

## INDUSTRY OVERVIEW

*Certain information and statistics set out in this section and elsewhere in the document have been derived from various government publications, publicly available sources and the Frost & Sullivan Report, a market research report prepared by Frost & Sullivan and commissioned by our Group. We believe that the sources of such information and statistics are appropriate and have taken reasonable care in extracting and reproducing such information. We have no reason to believe that such information and statistics are false or misleading or that any fact has been omitted that would render such information and statistics false and misleading. None of our Company, the Sole Sponsor, [REDACTED], any of their respective directors, officers, employees, agents or advisers makes any representation as to the accuracy, fairness and completeness of such information and statistics.*

### SOURCE AND RELIABILITY OF INFORMATION

Our Group commissioned Frost & Sullivan, an independent market research company, to conduct an analysis of, and to produce a report on, the medical device market in Hong Kong. Founded in 1961, Frost & Sullivan is an independent global consulting firm based in the United States, and offers industry research, market strategies and provides growth consulting and corporate training on a variety of industries. The information from Frost & Sullivan disclosed in this document is extracted from the Frost & Sullivan Report, a report commissioned by us for a fee of HK\$380,000, and is disclosed with the consent of Frost & Sullivan.

In compiling and preparing the research report, Frost & Sullivan conducted primary research including interviews with industry experts and participants and secondary research which involved reviewing the statistics published by the government official statistics, industry publications, annual reports and data based on its own database. Frost & Sullivan also adopted the following primary assumptions while making projections on the macroeconomic environment, the medical device market and various segment markets in Hong Kong:

- Hong Kong's economy is expected to grow at a steady rate supported by favourable HK Government's policies as well as global economic recovery, among other factors;
- The demand and supply of medical devices in Hong Kong are likely to remain stable during the forecast period; and
- The social, economic and political environments of Hong Kong is likely to remain stable during the forecast period, which will ensure a sustainable and steady development of the medical device market in Hong Kong.

Save as disclosed otherwise, all of the data and forecasts contained in this section are derived from the Frost & Sullivan Report. Our Directors confirm that after taking reasonable care, the sources of information used in this section, which are extracted from the Frost & Sullivan Report, are reliable and not misleading as Frost & Sullivan is an independent professional market research agency with extensive experience, and there is no material adverse change in the overall market information since the date of the Frost & Sullivan Report that would materially qualify, contradict or have an impact on such information.

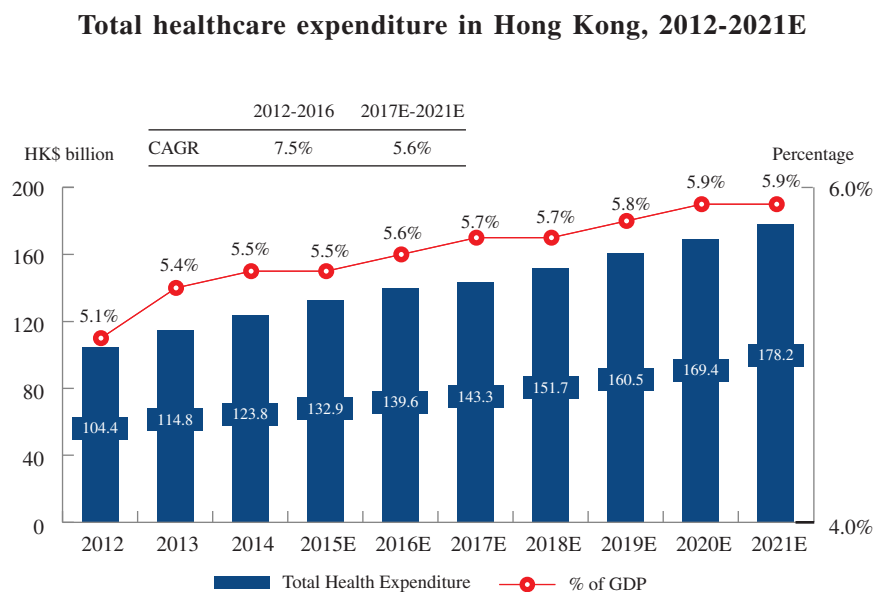
## INDUSTRY OVERVIEW

### AGING POPULATION IN HONG KONG

With low birth rate and increasing life expectancy, Hong Kong has entered an aging society. The number of individuals aged above 65 years old in Hong Kong grew rapidly at a CAGR of approximately 5.0% from 2012 to 2016, and is expected to grow at a CAGR of approximately 4.6% from 2017 to 2021. According to the information from the Census and Statistics Department of Hong Kong, the number of individuals aged above 65 years old was approximately 1.2 million in 2016, which accounted for approximately 16.3% of the total population in Hong Kong. The number of individuals aged above 65 years old is growing at a fairly fast pace and is expected to continue its growth momentum into the future and reach approximately 1.5 million by 2021, which represents approximately 19.6% of the total population in Hong Kong.

### HEALTHCARE EXPENDITURE IN HONG KONG

Driven by expanding aging population and rising healthcare awareness of the public, the total healthcare expenditure had been rising from approximately HK\$104.4 billion in 2012 to approximately HK\$139.6 billion in 2016, representing a CAGR of approximately 7.5% from 2012 to 2016. The total healthcare expenditure is projected to reach approximately HK\$178.2 billion in 2021, representing a CAGR of approximately 5.6% from 2017 to 2021. The following chart sets forth the total healthcare expenditure in Hong Kong from 2012 to 2016 and the forecast from 2017 to 2021:



Source: Food and Health Bureau of Hong Kong, Frost & Sullivan Report

## INDUSTRY OVERVIEW

### HONG KONG MEDICAL DEVICE MARKET

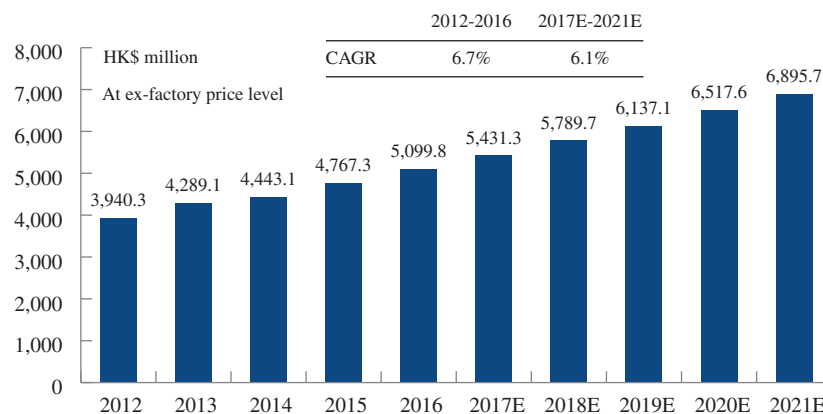
#### Overview of regulations on medical device market in Hong Kong

The MDACS has been implemented since 26 November 2004 to raise public awareness to the safe use of medical devices and facilitate the transition to the long-term statutory control. The MDACS is a medical device listing system, on which manufacturers and distributors of medical devices could voluntarily list their medical devices, as well as an adverse incident reporting system, through which the manufacturers, distributors, users, and the general public could report adverse incidents to the Department of Health. Except the MDCO, there is no other authority in Hong Kong established or designated to regulate the import, distribution, sale or use of medical devices (except medical devices containing pharmaceutical products or emit ionising radiation). For further details on the regulatory regime applicable to the Hong Kong medical device market, please refer to the section headed "Regulatory overview" of this document.

#### Overview of Hong Kong medical device market

The market size of Hong Kong medical device in terms of revenue was approximately HK\$5,099.8 million in 2016, with a CAGR of approximately 6.7% from 2012 to 2016. In view of the aging population in Hong Kong and the projected increase in the HK Government's healthcare expenditure, it is expected that market demand for medical devices will keep increasing from 2017 to 2021. As a result, the market size of Hong Kong medical device in terms of revenue is expected to further increase to approximately HK\$6,895.7 million in 2021, with a CAGR of approximately 6.1% from 2017 to 2021.

**Market size of Hong Kong medical device, 2012-2021E**



Source: Frost & Sullivan Report

## INDUSTRY OVERVIEW

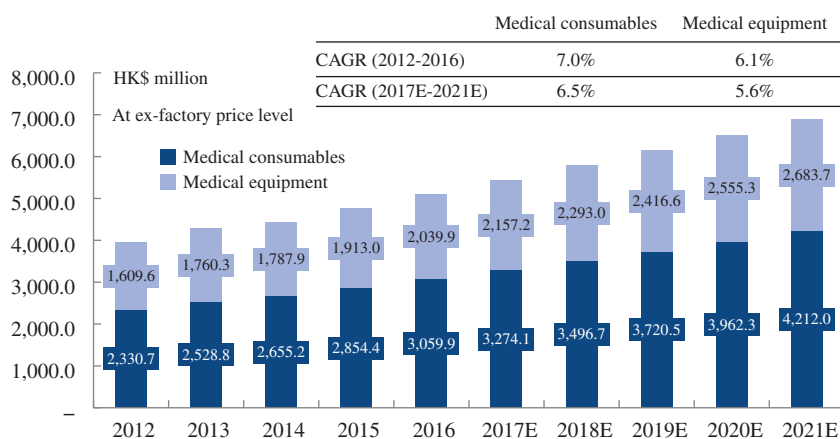
### Analysis by product category

Medical devices can be categorised into two sectors, namely medical consumables and medical equipment. Medical instruments have been classified into medical consumables and medical equipment sectors respectively according to their actual clinical applications.

Medical consumables generally do not need regular maintenance or calibrations, and can be divided to low-value consumables and high-value consumables. The former is low-cost, disposable, and massively used in medical institutions such as gloves, gauze, needles and syringes. The latter with higher price is for relatively longer period of use such as joint prosthesis, saccule and stent.

From 2012 to 2016, medical consumables demonstrated larger market size in terms of revenue and higher growth rate compared to that of medical equipment in Hong Kong. Such proportion of medical device market is expected to continue from 2017 to 2021. The following chart sets forth the breakdown of market size of Hong Kong medical device market by product category from 2012 to 2016 and the forecasts from 2017 to 2021:

### Breakdown of market size of Hong Kong medical device by product category, 2012-2021E



Source: Frost & Sullivan Report

### Medical consumable market

The market share of medical consumables accounted for approximately 60.0% of the total medical device market in terms of revenue in 2016 and is expected to grow to approximately HK\$4,212.0 million in 2021, representing a market share of approximately 61.1% of the total medical device market in Hong Kong.

From 2012 to 2016, Hong Kong medical consumable market grew at a higher rate than the total medical device market in Hong Kong, reaching approximately HK\$3,059.9 million with a CAGR of approximately 7.0%. As the volume of patient visits is increasing in Hong Kong, the market size of medical consumables in terms of revenue is expected to continuously increase to approximately HK\$4,212.0 million in 2021, representing a CAGR of approximately 6.5% from 2017 to 2021.

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## INDUSTRY OVERVIEW

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Medical consumables are mainly used in surgical procedures, of which the volume will keep increasing year by year due to the aging population and increasing healthcare expenditure in Hong Kong. According to the Strategic Plan of the Hospital Authority for 2017/18 to 2021/22, a total of over 90 new operating theatres will be set up through the hospital development projects from 2016 to 2026. Such development will considerably stimulate the demand for medical consumables in Hong Kong.

### *Medical equipment market*

The size of the Hong Kong medical equipment market grew at a CAGR of approximately 6.1% from approximately HK\$1,609.6 million in 2012 to approximately HK\$2,039.9 million in 2016 in terms of revenue. It is estimated that the size of Hong Kong medical equipment market will increase at a CAGR of approximately 5.6% between 2017 and 2021 to achieve approximately HK\$2,683.7 million in 2021, due to the increasing HK Government's healthcare expenditure and health awareness of the general public.

Hospital bed is one of the typical medical equipment supplied by our Group. The Hong Kong hospital bed market is dominated by four market players. The top four players accounted for an aggregate market share of more than 75.0% in terms of revenue in 2016, which indicates that the Hong Kong hospital bed market is a highly concentrated market. The largest player in Hong Kong hospital bed market accounted for a market share of approximately 27.5% in 2016. The second largest player, whose hospital beds were solely distributed by our Group, accounted for a market share of approximately 23.0% in 2016.

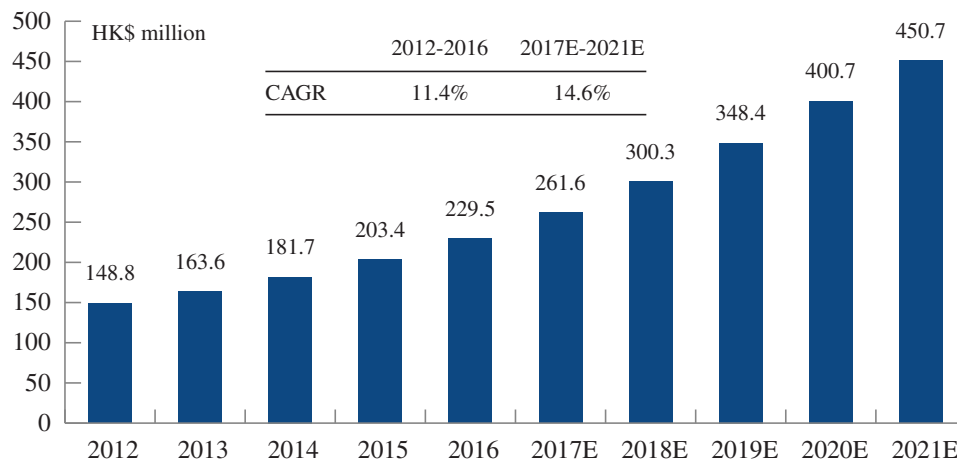
The total number of hospital beds in Hong Kong had kept increasing from 2012 to 2016. The number of hospital beds in Hong Kong grew at a CAGR of approximately 1.7% from 36,579 in 2012 to 39,090 in 2016. As the aging population demands more hospital beds and the Hospital Authority will allocate financial resources to build new hospitals, it is estimated that the total number of hospital beds will climb to 44,356 in 2021, growing at a CAGR of approximately 2.6% from 2017 to 2021. The market size of hospital beds in Hong Kong in terms of revenue increased at a CAGR of approximately 3.7% from approximately HK\$34.1 million in 2012 to approximately HK\$39.4 million in 2016. It is expected that the market size of Hong Kong hospital beds will continue to grow to approximately HK\$53.6 million in 2021, at a CAGR of approximately 7.1% from 2017 to 2021, due to the financial support from the HK Government. According to the Strategic Plan of Hospital Authority for 2017/18 to 2021/22, the HK Government intends to invest HK\$200 billion for hospital development from 2016 to 2026, which includes an addition of around 5,000 hospital beds.

## INDUSTRY OVERVIEW

### *Medical device maintenance services market*

Maintenance services can ensure safe, efficient, and long-lasting use of medical devices, especially for the medical devices after expiration of the warranty period. On the basis of device type, the medical device maintenance services market is divided into imaging equipment, endoscopic devices, surgical instruments, electric hospital beds, and other medical equipment. The Hong Kong medical device maintenance services market grew from approximately HK\$148.8 million in 2012 to approximately HK\$229.5 million in 2016 in terms of revenue, at a CAGR of approximately 11.4%. It is expected that this market will experience a higher CAGR in the next few years because the number of healthcare institutions in Hong Kong implementing medical devices maintenance services strategies is expected to rise, which will offer growth opportunities for service providers.

#### Market size of Hong Kong medical device maintenance services, 2012-2021E



Source: Frost & Sullivan Report

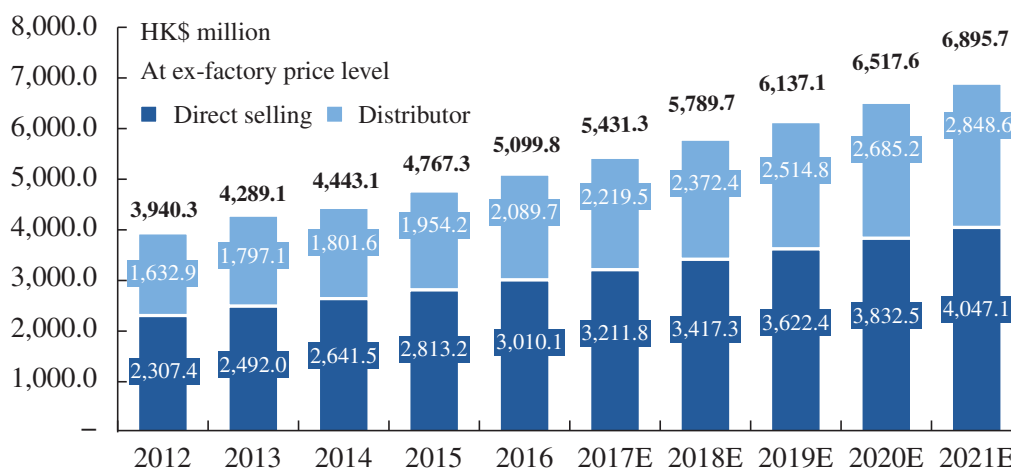
### **Analysis by sales model**

Medical devices are either directly sold by the manufacturers to end-users in Hong Kong or distributed to them by local distributors. In general, large multinational medical devices manufacturers would have branches in Hong Kong and sell their matured or best-selling products to their customers directly. However, such manufacturers would usually rely on local distributors to sell their new or niche products for quick market penetration. Adoption of distribution model would allow these large manufacturers to reduce entry cost and streamline the ordering processes for local customers. A dedicated medical device distributor could provide these medical device manufacturers with a number of services including provision of local maintenance and consultation services for their products. The following table sets out the market share of direct selling and distribution model in the Hong Kong medical device market from 2012 to 2016 and the forecasts from 2017 to 2021:

## INDUSTRY OVERVIEW

### Breakdown of market size of Hong Kong medical device by sales model, 2012-2021E

	Direct selling	Distribution
CAGR (2012-2016)	6.9%	6.4%
CAGR (2017E-2021E)	5.9%	6.4%



Source: Frost & Sullivan Report

Although direct selling accounted for a larger market share in the medical device market in Hong Kong, distribution business model is expected to offer a higher growth potential as more and more overseas medical device companies which do not have local presence or network will enter into Hong Kong market in the future. It will be more cost-effective for these overseas medical device companies to adopt the distribution business model at the early stage of their business operation in Hong Kong. It is expected that they will continue to leverage on distributors' existing network as long as there is no change in their business strategy.

### Growth drivers of Hong Kong medical device market

#### *Accelerated aging population*

The number of individuals aged above 65 years old in Hong Kong was approximately 1.2 million in 2016, which accounted for approximately 16.3% of the total population in Hong Kong. With reference to the Frost & Sullivan Report, aging population of Hong Kong grew rapidly at a CAGR of approximately 5.0% from 2012 to 2016, and is expected to grow at a CAGR of approximately 4.6% from 2017 to 2021. The prevalence of diseases is normally higher among the elderly group. As a result of such demographic shift, the aging trend will create huge demand for medical devices in Hong Kong.

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## INDUSTRY OVERVIEW

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### *Increased healthcare expenditure*

The HK Government's healthcare expenditure and private household out-of-pocket healthcare expenditure are two major components of Hong Kong's total healthcare expenditure. The HK Government's healthcare expenditure is expected to be approximately HK\$67.9 billion in 2016, increasing at a CAGR of approximately 7.3% from 2012. On the other hand, private household out-of-pocket healthcare expenditure also showed an upward trend from 2012 to 2016, expecting to achieve approximately HK\$49.1 billion at a CAGR of approximately 8.2%. It is estimated that the HK Government's healthcare expenditure and private household out-of-pocket healthcare expenditure will further grow to approximately HK\$86.6 billion and HK\$63.4 billion in 2021, respectively, representing CAGRs of approximately 5.6% and 5.8% from 2017 to 2021, respectively. The increasing healthcare expenditure in Hong Kong demonstrates that both the HK Government and the private household have high level of health awareness, and thus has a positive effect on driving up the demand for medical devices in Hong Kong.

### *Continuous technology innovation*

Technology innovation is critical in the growth of medical device market as it can address the unmet clinical needs and therefore create more market opportunities. For example, hospitals are gradually investing in new generation smart and intelligent hospital beds with advanced features such as remote monitoring capabilities, integrated sensors that track and monitor patient physiological parameters, and electronic control that simplify nursing care. In addition, over the past decade, improvements in biopsy needle design and sampling technique make percutaneous needle biopsy (PNB) the most common interventional radiologic procedure.

### *Increasing surgery volume*

Medical consumables are mainly used in surgical procedures, and the volume of surgical procedures accounts for more than 50.0% of total procedure volume in Hong Kong. Driven by the aging population and increasing healthcare expenditure, the surgical procedure volume increases year by year. In addition, the HK Government is planning to develop hybrid operating theatres in hospitals. Such trend would also drive the growth of medical device market in Hong Kong.



## INDUSTRY OVERVIEW

### COMPETITIVE LANDSCAPE OF HONG KONG MEDICAL DEVICE MARKET

Hong Kong medical device distributors can be segmented to three tiers according to market size in terms of revenue.

Our Group is a tier II distributor in Hong Kong medical device market, accounting for a market share of approximately 2.5% of the overall market of the tier I, tier II and tier III medical device distributors and approximately 5.4% of the market of the tier II medical device distributors in 2016. The following table sets forth the market share and revenue of the distributors in the Hong Kong medical device market in 2016:

#### Distributors in the Hong Kong medical device market, 2016

		Revenue (HK\$ million)	Market share (%)	Number of market players	Description
1	Tier II distributors	965.4	46.2	Approximately 20	Each of Tier II distributors has an annual revenue of more than HK\$50 million but less than HK\$100 million. Their major product category is medical consumables.
2	Tier I distributors	601.8	28.8	Approximately 5	Each of Tier I distributors has an annual revenue of more than HK\$100 million. Their major product category is medical consumables.
3	Tier III distributors	522.4	25.0	>100	Each of Tier III distributors has an annual revenue of less than HK\$50 million. Their major product category is medical consumables.
	Total	<b>2,089.6</b>	100.0		

Source: Frost & Sullivan Report

Frost & Sullivan has conducted interviews with some of the leading medical device distributors and medical device manufacturers in the Hong Kong market. Based on Frost & Sullivan's findings in the interviews, the aforementioned categorisation of distributors in the market is in line with the industry norm and is widely recognised in the Hong Kong medical device distribution industry.

## INDUSTRY OVERVIEW

The following table sets forth the market share and revenue of the top five tier II medical device distributors in the Hong Kong medical device market in 2016:

### Tier II distributors in the Hong Kong medical device market, 2016

		Revenue (HK\$ million)	Market share (%)
1	Competitor A	82.4	8.5
2	Competitor B	76.5	7.9
3	Competitor C	72.0	7.5
4	Competitor D	68.0	7.0
5	Competitor E	60.4	6.3
	Others	606.1	62.8
	Total	965.4	100.0

Source: Frost & Sullivan Report

Please also refer to the paragraph headed "Business – Our competitive strength" of this document for details of our competitive advantages.

### Entry barriers

#### *Brand recognition and relationship with customers and suppliers*

It is time-consuming to establish positive brand image in Hong Kong medical device market and be widely accepted by the market. It would be more difficult to establish good relationship with customers and suppliers, which is crucial for a medical device market player. In order to gain trusts from customers and suppliers, a market player needs to have track record to prove their servicing capability and reliability which could pose an entry barrier to new market entrants.

#### *Recruitment of technical and sales staff*

Sales teams of medical device manufacturers and distributors are essential to support the medical device marketing, sales activities and after-sales services. However, experienced technical and sales staff are reluctant to leave large well-recognised market players and join new entrants. As such, new market entrants will continue to face challenges of recruiting sufficient number of qualified technical and sales staff.

## INDUSTRY OVERVIEW

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### *High capital requirement*

Meeting increasing demand for medical devices and more stringent requirement for timely delivery of products, the market players need to own or lease warehouses for inventory. In addition, it is generally difficult for new entrants in the medical device market to secure any credit term from overseas suppliers and they may be required by overseas suppliers to make advance payment. As such, new market entrants are required to have sufficient financial resources to meet any significant cash outflow for payment to suppliers. Therefore, requirement for capital investment makes the medical device market difficult to enter.

### **Future trends**

#### *Enforcement of regulation*

In Hong Kong, the MDACS is built for medical devices under which manufacturers and importers of medical devices (except Class I devices) could voluntarily list their medical devices with the Department of Health. Although the decision to register devices in Hong Kong is voluntary, both private and public hospitals generally prefer the MDCO listed devices, and listing on the MDCO is intended to be mandatory registration in the future.

#### *Increased application of distribution model*

The Hong Kong medical device market is undergoing a consolidation stage. As medical device companies set their sights on growth through speed to the market with a cost-effective way, the vast majority believe future growth will increasingly come through partnerships, rather than in-house efforts. In the near future, more and more overseas medical device companies which do not have local presence or network will enter into Hong Kong medical device market. Compared with direct selling, local distributors in Hong Kong have an in-depth understanding in Hong Kong medical device market, and have good relationship with local customers. Moreover, local distributors have the capacity to provide sales and marketing as well as after-sale services. As a result, partnering with local distributors will be more common in the Hong Kong medical device market.

### **Threats and challenges**

#### *Challenging supply chain management*

The variety of medical devices in Hong Kong is almost equivalent to other large-scale markets such as the United States. For Hong Kong local distributors, they need to manage a variety of medical devices but market demand for certain items is relatively lesser. Furthermore, medical device products and spare parts are imported from worldwide, which increases the complexity of logistic management and thereby leads to a more complex and less efficient supply chain management and distribution.

## INDUSTRY OVERVIEW

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### *Insufficient regulation*

The MDCO is responsible for overseeing medical devices in Hong Kong, but no specific regulation is currently in place regarding the importation, distribution or sale of devices. Moreover, the MDACS, which is implemented for manufacturers and importers of medical devices (except Class I devices) to list their medical devices, currently does not impose any mandatory registration requirement. As a result, some unqualified medical devices can be marketed directly without any official registration and may cause the end-users in danger. Such potential threat would negatively impact the development of medical device market.

### *Lack of technical talents*

Technical support, which largely depends on the seasoned technical talent who is mainly responsible for the maintenance and repair work of medical devices, is the critical component in the after-sales services. Due to the fierce competition in Hong Kong medical device market, the supply of seasoned technical talent falls behind the development of Hong Kong medical device market, which creates a gap in market and has a negative effect on the availability of after-sales service and can further hinder the development of the Hong Kong medical device market.