder</th>
<th>Sector</th>
<th>Main products</th>
<th>Deal category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1,033</td>
<td>Chinese Peptide Co</td>
<td>Guizhou Xinbang Pharm Co Ltd</td>
<td>IVD</td>
<td>IVD reagents</td>
<td>Domestic</td>
</tr>
<tr>
<td>2</td>
<td>495</td>
<td>Shenzhen Yili Med Tech Co Ltd</td>
<td>Zhong Zhu Holding Co Ltd</td>
<td>IVD</td>
<td>cancer diagnostic equipment</td>
<td>Domestic</td>
</tr>
<tr>
<td>3</td>
<td>273</td>
<td>Jiangsu Juxin Med Tech Co Ltd</td>
<td>Shenzhen Das Intellitech Co</td>
<td>Other</td>
<td>IT/system design of OR/ICU</td>
<td>Domestic</td>
</tr>
<tr>
<td>4</td>
<td>268</td>
<td>Masep Med Science &amp; Tech Dv</td>
<td>Starway Bio-technology Co Ltd</td>
<td>Surgical</td>
<td>gamma knife</td>
<td>Domestic</td>
</tr>
<tr>
<td>5</td>
<td>222</td>
<td>Beijing Choice Electric Tech Co</td>
<td>Tianjin Chase Sun Pharma Co Ltd</td>
<td>Other</td>
<td>household medical electronics (eg, Pulse</td>
<td>Domestic</td>
</tr>
<tr>
<td>6</td>
<td>130</td>
<td>Shenzhen Beacon Display Tec</td>
<td>Zhejiang Jingxin Pharm Co Ltd</td>
<td>Imaging</td>
<td>imaging</td>
<td>Domestic</td>
</tr>
<tr>
<td>7</td>
<td>129</td>
<td>PW Medtech Group Ltd</td>
<td>Right Faith Holdings Ltd</td>
<td>Orthopedics</td>
<td>orthopedics</td>
<td>Domestic</td>
</tr>
<tr>
<td>8</td>
<td>124</td>
<td>Anhui Jiugong Jianye Co Ltd</td>
<td>Anhui Saunaking Co Ltd</td>
<td>Other</td>
<td>massage armchair</td>
<td>Domestic</td>
</tr>
<tr>
<td>9</td>
<td>123</td>
<td>Jiangsu Shixuan Tech Co Ltd</td>
<td>Wuhan Zhongyuan Huadian</td>
<td>Other</td>
<td>Digital hospital solution, eg, IT design for</td>
<td>Domestic</td>
</tr>
<tr>
<td>10</td>
<td>93</td>
<td>Shanghai Runda Med Tech</td>
<td>Shanghai Xinlinru Invest</td>
<td>IVD</td>
<td>IVD reagents</td>
<td>Domestic</td>
</tr>
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<td>11</td>
<td>89</td>
<td>Ningbo Rui Bio-Tech Co Ltd</td>
<td>Drui Industrial Co Ltd</td>
<td>IVD</td>
<td>IVD reagents</td>
<td>Domestic</td>
</tr>
<tr>
<td>12</td>
<td>88</td>
<td>Tong Da Medical Device Ltd</td>
<td>SHC Capital Ltd</td>
<td>Consumables</td>
<td>disposable consumables</td>
<td>Inbound</td>
</tr>
<tr>
<td>13</td>
<td>73</td>
<td>Wuxi Yushou Medical Equip Co</td>
<td>Suzhou T&amp;A Ultra Clean Tech</td>
<td>Consumables</td>
<td>injectors</td>
<td>Domestic</td>
</tr>
<tr>
<td>14</td>
<td>73</td>
<td>Wuhan Dragonbio Surgical</td>
<td>Mindray Med Intl Ltd</td>
<td>Orthopedics</td>
<td>traumatic and spine products</td>
<td>Domestic</td>
</tr>
<tr>
<td>15</td>
<td>72</td>
<td>Medex Tech-Trade Corp</td>
<td>Winsan (Shanghai) Ind Corp Ltd</td>
<td>Other</td>
<td>digital hospital IT</td>
<td>Domestic</td>
</tr>
<tr>
<td>16</td>
<td>70</td>
<td>AGCU SciencTech Inc</td>
<td>Anhui Anke Biotechnology Ltd</td>
<td>IVD</td>
<td>DNA testing system</td>
<td>Domestic</td>
</tr>
</tbody>
</table>

Source: ThomsonReuters, ChinaVenture and PwC analysis
PE investors became more active in 2015, investing in orthopedics, IVD and consumable as well as in m-health/smart healthcare technology.

**Private equity deal volume and value, 2013-2015**

US$ million

![Graph showing private equity deal volume and value from 2013 to 2015.]

The VC industry (and tech investing generally) has shown growing interests in China healthcare, with investors chasing opportunities in m-health, wearable medical device, smart/small diagnostic device and IT solutions etc.

**Venture capital deal volume and value, 2013-2015**

![Graph showing venture capital deal volume and value from 2013 to 2015.]

Source: ThomsonReuters, ChinaVenture and PwC analysis
Key messages and outlook
Overall

- 2015 was a record year for China medical device M&A with deal volumes up 17% and values up 156% at US$3.9 billion
- Domestic, PE/VC activity all grew, with more than 26 deals over US$50 million (a record) and average deal value advanced by 83%.

Domestic and Foreign-Inbound Strategic

- Domestic strategic M&A grew strongly (in volume) in 2014 and (in value) in 2015, driven by economic transformation, sector consolidation, restructuring and inorganic growth strategies as the domestic M&A market matures;
- Foreign inbound M&A appears to remain inactive as Chinese medical device assets did not seem to be competitive in terms of high-end technology.
- IVD (especially reagent) were particularly hot sectors in 2014 and 2015 due mainly to higher growth expectations for the healthcare sector, hospital reforms, people’s demand for better care, and significant pace of development and capital raising for hospital construction in China.

Private Equity

- PE and VC fundraising remained at healthy levels; the capital available for financial investing is considerably greater than implied by these numbers because of the direct investment activities of insurers (and other financial institutions); government and industry funds; SOE funds; private-company funds; and HNWI vehicles.
- PE investors became more active in 2015, investing in orthopedics, IVD and consumable as well as in m-health SMART healthcare technology.
- The VC industry (and tech investing generally) has shown growing interests in China healthcare, with investors chasing opportunities in m-health, wearable medical device, smart/small diagnostic device and IT solutions etc.
**Outlook for 2016**

We think that the rate of China M&A activity will continue to grow at double-digit pace, led by domestic strategic and outbound activity, as well as robust financial-buyer activity (even if not necessarily mainstream PE).

There is strong confidence that the market and companies will continue growing rapidly in China. Most companies will focus on revenue growth over profitability, especially medical device companies.

Grade III hospitals are still key to growth. Private hospitals will become increasingly important, while doubts remain over public hospital reform. Patient engagement activities will increase as most believe patients are gaining power in decision making.

Many people also believe that both Basic Medical Insurance (BMI) and commercial health insurance will grow rapidly, though BMI will still have the largest influence.

Further consolidation is expected, with Chinese companies gaining market share as well as growth in JV/Partnerships. Concerns on stricter and enforced compliance requirements and enhanced price controls from government are growing, especially to MNCs.

Digital will bring profound changes to the industry, and ecommerce will play a far bigger role MNCs more concerned about regulatory issues (market access, price cuts, compliance), and Chinese companies worry more about talent. MNCs prioritize development of new commercial models (innovative sales and marketing), and Chinese companies focus on R&D improvement.

We expect healthcare deals will remain hot as it’s driven by government support, confident investors, active PE and VC involvement, vibrant start-up environment and consolidation growth in the sector.
Recently, the medical devices exported by China were mostly conventional equipment, surgical instruments, massage apparatuses and other small- and medium-sized products. Small, portable medical devices are easy to use and operate fast; some tests for patients can be carried out at any time, thus saving time and space.

Presently intelligent medical devices mainly take advantage of advanced information and communication technologies, e.g. sensors, triggers and/or biomedical monitors, to achieve remote collection of patient data, automatically diagnose and remind relevant personnel. After intelligent examination systems are connected with the big data platform, related data can be sent to hospitals and family doctors, and patients’ health status can be monitored at any time.

A family-oriented product is one that a patient can use independently at home without going to hospital or any other organization. Usually a household healthcare product can be used for prevention, diagnosis, health care, treatment, adjunctive therapy and rehabilitation, especially for the elderly.

These simple household medical devices are easy to operate, safe, controllable and convenient, especially useful for elderly patients with chronic diseases. Medical device software will be widely used accordingly.

In the future, more convenient, intelligent and home-oriented products will be made
**Notes**

- “Medical device” in this report include In Vitro Diagnostic (IVD) equipment, Orthopaedic implants, surgical equipment and devices, consumables and suppliers, household medical devices, rehabilitation facilities, imaging equipment (including optical) and integration & design as well as IT construction. It does NOT include clinic service, sales and distribution, biotech pharma and healthcare food.

- The data presented is based on information compiled by ThomsonReuters, ChinaVenture and PwC analysis unless stated otherwise.

- Thomson Reuters and ChinaVenture record announced deals. Some announced deals will not go on to complete.

- The deal volume figures presented in this report refer to the number of deals announced, whether or not a value is disclosed for the deal.

- The deal value figures presented in this report refers only to those deals where a value has been disclosed (referred to in this presentation as “disclosed value”).

- “Domestic” means China including Hong Kong and Macau.

- “Inbound” relates to overseas company acquisitions of Domestic companies.

- “Outbound” relates to mainland China company acquisitions abroad.

- “Private Equity deals” or “PE deals” refer to financial buyer deals with deal value over US$10mn and/or with undisclosed deal value, mainly invested by private equity GPs but also including direct investments by financial institutions and conglomerates which are of the nature of private equity type investing.

- “VC deals” refer to financial buyer deals with deal value less than US$10mn and/or with undisclosed deal, but invested by venture capital funds.

- “Strategic buyer” refers to corporate buyers (as opposed to financial buyers) that acquire companies with the objective of integrating the acquisition in their existing business.

- “Financial buyer” refers to investors that acquire companies with the objective of realizing a return on their investment by selling the business at a profit at a future date and mainly, but not entirely, comprise PE and VC funds.
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We are highly recognised in healthcare, pharmaceuticals and life sciences industries globally

2016

MarketScape leader, IDC
Worldwide Life Science R&D Strategic Consulting Services

Vanguard leader, ALM (formerly Kennedy)
Digital Healthcare Consulting: Payers, Providers, and New Market Entrants

2015

MarketScape leader, IDC
Life Science Manufacturing and Supply Chain Strategic Consulting
Life Science Sales and Marketing Strategic Consulting

Vanguard leader, ALM
Consulting to Public and Private Healthcare: Cybersecurity

Vanguard leader, Kennedy
Consulting to Healthcare Payers & Providers: Digital Information for Alternative Care Models (ACM)
Consulting to Healthcare Payers and Providers: Alternative Care Models (ACM)
Life Sciences Supply Chain, Operations and Talent
Life Sciences Supply Chain Technology Enabled and Digital Initiatives
Consulting to Private Healthcare Payers & Providers: Customer Engagement
Healthcare JVs, Partnerships and Collaborations

2014

Vanguard leader, Kennedy
Life Sciences: Key Technology Initiatives

#1, KLAS

Financial ERP Implementation Services Category Leader