CMB International Securities | Equity Research | Company Initiation

Kindly Medical Instruments (1501 HK)

Establishing an integrated cardio-cerebrovascular medical device platform

- **China coronary intervention device and PCI supporting device market to grow at 12.9% and 13.3% CAGR in 2018-23E, respectively, driven by rising incidence of acute myocardial infarction (AMI) and increasing PCI penetration.** According to Frost & Sullivan (F&S), the number of China's PCI procedures reached 0.9mn in 2018 and will grow at a 14% CAGR in 2018-23E. F&S estimates that international brands dominated China's coronary intervention device/PCI supporting device market with 89%/87% market share, respectively, in 2018. We expect domestic brands to gain market share thanks to competitive pricing and improving technology. Kindly Medical ranked second in China coronary interventional device market with 1.8% market share and first in China PCI supporting device market with 3.1% market share in 2018 among domestic players.
- **Establishing an integrated cardio-cerebrovascular device platform.** Kindly Medical's product portfolio covers the supporting devices for the entire procedure of a PCI surgery, such as inflation device, introducer set, angiography guide wire, pressure bandage, etc. It recorded 38% sales CAGR and 31% net profit CAGR in 2016-18. Kindly Medical has expanded its product portfolio into the interventional devices of cardiovascular, neurovascular, digestive tract and gynaecological diseases and had 16 products under development as at 16 Sep 2019. Key blockbusters in pipeline include embolectomy catheter, biodegradable sinus/ biliary stents and aortic intervention valves, which all enjoy moderate competition and we expect to launch in 2022-24E.
- **Revenue/ Net profit expected to show 41.3%/ 49.5% CAGR in FY18-21E.** We expect total revenue to grow 48%/ 42%/ 45% YoY to RMB289mn/ 418mn/ 573mn in FY19/20/21E, respectively, mainly driven by strong existing products and new product launches. We expect net profit to grow 61%/ 56%/ 33% YoY to RMB94mn/ 146mn/ 194mn in FY19/20/21E, respectively, and attributable net profit margin will improve to 32%/ 35%/ 34% in FY19/20/21E, respectively, due to the upcoming launches of high-margin products and additional interest income.
- **Initiate BUY with TP of HK$39.5.** Given Kindly Medical's strong cash flow and rich pipeline products, we use DCF to do derive our TP of HK$39.5 based on 8-year DCF model (WACC: 10.42%, terminal growth rate: 3%).
- **Catalyst: better than expected earnings; Risk: delay in product launch.**

Earnings Summary

(YE 31 Dec)	FY17A	FY18A	FY19E	FY20E	FY21E
Revenue (RMB mn)	138	203	289	418	573
YoY growth (%)	29	48	42	45	37
Net profit (RMB mn)	41	58	94	146	194
EPS (RMB)	N/A	N/A	0.56	0.88	1.17
YoY growth (%)	N/A	N/A	N/A	56	33
P/E (x)	N/A	N/A	49	31	24
P/B (x)	N/A	N/A	4	4	3
Yield (%)	3	0	1	1	1
ROE (%)	23	20	11	11	14
Net gearing (%)	Net cash	Net cash	Net cash	Net cash	Net cash

Source: Company data, CMBIS estimates

BUY (Initiation)

Target Price	**HK$39.5**
Up/Downside	**+27.2%**
Current Price	**HK$31.05**

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Mkt. Cap. (HK$ mn)	5,154
Avg. 3mths t/o (HK$ mn)	N/A
52W High/Low (HK$)	35.10/25.25
Total Issued Shares (mn)	46

Source: Bloomberg

Shareholding Structure

KDL (603987 CH)	25.82%
Ningbo Huaige Taiyi	15.18%
Independent shareholders	31.29%
H-share free float	27.71%

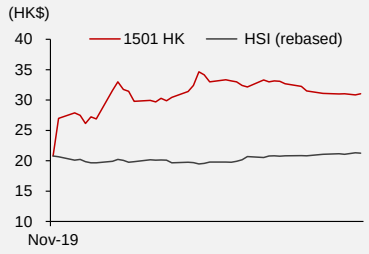
Source:HKEx, Bloomberg

Share performance

	Absolute	Relative
1-mth	-1.8%	-9%
3-mth	N/A	N/A
6-mth	N/A	N/A

Source: Bloomberg

12-mth price performance



Source: Bloomberg

Auditor: KPMG
Web-site: www.kdl-int.com

Contents

Investment Thesis

Shanghai Kindly Medical Instruments (Kindly Medical) is a leading cardiovascular interventional device manufacturer in China. According to Frost & Sullivan (F&S), among domestic players, the Company ranked second in China coronary interventional device market and the first in China Percutaneous Coronary Intervention (PCI) supporting device market in 2018. Thanks to launch of new products and market share gain, Kindly Medical recorded 38% sales CAGR between 2016-18 and realized 31% net profit CAGR during the same period.

China coronary intervention device/ PCI supporting device market to show 12.9% and 13.3% CAGR in 2018-23E, driven by rising incidence of acute myocardial infarction (AMI) and increasing PCI penetration

According to F&S, China's volume of PCI procedures reached 0.9mn in 2018 and may further grow at a 14% CAGR to 1.8mn in 2023E, due to 1) increasing incidence of acute myocardial infarction resulted from aging population, and 2) increasing penetration of PCI procedures. China's coronary intervention device market reached RMB5.2bn in 2018 and may grow at 12.9% CAGR in 2018-23E and China PCI supporting device market was RMB3.0bn in 2018 and may deliver 13.3% CAGR in 2018-23E, based on F&S estimates. F&S estimates that international brands dominated China's coronary intervention device/PCI supporting device market with 89%/87% share, respectively, in 2018. We expect domestic brands to substitute foreign brands thanks to competitive pricing and improving technology.

Broad product portfolio covering nearly entire PCI supporting devices

Kindly Medical has a diversified product portfolio, covering nearly all the supporting devices used in the PCI procedure, such as inflation device, introducer set, angiography guide wire, pressure bandage, etc., which grew at over 50% YoY by volume in 2018 with ASP ranging from RMB34 to RMB104 per unit in 2018. Kindly Medical recorded 38% sales CAGR and 31% net profit CAGR in 2016-18 and we expect it to continue recording solid growth given the increasing PCI procedures and the potential substitution of international brands.

Diversifying product portfolio into new interventional devices

Kindly Medical focuses on innovative interventional medical devices in the fields of cardiovascular, neurovascular, digestive tract and gynaecological diseases, etc. As at 16 Sep 2019, the Company had 16 products under development. Kindly Medical recently received approvals from the NMPA for PTCA balloon dilation catheter (PTCA 球囊扩张导管), micro-catheter (微导管), micro-guidewire (指引导丝) and guide catheter (指引导管) in Apr 2019, May 2019, Jul 2019 and Dec 2019, respectively. Key blockbusters in the pipeline include embolectomy catheter, biodegradable sinus/ biliary stents and aortic intervention valves, which are expected to be launched to market in 2022-24E.

Revenue expected to show 41.3% CAGR in FY18-21E

We expect total revenue to grow 48%/ 42%/ 45% in FY19/20/21E, representing 41.3% CAGR in FY18-21E, mainly driven by cardiovascular devices. We take risk-adjusted revenue for pipeline products. We also take PoS of 90% for products which have already filed New Drug Applications (NDAs). For products not being required to conduct clinical trials, we assume 50-60% probability of success (PoS) based on different development stages. For products required for clinical trials, we expect 30-40% PoS based on different development stages.

Net profit expected to deliver 49.5% CAGR in FY18-21E

We expect Kindly Medical's attributable net profit to grow by 61%/ 56%/ 33% to RMB94mn/ RMB146mn/ RMB194mn in FY19/20/21E, respectively, driven by total revenue growth, margin expansion and additional interest income. Attributable net profit margin will gradually increase to 32%/ 35%/ 34% in FY19/20/21E thanks to the upcoming launches of high-margin products and additional interest income.

Initiate at BUY with TP of HK$39.5

Given Kindly Medical's strong cash flow and the upcoming pipeline products, we believe DCF would be a reasonable valuation method. We derive TP of HK$39.5 based on an 8-year DCF valuation (WACC: 10.42%, terminal growth rate: 3.0%), representing FY20E/21E PER of 40x/ 30x.

Investment risks

1) Failure to develop and market new products in a timely manner;
2) Potential price erosion pressure from enhanced procurement; and
3) Additional cost incurred from the roll-out of "two-invoice" system.

Company Overview

Top 1 domestic player in China PCI supporting device market

Established in 2006, Shanghai Kindly Medical Instruments (Kindly Medical) is a leading cardiovascular interventional device manufacture in China. According to F&S, among domestic players, the Company ranked second in China coronary interventional device market, and first in China PCI supporting device market in 2018.

As of end-2019, The Company had obtained approvals for 28 products, including 16 Class III medical device approvals from NMPA and 12 Class II medical device approvals from the Shanghai Medical Products Administration (MPA). As of 16 Sep 2019, Kindly Medical had 60 registered patents, 77 patents under application and five registered software.

Thanks to launch of new products and consistent market share gain, Kindly Medical delivered a 38% sales CARG from 2016 to 2018 and recorded RMB203mn revenue in 2018. Meanwhile, the Company's net profit realized a 31% CAGR between 2016 and 2018 and reached RMB58mn in 2018. Interventional medical devices accounted for 87.1% of the Company's total sales in 2018, contributing the largest proportion of the Company's revenue.

Figure 1: Key milestones

Time	Event
2006	Established in Jun 2006 in the PRC as a joint venture between KDL and Dalian Health Island Technology Co., Ltd. (大连健康岛科技有限公司)
2007	Obtained product registration certificates for inflation device and Y connector pack in Jun and Dec 2007, respectively
2009	Obtained product registration certificate for intervention accessories kit in Sep 2009
2010	Sales revenue exceeded RMB10mn
	Acquired Shanghai KDL Research Center, a wholly-owned subsidiary
	Received certification as a New High-tech Enterprise in Dec 2010
2012	Obtained the first CE certification
2015	Converted to a joint stock limited liability company
2016	Sales revenue exceeded RMB100mn
	Established Zhuhai Derui, a wholly-owned subsidiary
2017	Recognized as a Shanghai "Growing Giant of Technology" in Jan 2017
2018	Sales revenue exceeded RMB200mn and sales revenue generated from overseas sales exceeded USD10mn
	Established Shanghai Pukon, Shanghai Qimu and Shanghai Puhui, all of which are non-wholly owned subsidiaries
2019	Established Shanghai Healing, a non-wholly owned subsidiary, and Hongkong Int, a wholly-owned subsidiary
	Successfully listed on Hong Kong Stock Exchange on 8 Nov 2019.

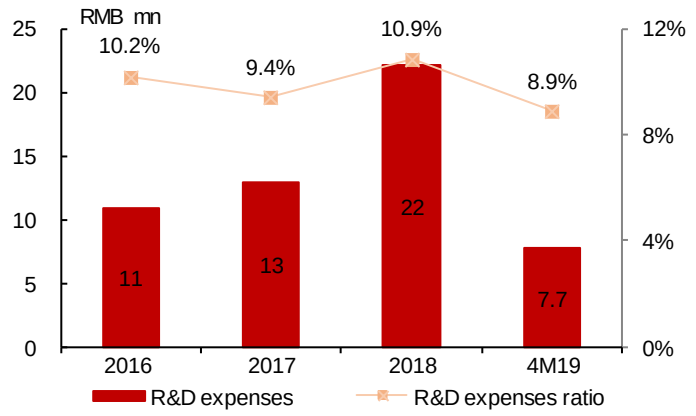
Source: Company data, CMBIS

Building up integrated R&D plafform

Kindly Medical aims to develop into a leading player in interventional medical devices with comprehensive product portfolio including PCI support devices, aortic valves, biodegradable stents, etc.

As at 16 Sep 2019, Kindly Medical employed 755 staff, of which 103 staff were R&D employees. The R&D head, Mr. Li Tao, has over 12 years of relevant experiences. Kindly Medical has consistently invested in R&D. Between 2016 and 2018, the Company's R&D expense to sales ratio remained as high as 9-11%.

Figure 2: Kindly Medical's R&D expenses to sales ratio



Source: Company data, CMBIS

Figure 3: Kindly Medical's employee structure

Function	Number of full-time employees	% of total employees
Senior management	10	1%
Research and development	101	13%
Production	458	60%
Sales and marketing	62	8%
Quality assurance	75	10%
Finance	16	2%
Administrative	39	5%
Total	**761**	**100%**

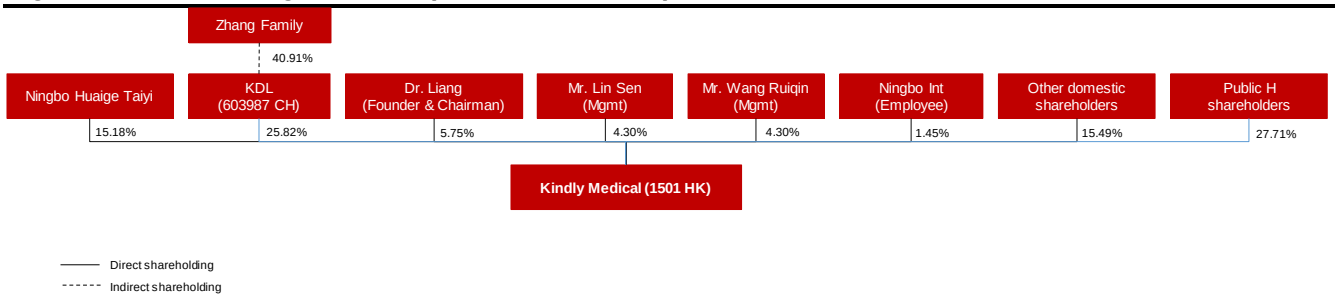
Source: Company data, CMBIS, as at 15 Oct 2019.

Shareholding structure

As of 31 Dec 2019, Zhang Family indirectly controlled 25.82% stake in Kindly Medical. Dr. Liang, Founder and Chairman of the Company, held 5.75% stake. Other independent shareholders, whom are key management and employees as well as distributors, owned a total of 25.54% stake in Kindly Medical.

KDL mainly produces common consumable medical puncture devices such as syringes, infusion sets, medical needles, needle tube, etc, whereas Kindly Medical is mainly focused on high-value medical devices in various therapeutic areas. We see big differences between the businesses of KDL and Kindly Medical.

Figure 4: Shareholding structure (As of 31 Dec 2019)



Note:
(1) Other domestic shareholders include Mr. Chen Xing, Mr. Huang Chubin, Ningbo Tongchuang Suwei, Mr. Wang Kai.

Source: Company data, HKEX, CMBIS

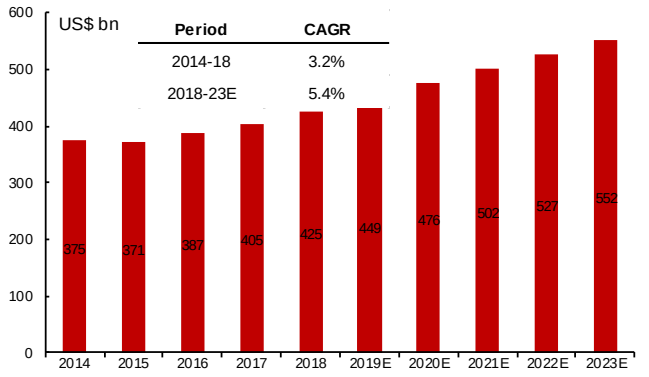
Fast-growing PCI Medical Device Market

Solid growth in global and China medical device market

According to F&S, the global medical device market reached US$425.3bn in 2018, representing 3.2% CAGR in 2014-18 and is expected to reach US$552.1bn in 2023E, representing 5.4% CAGR in 2018-23E.

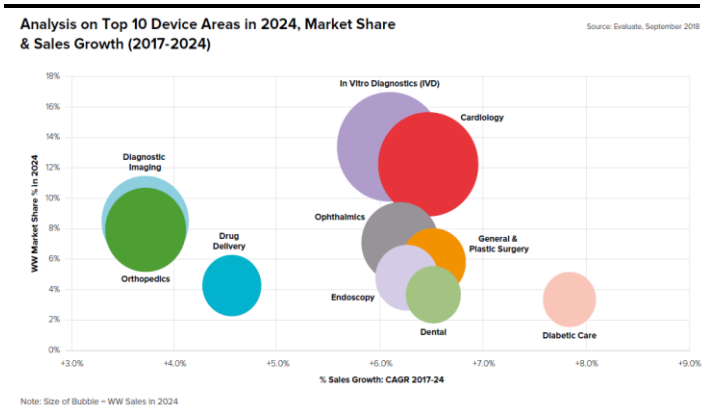
According to EvaluateMedTech®, in vitro diagnostic (IVD), cardiovascular and diagnostic imaging devices are the top three segments with market share of 13.0%, 11.6% and 9.8%, respectively, in the global market by revenue in 2017. EvaluateMedTech® forecasts cardiology to be the No.2 device area in 2024E with annual sales of US$72.6bn and a 12.2% share of total medical device market. Neurology sets to be the fastest-growing device area, with sales expected to rise to US$15.8bn in 2024E, representing 9.1% CAGR in 2017-24E.

Figure 5: Global device market to grow at 5.4% CAGR in 2018-23E



Source: F&S, CMBIS

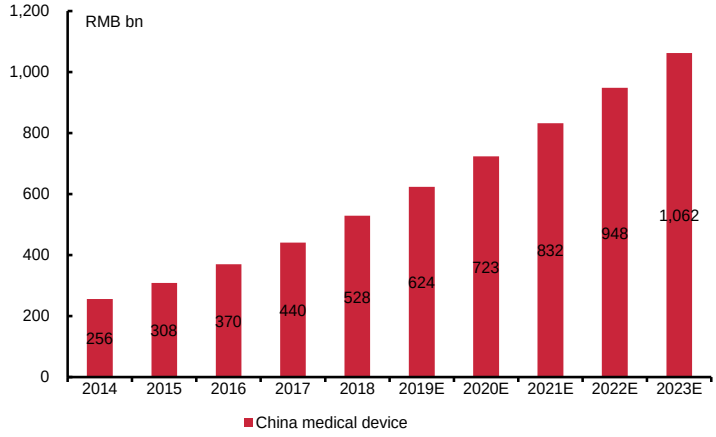
Figure 6: Estimated top 10 device areas in 2024E



Source: EvaluateMedTech, CMBIS; Note: Size of bubble =WW sales in 2024E

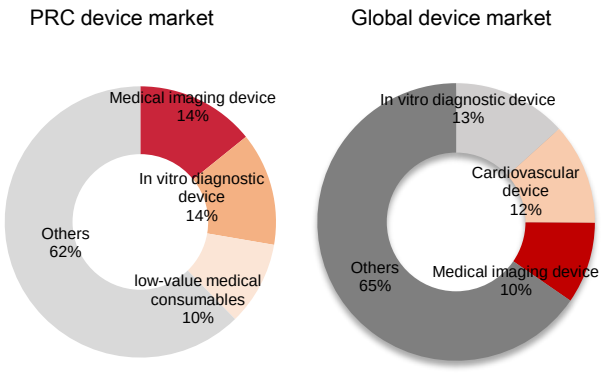
F&S estimates that PRC medical device market has grown fast from RMB255.6bn in 2014 to RMB528.4bn in 2018, indicating a CAGR of 19.9%. F&S also forecasts the PRC medical device market to grow at a 15.0% CAGR in 2018-23E to RMB1,061.9bn, driven by an aging population and increasing penetration of PCI procedures. Medical imaging devices, in vitro diagnostic devices and low-value medical consumables are the top three segments of the PRC medical device market by sales revenue with a market share of 14.2%, 13.5% and 10.0%, respectively.

Figure 7: PRC medical device market to grow at 15% CAGR in 2018-23E



Source: F&S, CMBIS

Figure 8: PRC and global medical device market breakdown in 2018



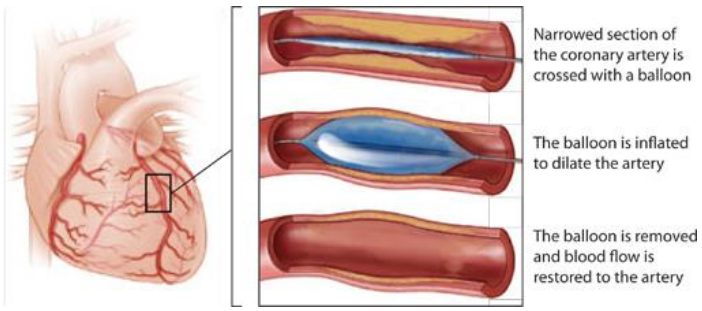
Source: F&S, CMBIS

PCI becomes standard of care for high-risk myocardial infarction

Myocardial infarction is a kind of heart attack caused by the acute persistent ischemia of coronary artery. Current treatments for myocardial infarction include **drug therapies, surgery treatments and interventional procedures** that help restore adequate blood flow to blocked areas of the heart.

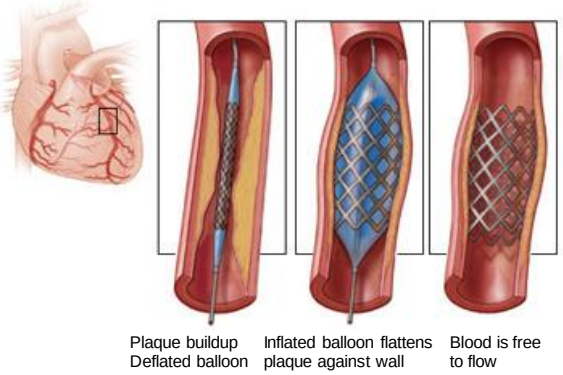
PCI is a type of minimally invasive surgery primarily for the treatment of obstructive coronary artery disease. There are mainly two common interventional procedures, including percutaneous transluminal coronary angioplasty (PTCA, 经皮冠状动脉腔内成形手术) and coronary stent implantation (CSI, 心内支架植入手术). As PCI is minimal invasive, highly effective and safe, PCI has substituted coronary artery bypass surgery (CABG) for treatment of high-risk myocardial infarction during recent years.

Figure 9: Procedure of PTCA surgery



Source: Healthwise, CMBIS

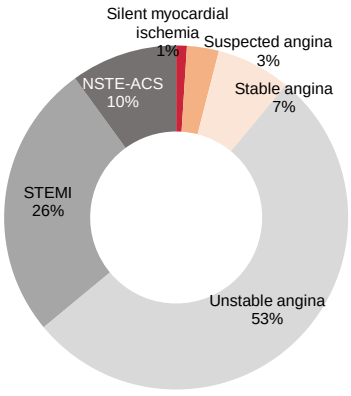
Figure 10: Procedure of CSI surgery



Source: Healthwise, CMBIS

There are mainly two types of myocardial infarction: 1) acute coronary disease (ACS) and 2) stable coronary artery disease (SCAD). ACS can be categorized into two types: 1) ST-Elevation Myocardial Infarction (STEMI) and 2) non-ST-segment elevation acute coronary syndrome (NSTE-ACS). NSTE-ACS can be further divided into: 1) non-ST elevation myocardial infarction (NSTEMI) and 2) unstable angina (UA).

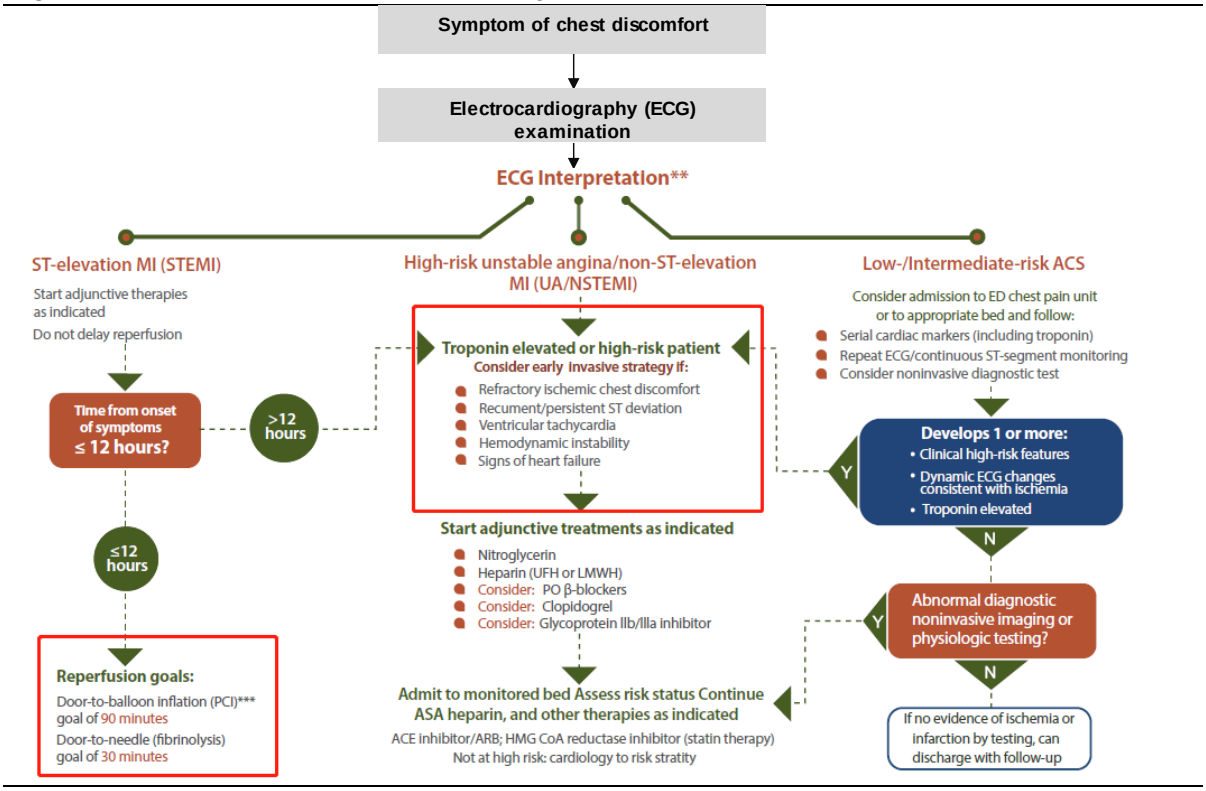
Figure 11: Types of patients treated by PCI surgeries in 2018 in China



Source: National Centre for Cardiovascular Diseases, CMBIS

STEMI is a very serious type of heart attack caused by a total blockage of the coronary artery, which can cause extensive damage to a large area of the heart. Major guidelines recommend STEMI patients to receive primary percutaneous coronary intervention (PPCI) surgery within 12 hours of symptoms onset. China's guidelines also recommend high-risk NSTE-ACS, UA or SCAD patients to receive PCI treatment. Hence, we believe PCI has become the standard of care for treatment of high-risk myocardial infarction.

Figure 12: Recommended treatment for myocardial infarction



Source: ACLS Training Center, CMBIS

Increasing chest pain centers to support PCI procedure growth

China's "Guidelines for the diagnosis and treatment of acute ST- elevation myocardial infarction" recommends that STEMI patients within 12 hours of symptom onset should receive PPCI treatment. For patients within three hours of symptom onset, PPCI has similar efficacy as thrombolytic therapy.

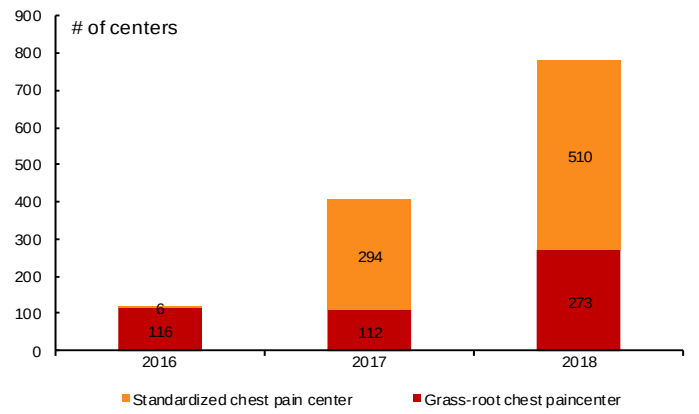
Hospitals in China have started to build chest pain centres since 2012 in order to provide timely treatment for patients with emergent cardiovascular diseases. According to the China Chest Pain Centre (China CPC), by the end-2018, China had a total of 783 qualified chest pain centres, including 510 standardized chest pain centers and 273 grass-root chest pain centers.

Chest pain centers aim to improve the diagnosis and treatment efficiency of patients. The time from the patient entering hospital door to being intervened with balloon expansion is referred to as the door-ball time (D2B). The D2B time for acute myocardial infarction reperfusion therapy should be less than 90 minutes. The shorter D2B time, the better prognosis for patients. In 2000, 35% of the US's chest pain centers can achieve the D2B of less than 90 minutes. In 2010, the average D2B further declined to 65 minutes in the US. In Germany, the average D2B was 31 minutes in 2012, leading other regions in the world.

According to China's standards for chest pain centers, the standardized chest pain centers should meet the following standards: 1) conducting more than 200 PCI surgeries per year and more than 50 PPCI surgeries per year and 2) operating catheter laboratories which is operating room of PCI

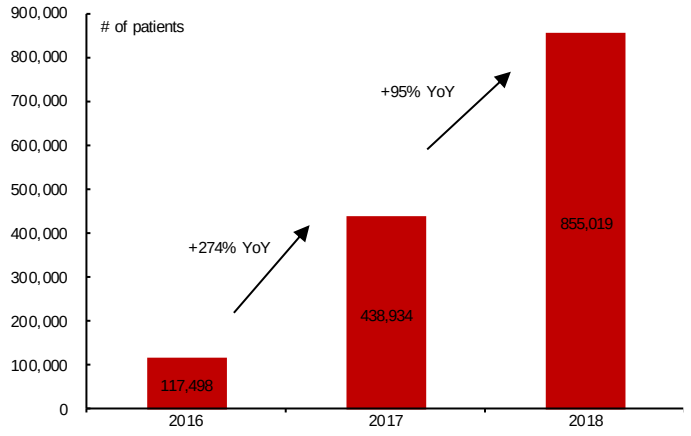
surgeries 24 hours/7days. The grass-root chest pain centers should meet the following standards: 1) having at least two senior cardiovascular physicians and 2) treating more than 30 AMI patients per year.

Figure 13: Increasing number of chest pain centers



Source: National Centre for Cardiovascular Diseases, CMBIS

Figure 14: Increasing number of patient visits in chest pain centers



Source: National Centre for Cardiovascular Diseases, CMBIS

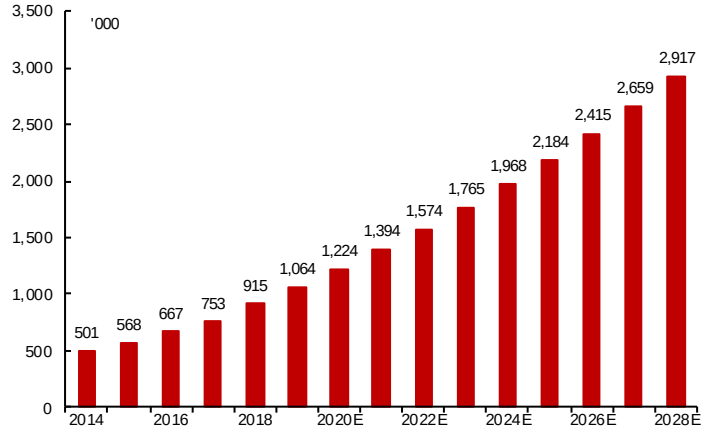
We see that PCI surgeries in Class III hospitals located in Tier I cities were overloaded. However, PCI surgery volume in lower-tier cities or county-level hospitals still has large growth potential. According to China CPC, of the total 915,256 PCI surgeries in China in 2018, county-level hospitals conducted 81,277 PCI surgeries, or 9% of the total number, indicating large potential in volume growth in county-level hospitals.

PCI penetration is still far below developed markets

According to F&S, China's volume of PCI procedures increased rapidly at a CAGR of 16.3% from 0.5mn in 2014 to 0.9mn in 2018. The volume may further grow to 1.8mn in 2023E, driven by increasing incidence of acute myocardial infarction due to aging population and changing lifestyles.

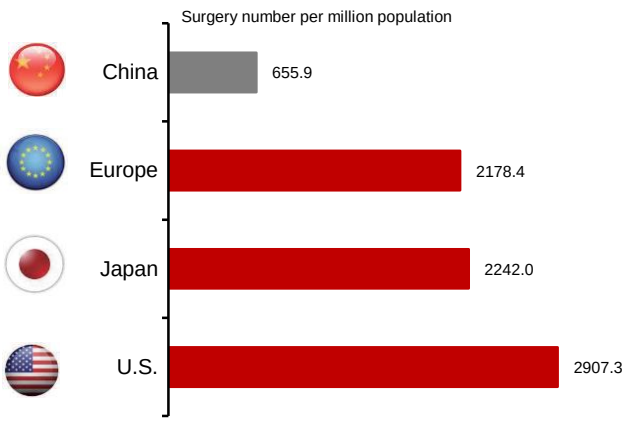
Penetration of PCI procedures in China is still far behind developed countries. According to F&S, as of 2018, China had an average 655.9 PCI procedures per million population, which was below 2,907 for the US, 2,242 for Japan and 2,178 for Europe.

Figure 15: Historical and forecasted volume of PCI procedures in China



Source: F&S, CMBIS

Figure 16: Significantly lower penetration of PCI procedures compared to overseas market

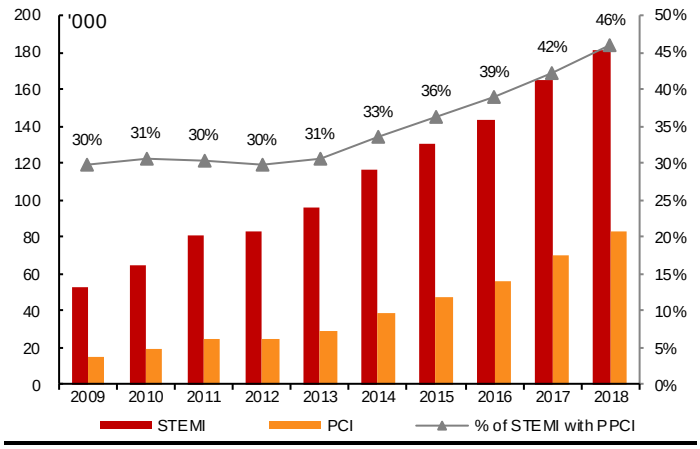


Source: F&S, CMBIS

According to National Centre for Cardiovascular Diseases (NCCD), as of 2018, the average stent implantation has declined to a reasonable level of 1.46 per PCI surgery, indicating that abuse of stents has been gradually corrected.

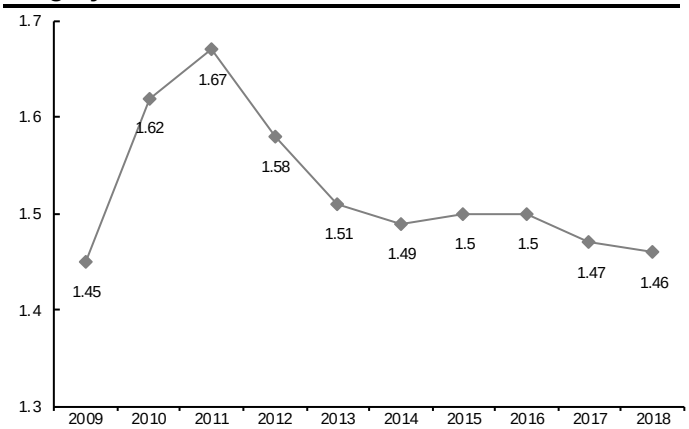
According to China CPC, the proportion of STEMI patients receiving PPCI treatment has increased from 29.76% in 2009 to 45.94% in 2018, thanks to the increasing number of chest pain centers. Nevertheless, there is still significant room for improvement of PPCI treatment ratio for STEMI patients.

Figure 17: Number of STEMI patients and number of STEMI patients receiving PPCI treatment in China



Source: China CPC, CMBIS

Figure 18: Number of stent implantation per PCI surgery in China



Source: National Centre for Cardiovascular Diseases, CMBIS

We expect penetration of PCI procedures in China will increase due to: 1) increasing number of qualified hospitals for PCI surgery and 2) rising incidence of myocardial infarction caused by changing lifestyle.

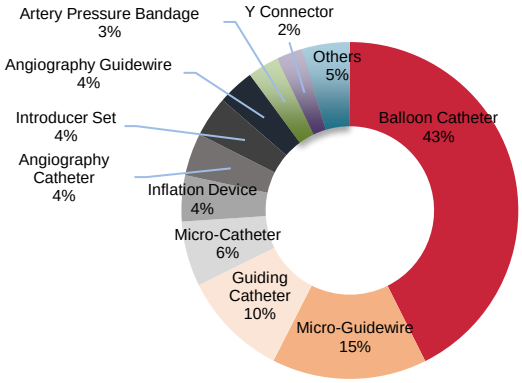
Domestic players has large potential for market share gain

According to F&S, as of 2018, major PRC coronary intervention devices mainly include balloon catheter (43% of total market), micro-guidewire (15% of total market), guiding catheter (10% of total market) and micro-catheter (6% of total market), etc. According to F&S, China's coronary intervention device market reached RMB5.2bn in 2018 and may grow at 12.9% CAGR in 2018-23E.

International brands have a dominant position in China's coronary intervention device market. F&S forecasts domestic brands to take market share thanks to competitive pricing and improving technology. F&S estimates domestic brands' market share to rise from 11% in 2018 to 19% by 2023E.

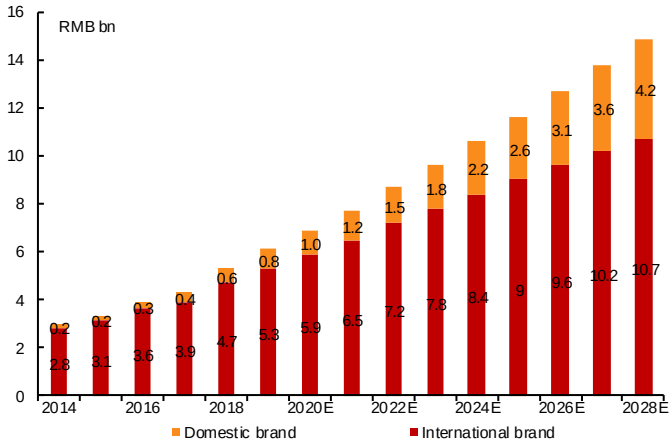
We believe domestic brands will fast substitute international brands thanks to 1) lower price with equivalent quality, 2) ability to manufacture on a large scale to ensure a sustainable supply of products and 3) leading technology in certain fields with higher R&D investment.

Figure 19: Breakdown of PRC coronary intervention device market by category in 2018



Source: F&S, CMBIS

Figure 20: Breakdown of PRC coronary intervention device market by international and domestic brand



Source: F&S, CMBIS

Many types of supporting devices are needed during a PCI procedure to deliver balloon catheters and stents to a blockage site. Such supporting devices are named as PCI supporting devices, including angiography guidewire, angiography catheter, guiding catheter, micro-guidewire, inflation device, etc.

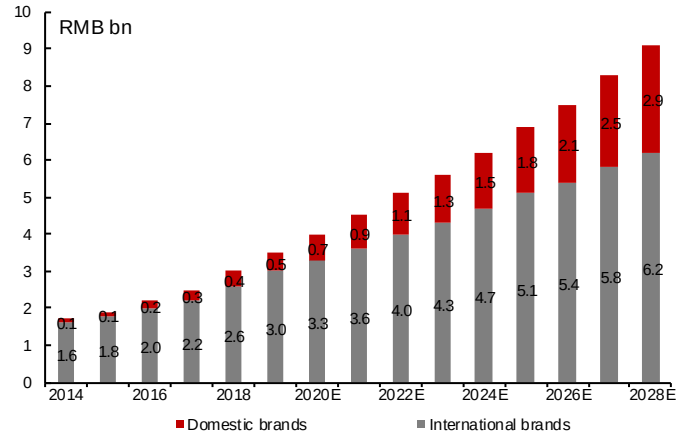
Figure 21: PCI devices used during a PCI procedure

	Angiography		Treatment	
Procedure of PCI	After the puncture through the radial/ femoral artery, an angiography catheter is inserted into the blood vessel and reach the coronary sinus with the help of angiography guidewire.	By injecting radiocontrast agent under X-ray, the blockage site in the coronary artery is found. Micro-guidewire then goes through the guiding catheter to the place where the coronary vessel is narrow.	A balloon catheter is then placed into the blockage site through the guiding catheter on the micro-guidewire. The balloon is inflated to compress the blockage against the artery wall.	The blockage site is opened up and blood flow returns to normal. The balloon is withdrawn. A coronary stent will be placed in the artery to hold the blockage site open
PCI device used in the procedure	•Seldinger needle and introducer set •Angiography guidewire and angiography catheter •Artery pressure bandage	•Coronary control syringe •Manifolds •Pressure tubing •Guiding catheter	•Micro-guidewire •Balloon Catheter •Inflation device •Y connector •Micro-catheter	•Coronary stent

Source: F&S, CMBIS

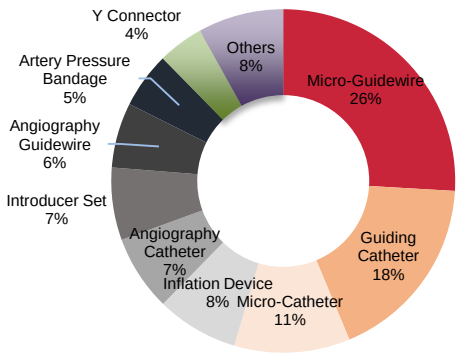
F&S estimates the China PCI supporting device market to grow from RMB3.0bn in 2018 to RMB5.6bn in 2023E, indicating a 13.3% CAGR between 2018 and 2023E. F&S forecasts domestic brands to expand their market share in the China PCI supporting device market from 13% in 2018 to 23% in 2023E.

Figure 22: Growth of PCI supporting device market in China



Source: F&S, CMBIS

Figure 23: Breakdown of PRC supporting device market by category in 2018



Source: F&S, CMBIS

In terms of sales revenue, Kindly Medical ranks No.10 in China's coronary intervention device market while the Company is the second largest domestic brand in the market. Based on F&S estimates, Kindly Medical took up 1.8% market share among all coronary intervention device players in 2018 and 3.1% market share in China PCI supporting device market in 2018, indicating large potential for market share gain.

Chinese government encourages domestic brands to substitute foreign brands by providing better reimbursement coverage for domestic brands, which speeds up the market share gain for domestic brands.

Figure 24: Leading players in the coronary intervention device market in China in 2018

	Company name	Foreign/ domestic	Sales (RMB mn)	Market share (%)
1	Company A	Foreign Brand	1,138.7	21.7
2	Company B	Foreign Brand	959.2	18.3
3	Company C	Foreign Brand	563.1	10.7
4	Company D	Foreign Brand	499.0	9.5
5	Company E	Foreign Brand	461.3	8.8
6	Company F	Foreign Brand	290.6	5.5
7	Company G	Foreign Brand	153.8	2.9
8	Company H	Foreign Brand	134.0	2.6
9	Company I	Domestic brand	116.9	2.2
10	**Kindly Medical**	**Domestic brand**	**93.0**	**1.8**
11	Company J	Foreign Brand	75.7	1.4
12	Company K	Domestic brand	72.3	1.4
13	Others		683.4	13.0
		Total:	**5,241**	**100**

Source: F&S, CMBIS

Figure 25: Leading players in the PCI supporting device market in China in 2018

	Company name	Foreign/ domestic	Sales (RMB mn)	Market share (%)
1	Company A	Foreign Brand	882.4	29.3
2	Company B	Foreign Brand	499.0	16.6
3	Company C	Foreign Brand	395.4	13.1
4	Company D	Foreign Brand	290.6	9.7
5	Company E	Foreign Brand	204.3	6.8
6	Company F	Foreign Brand	108.4	3.6
7	**Kindly Medical**	**Domestic brand**	**93.0**	**3.1**
8	Company G	Domestic brand	80.3	2.7
9	Company H	Foreign Brand	75.7	2.5
10	Company I	Domestic brand	54.3	1.8
11	Others		324.4	10.8
		Total:	**3,007.8**	**100.0**

Source: F&S, CMBIS

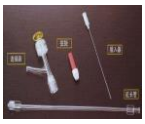
Investment Summary

Broad product portfolio covering nearly all PCI supporting devices

Kindly Medical is a leading cardiovascular interventional device manufacture in China. Kindly Medical's major products include inflation device (球囊扩张压力泵), introducer set (导管鞘套装), guidewire (造影导丝), pressure bandage (动脉压迫止血带), Y connector pack (Y 型连接器套装), pressure extension tube (压力延长管), manifold (三通旋塞) and angiography catheter (造影导管).

Kindly Medical recently received approvals from the NMPA for PTCA balloon dilation catheter (PTCA 球囊扩张导管), micro-catheter (微导管) and micro-guidewire (指引导丝) in Apr 2019, May 2019 and Jul 2019, respectively. In Dec 2019, Kindly Medical received NMPA's approval for guide catheter (指引导管). The Company now has a comprehensive product portfolio covering nearly all PCI supporting devices.

Figure 26: Broad product portfolio covers entire PCI surgery

Product category	Applications	Example of products	Product category	Applications	Example of products
Inflation device (球囊扩张压力泵)	Used in PTCA surgery to inflate the balloon to dilate the vessel or place the stent in the vessel		**Y connector pack (Y型连接器套装)**	Used in PTCA surgery to assist in establishing in vitro a working passageway for PTCA balloon and stent into the body	
Introducer set for single use (一次性使用导管鞘套装)	Used to introduce into the artery percutaneously in intervention surgery and establish a passageway for introducing catheters into the blood vessel		**Pressure extension tube for single use (一次性使用压力延长管)**	Used for connection and infusion in pressure monitoring tubing during intervention surgery	
Guidewire for single use (一次性使用造影导丝)	Used in angiography to establish a passageway from the puncture position to the lesion or to the distal end through the lesion		**Mainfold for single use (一次性使用三通旋塞)**	Used for connection, infusion and pathway switching in pressure monitoring tubing during intervention surgery	
Pressure bandage for single use (一次性使用动脉压迫止血带)	Used to assist in compression hemostasis after the introducer is removed from the artery		**Angiography catheter for single use (一次性使用造影导管)**	Used to inject and infuse contrast media and/or fluid, and used in coronary angiography	

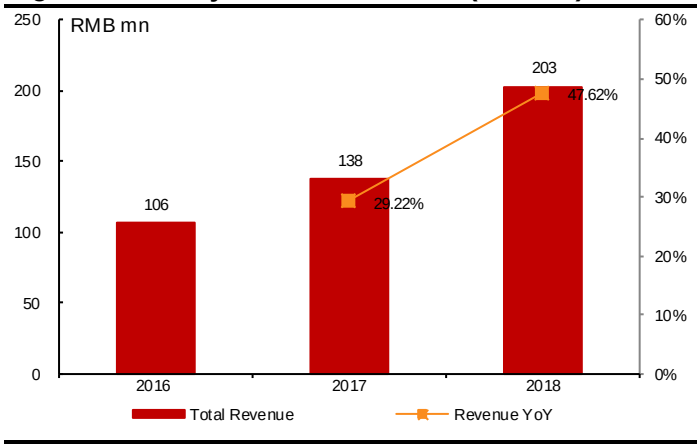
Source: Company, CMBIS

Strong growth momentum of 31% CAGR in 2016-18

Thanks to launch of new products and consistent market share gain, Kindly Medical delivered a 38% CAGR in revenue between 2016 and 2018 and recorded RMB203mn revenue in 2018. Meanwhile, the Company's net profit realized a 31% CAGR in 2016-18 and reached RMB58mn in 2018.

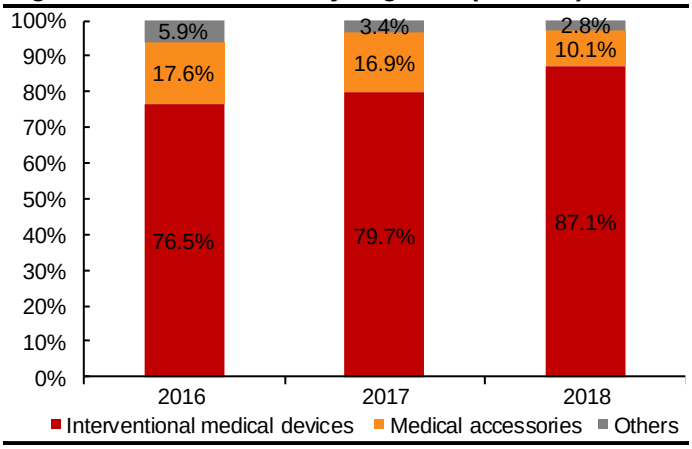
By segment, Kindly Medical's revenue are mainly from interventional medical device segment and medical accessories segment. Interventional medical devices mainly contain inflation devices, introducer sets, guidewires, pressure bandages, Y connector packs, etc. Meanwhile, medical accessories are mainly luer connectors and other products. The proportion of sales from interventional medical devices has increased from 76.5% in 2016 to 87.1% in 2018.

Figure 27: Kindly Medical's revenue (2016-18)



Source: Company data, CMBIS

Figure 28: Revenue mix by segment (2016-18)



Source: Company data, CMBIS

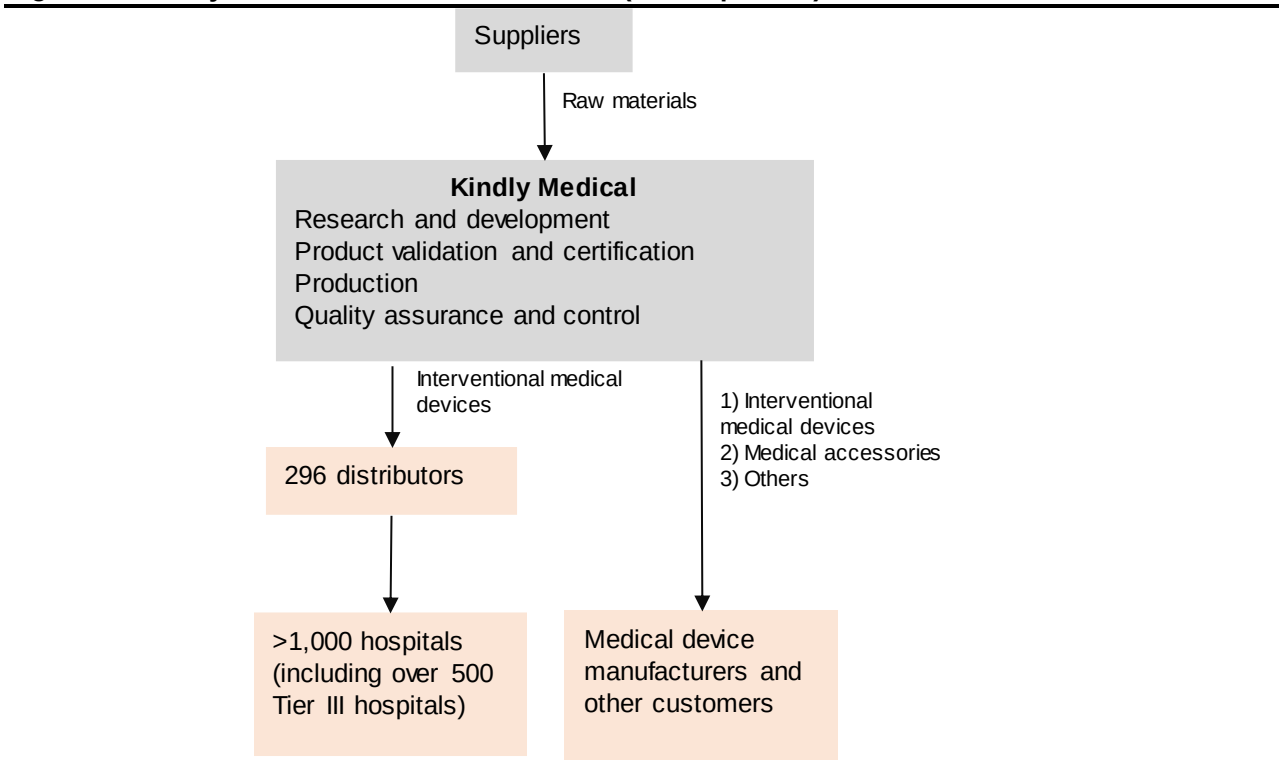
Extensive sales network coverage

In the first four months of 2019, Kindly Medical has 235 PRC distributors covering 21 provinces, four directly administered municipalities and two autonomous regions in China, and 32 overseas distributors covering 24 countries and regions. The Company's distribution channel covered over 1,000 hospitals (including over 550 Tier III hospitals) in China. Kindly Medical also has an in-house sales & marketing team of about 61 staff in China as of 16 Sep 2019. In 2018, Kindly Medical generated a significant 34.0% of revenue from overseas markets.

In Apr 2019, Kindly Medical has entered into a strategic cooperation framework agreement with China National Medical Device Co. Ltd. ("China National Medical Device"), the largest medical device distributor in China in terms of sales revenue in 2018 to establish and strengthen cooperation in increasing both parties' competitiveness in the medical device industry. China National Medical Device will provide advantageous channel resources and marketing resources to Kindly Medical.

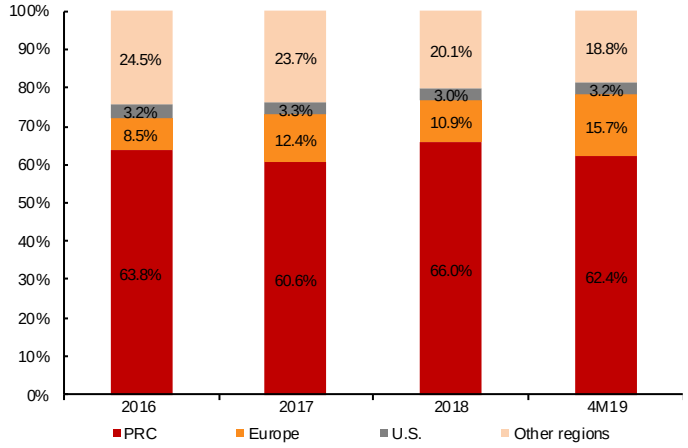
Kindly Medical also sells medical devices and medical accessories to medical device manufacturers in China and overseas. In 2018, Kindly Medical had 170 and 73 medical device manufacturers and other customers in China and overseas, respectively.

Figure 29: Kindly Medical's distribution network (as of Apr 2019)



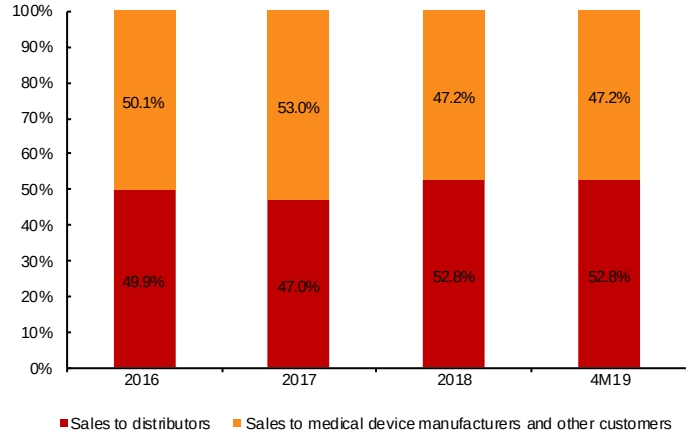
Source: Company data, CMBIS
Note: the chart above shows data as of Apr 2019

Figure 30: Kindly Medical's revenue mix by geography



Source: Company data, CMBIS
Note: Other regions are in Oceania, Africa, North America, South America and Asia (other than Mainland China)

Figure 31: Kindly Medical's revenue mix by sales channel



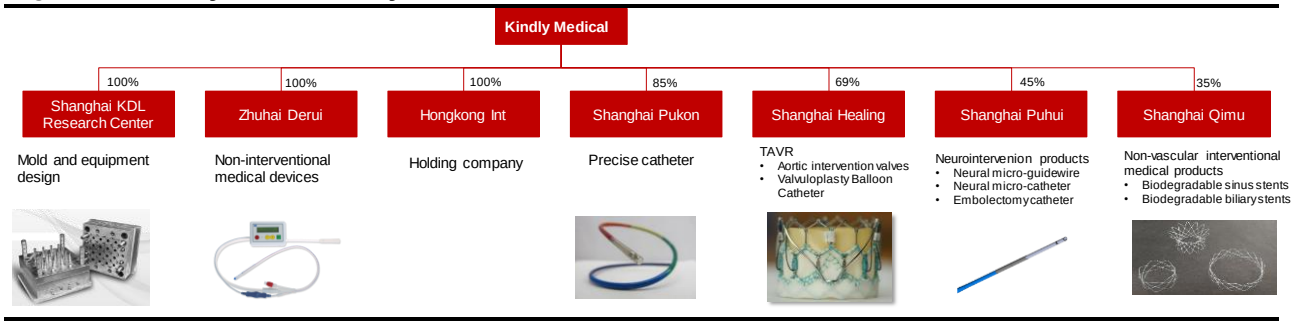
Source: Company data, CMBIS

Diversifying into new interventional devices

As of 16 Sep 2019, Kindly Medical had 16 products under development. The Company focuses on innovative interventional medical devices, covering various therapeutic areas such as cardiovascular disease, neurovascular disease, digestive tract disease, gynecological disease, etc.

To enhance the diversity of pipelines and provide better incentives to key scientists, Kindly Medical has set up several subsidiaries including Shanghai Pukon, Shanghai Qimu, Shanghai Puhui and Shanghai Healing. Each subsidiary focuses on development of a certain area of innovative interventional devices.

Figure 32: Kindly Medical's key subsidiaries



Source: Company data, CMBIS

Rich pipelines covering various interventional devices

Interventional therapy is a mini-invasive therapy performed under the guidance of medical imaging equipment. With a 1-2mm incision, paracentesis can be performed with the lead of medical imaging equipment. Interventional treatment also can be divided into vascular intervention and non-vascular intervention.

Interventional treatment can be applied in many therapeutic areas, such as cardiovascular intervention (including PCI and TAVR), neurovascular intervention, oncology intervention, gynecology and obstetrics intervention, musculoskeletal intervention, etc.

Kindly Medical has rich pipeline products, covering both vascular interventional devices and non-vascular interventional devices. The Company has 16 products in various development stage, among which one pipeline product was under the NMPA approval process, two were under the Shanghai MPA approval process, five were in type test and eight were in research and development.

Kindly Medical recently received approvals from the NMPA for PTCA balloon dilation catheter (PTCA 球囊扩张导管), micro-catheter (微导管) and micro-guidewire (指引导丝) in Apr 2019, May 2019 and Jul 2019, respectively. In Dec 2019, Kindly Medical received NMPA's approval for guide catheter (指引导管). The Company now has a comprehensive product portfolio covering nearly all PCI supporting devices.

Figure 33: Kindly Medical's key pipeline

Subsidiary conducting development	Product category	Type of medical device	Clinical trial required (Y/N)	Progress	(Expected) time of approval
Shanghai Kindly Medical (上海医械)	PTCA balloon catheter (球囊扩张导管)	Class III	N	Approved	16/4/2019
	Micro-catheter (微导管)	Class III	N	Approved	31/5/2019
	Micro-guidewire (指引导丝)	Class III	N	Approved	30/7/2019
	Guide catheter (指引导管)	Class III	N	Approved	04/12/2019
	Fallopian tube catheter (输卵管导管)	Class II	N	Submitted to Shanghai MPA for approval	1Q20E
	Orthopedic intervention device (关节介入手术器械)	Class II	N	Submitted to Shanghai MPA for approval	1Q20E
Shanghai Qimu (七木医疗)	Non-vascular guidewire (非血管腔导丝)	Class II	N	Type test	3Q20E
	Biodegradable sinus stent (可降解鼻窦支架)	Class III	Y	Type test	4Q21E
	Biliary stone extraction balloon catheter (胆道取石球囊导管)	Class II	N	R&D	4Q21E
	Stone extractor (取石网篮)	Class II	N	R&D	1Q22E
	Biodegradable biliary stent (可降解胆道支架)	Class III	Y	R&D	4Q22E
Shanghai Puhui (璞慧医疗)	Neural micro-catheter (神经微导管)	Class III	N	Type test	3Q20E
	Neural micro-guidewire (神经微导丝)	Class III	N	Type test	3Q20E
	Supporting catheter (支撑导管)	Class III	N	Type test	3Q20E
	Embolectomy catheter (取栓导管)	Class III	Y	R&D	2Q22E
Shanghai Healing (翰凌医疗)	Aortic intervention valves (经导管主动脉瓣膜)	Class III	Y	R&D	4Q21E
	Super-Stiff Guidewire (加硬导丝)	Class III	N	R&D	4Q21E
	Expandable vascular sheath (可扩张血管鞘)	Class III	N	R&D	4Q21E
	Valvuloplasty Balloon Catheter (瓣膜预扩张球囊导管)	Class III	N	R&D	3Q24E

Source: Company data, CMBIS

Improving product mix thanks to the launch of high-value products

We expect ex-factory price of micro-catheter to exceed RMB1,000 per unit while ex-factory prices of PTCA balloon catheter, micro-guidewire and guide catheter to be around RMB500 per unit. These new products enjoy significantly higher selling prices than the Company's existing products which may lead to margin expansion for the Company.

Kindly Medical's average ex-factory selling prices of existing products are mainly sold at less than RMB100 per unit, ranging from RMB34-104 per unit in 2018, including OEM sales.

Figure 34: Sales volumes and price ranges of core products

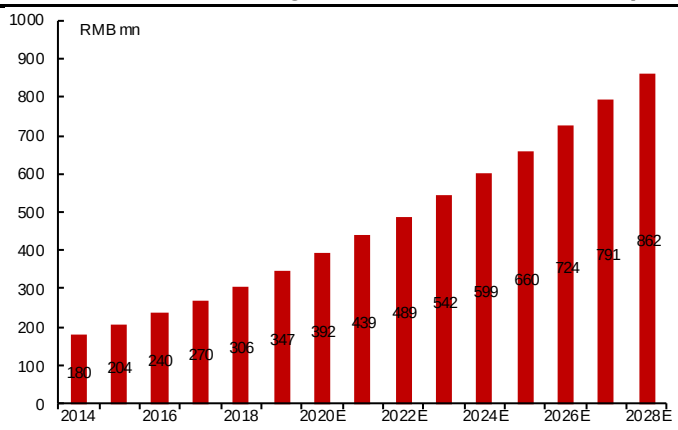
Name of product	2016 Quantity ('000 units)	2016 ASP (RMB)	2017 Quantity ('000 units)	2017 Quantity YoY	2017 ASP (RMB)	2018 Quantity ('000 units)	2018 Quantity YoY	2018 ASP (RMB)
Inflation device	276	105	360	30%	102	558	55%	104
Introducer set	193	30	294	52%	30	517	76%	35
Guidewire	190	22	179	-6%	31	325	82%	34
Pressure bandage	129	37	162	26%	36	260	60%	36
Y connector pack	118	32	198	68%	30	254	28%	36

Source: Company data, CMBIS

Micro-catheters are used in coronary chronic total occlusion (CTO)-PCI. A CTO-PCI is similar to PCI whereby angiography first detects an occlusion section and then push together guidewire and micro-catheter to a lesion location. Micro-catheters are thin wall, small diameter catheters used in minimally invasive applications for intravascular treatment. It is used to help the doctor to cross lesion prior to any balloon dilatation or stenting, giving mechanical support to the guidewire and enhancing its ability to transmit push force to the occlusion.

As per F&S, the micro-catheter market in China is dominated mainly by companies from Japan and the US, with a total share of 94.3% in 2018. In 2017, the first domestic micro-catheter was approved by NMPA. The PRC micro-catheter market for PCI reached RMB305.8mn in 2018, with a 14.1% CAGR in 2014-18 thanks to an increase in CTO-PCI procedures. F&S forecasts the market to be RMB542.1mn in 2023E with a CAGR of 12.1% in 2018-23E.

Figure 35: Market size of micro-guidewire for PCI in China (2014-28E)



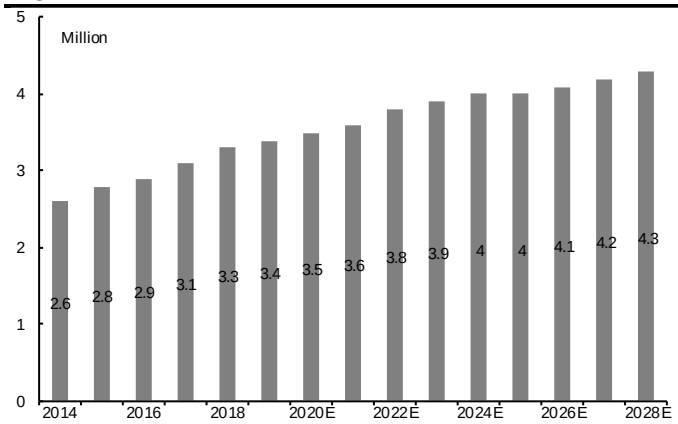
Source: F&S, CMBIS

Shanghai Puhui: entering into a blue ocean market of endovascular intervention

Shanghai Puhui is currently conducting type test for neural thrombectomy system for the treatment of ischemic stroke. The neural thrombectomy system uses self-developed blood clot extraction technology and minimally invasive interventional therapy to complete intracranial thrombectomy. Currently, Shanghai Puhui has four products in the pipeline: neural micro-guidewire, neural micro-catheter, supporting catheter and embolectomy catheter, and aims to launch these products in 2020-22E.

Stroke is a sudden onset of a neurological deficit caused by acute focal injury to the central nervous system due to a vascular cause. Acute ischemic stroke (AIS) accounts for around 80% of total stroke incidence while the remaining 20% is haemorrhagic stroke. Incidence of stroke in China is increasing fast due to changing lifestyle and aging population. According to F&S, China's AIS incidence will rise from 3.3mn in 2018 to 3.9mn in 2023E.

Figure 36: Incidences of acute ischemic stroke in China



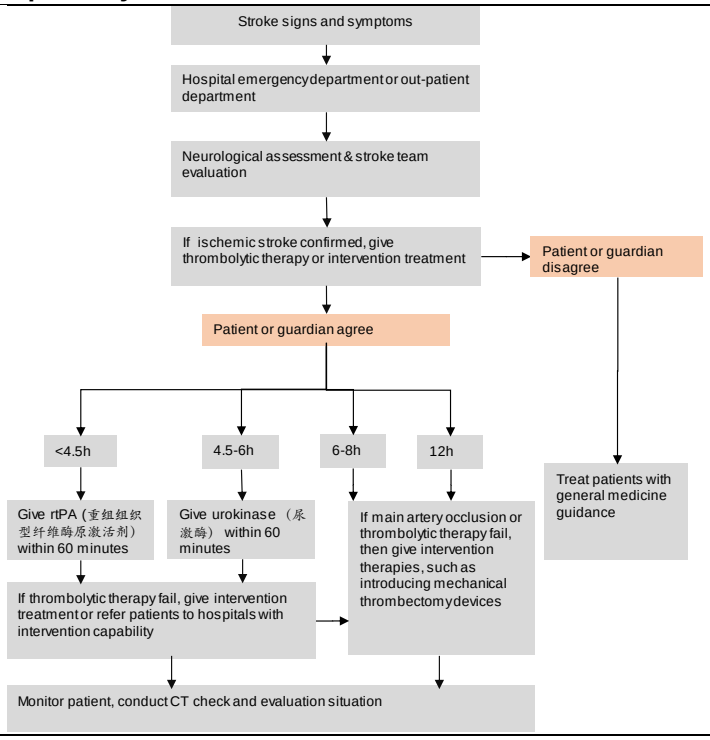
Source: F&S, CMBIS

According to the publication named "Treatment Guidance for Acute Ischemic Stroke (2018)" (急性缺血性卒中救治流程图 2018 版) issued by the Health Commission of Hunan Province, the standardized treatment for AIS patients with symptom onset time within six hours is thrombolytic therapy. Endovascular intervention therapy (including introducing mechanical thrombectomy devices and stents) is recommend for patients who fail thrombolytic therapy or with symptom onset time over 6 hours.

Mechanical thrombectomy devices are used to remove thrombi from the neurovascular in AIS patients. Neural micro-guidewire and micro-catheter are two types of devices for delivering mechanical thrombectomy device and thrombus aspiration device to the blockage site.

Endovascular intervention is an important breakthrough for treatment of AIS during recent years because it is applicable for a wider therapeutic window (within 24 hours of symptoms onset) compared with thrombolytic therapy (within six hours of symptoms onset). Endovascular intervention also demonstrates strong efficacy. Based on the article named "Thrombectomy six to 24 hours after stroke with a mismatch between deficit and infarct" published in "The New England Journal of Medicine", a total of 206 patients with occlusion of the intracranial internal carotid artery or proximal middle cerebral artery who had last been known to be well six to 24 hours earlier, the rate of functional independence at 90 days was 49% in thrombectomy group (thrombectomy plus standard care) as compared with 13% in the control group (standard care alone).

Figure 37: Treatment pathway of acute ischemic stroke

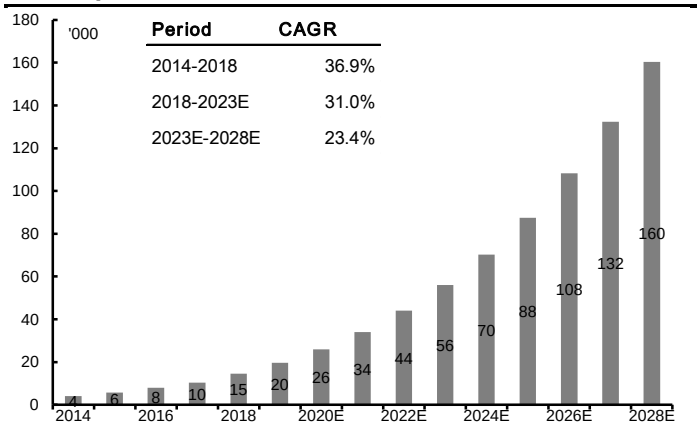


Source: "Treatment Guidance for Acute Ischemic Stroke (2018)" (急性缺血性卒中救治流程图 2018 版) issued by Health Commission of Hunan Province, CMBIS

F&S forecasts the number of mechanical thrombectomy device procedures in China to grow from 14,500 in 2018 to 56,000 in 2023E, representing a CAGR of 31.0% in 2018-23E.

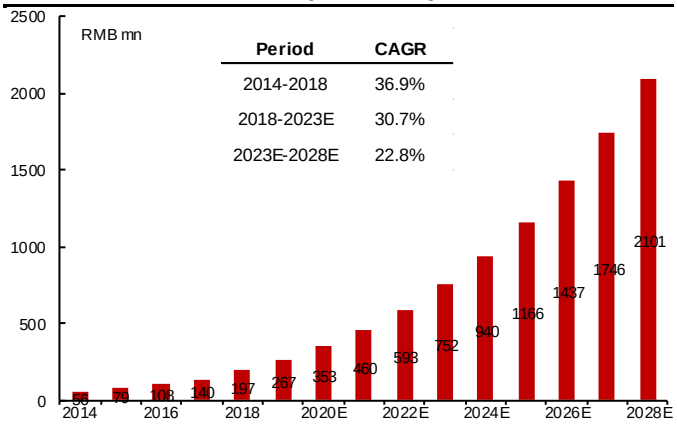
Driven by the fast-growing number of mechanical thrombectomy procedures, the mechanical thrombectomy device, neural micro-guidewire and neural micro-catheter market will also grow fast. F&S forecasts the mechanical thrombectomy device market to increase from RMB197mn in 2018 to RMB752mn in 2023E with 30.7% CAGR in 2018-23E.

Figure 38: Number of mechanical thrombectomy device procedures in China



Source: Frost & Sullivan, CMBIS

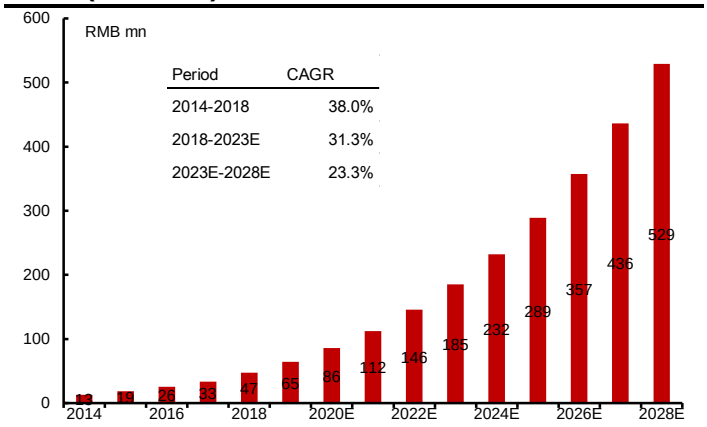
Figure 39: Market size of mechanical thrombectomy device market in China (2014-28E)



Source: Frost & Sullivan, CMBIS

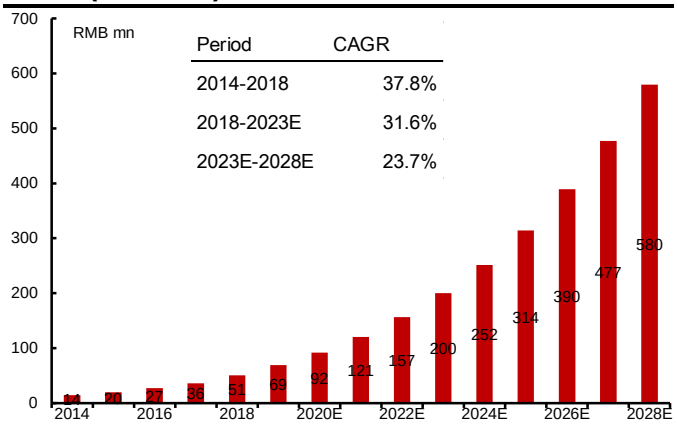
According to F&S, neural micro-guidewire market may grow from RMB47mn in 2018 to RMB185mn in 2023E, implying a 31.3% CAGR and neural micro-catheter market may rise from RMB51mn in 2018 to RMB200mn in 2023E with a 31.6% CAGR, in line with the growth of mechanical thrombectomy device procedures.

Figure 40: Market size of neural micro-guidewire in China (2014-28E)



Source: F&S, CMBIS

Figure 41: Market size of neural micro-catheter in China (2014-28E)



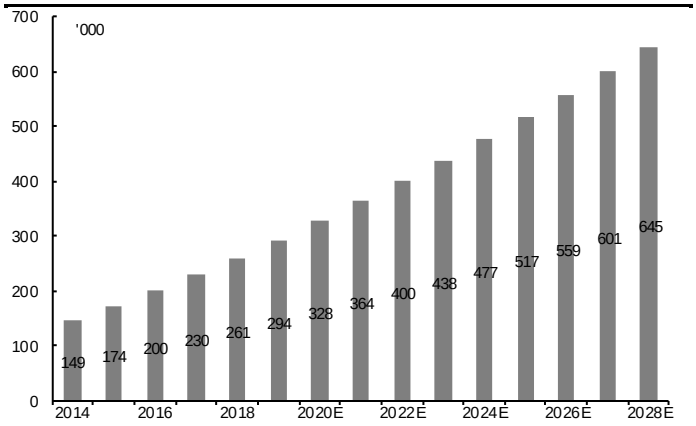
Source: F&S, CMBIS

Shanghai Qimu: leading player in non-vascular biodegradable stent market

Endoscopic biliary stenting is a common treatment for alleviating blockages in the bile duct. For patients with advanced malignant biliary obstruction which is not suitable for surgery, the biliary stent implantation could be best choice.

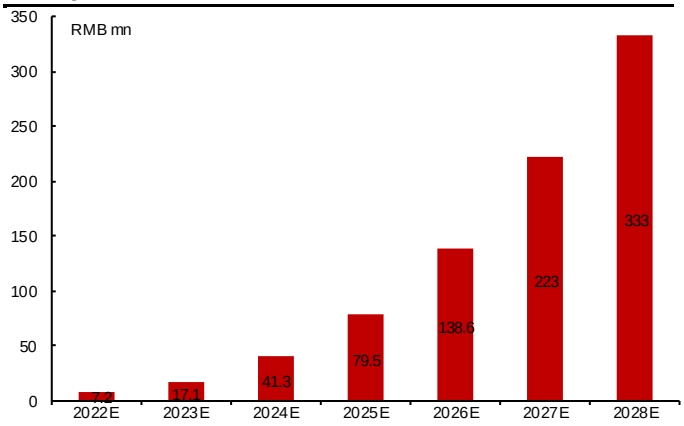
Plastic tube stent (PS) and self-expandable metallic stent (SEMS) are the most commonly used for such stent procedures. F&S estimates the number of therapeutic endoscopic retrograde cholangio-pancreatography (ERCP, 治疗性内视镜逆行胰胆管造影术) in China to grow from 0.26mn in 2018 to 0.44mn in 2023E. F&S expects the first degradable biliary stent will be launched in China in 2022E and the market size could reach RMB333mn by 2028E.

Figure 42: No. of ERCP procedures in China



Source: F&S, CMBIS

Figure 43: Estimated market size of biodegradable biliary stent in China



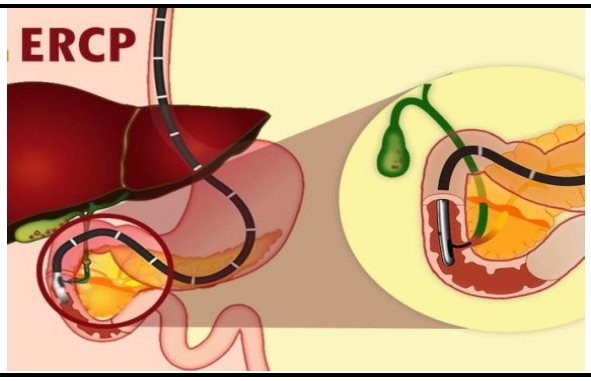
Source: F&S, CMBIS

The price of plastic stents is lower than that of metal stents, but the patency rate of metal stents after three months is significantly higher than that of plastic stent. For patients with an expected survival time of over three months and those who can afford, metal stents would be preferred. For patients with less than 3-month survival time, plastic stents should be recommended.

Biodegradable self-expanding stents are an emerging alternative to standard biliary stents as the development of endoscopic insertion devices advances. The world's first biodegradable biliary and pancreatic stent is developed by Q3 Medical Devices Ltd which is named as ARCHIMEDES stent. The product obtained CE approval in Europe in Jun 2018. ARCHIMEDES stent is made of biodegradable materials which decreases re-interventions that are common with current stents and may eliminate the need for a stent removal procedure which is almost always performed for plastic and metal stents currently. Q3 Medical signed a 6-year contract with Medtronic in May 2019 for distribution of ARCHIMEDES stent in Western Europe, US and Japan.

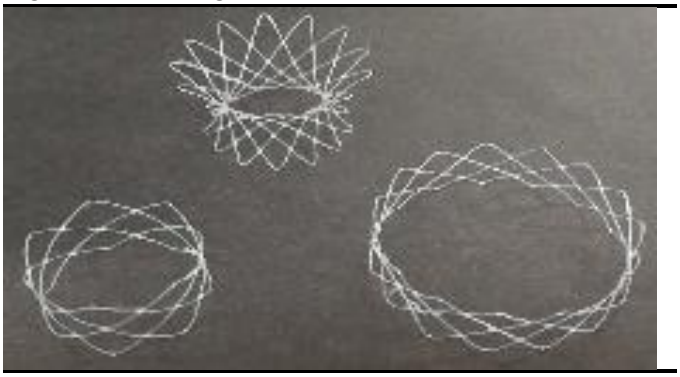
Kindly Medical's subsidiary, Shanghai Qimu, focuses on the development of biodegradable sinus stents and biliary stents, with a leading position in the area of non-vascular biodegradable stents. These two products are expected to be launched in the market in 2022E.

Figure 44: Illustration of ERCP



Source: VGM Gastro Centre, CMBIS

Figure 45: Biodegradable stents



Source: Company, CMBIS

Shanghai Healing: tapping the booming demand in TAVR market

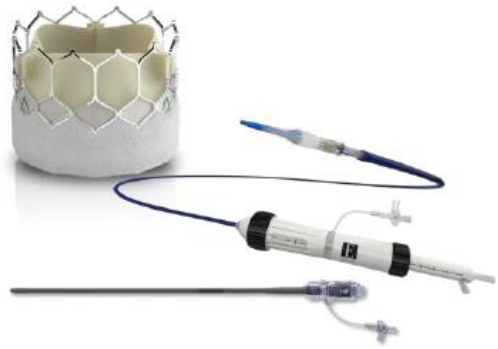
Shanghai Healing is currently developing interventional valves for aortic valve diseases. The interventional valve is a balloon-expandable valve implantation product used to treat both aortic stenosis and aortic regurgitation.

There is an increasing demand for valve replacement in rheumatic heart disease patients. Aortic stenosis (AS) is a narrowing of the aortic valve, obstructing blood flow from the left ventricle to the aorta during systole. Major causes of AS include congenital bicuspid valve (先天性二叶式瓣), rheumatic fever and idiopathic degeneration sclerosis and calcification which is highly related to aging. AS is the most common heart valve disease among the elderly who are over 65 years old with degenerative aortic valve disease. The prevalence of AS in China reached 4.2mn in 2018, with a CAGR of 1.9% from 2014 to 2018, according to F&S. F&S estimates AS patients to reach 4.6mn in 2023E, driven by increasing rheumatic valvular heart disease.

There are three common AS procedures, balloon valvotomy (瓣膜球囊扩张术), surgical aortic valve replacement (SAVR, 外科手术置换主动脉瓣膜) and transcatheter aortic valve replacement (TAVR, 经导管主动脉瓣膜置换术). Balloon valvotomy is used primarily among children and very young adults with congenital AS. SAVR is a common choice for patients less than 75 years old with surgical risk. TAVR benefits patients with inoperable AS and patients older than 75 years old with high surgical risks. Some data shows that TAVR also benefits patients with medium surgical risk.

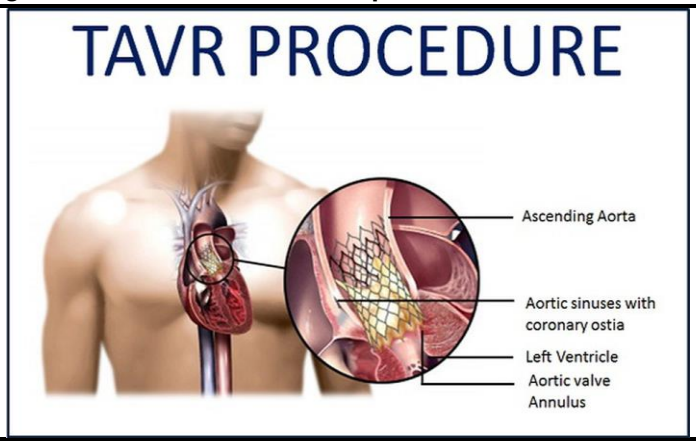
Traditional surgical aortic valve replacements require doctors to make a big incision on patients' chests and open their hearts to put the prosthetic valve inside manually, which poses risks of wrong positioning of valve and loss of blood. TAVR is a minimally invasive surgery with short operation time.

Figure 46: Transcatheter aortic valve system



Source: Edward Lifesciences, CMBIS

Figure 47: Illustration of TAVR procedure

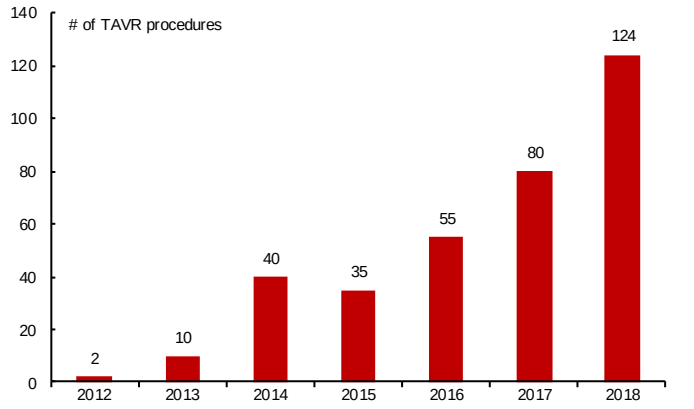


Source: The Hindu, CMBIS

According to the "2017 Chinese Heart Surgery and Cardiopulmonary Data White Paper" (2017 中国心外科手术和体外循环数据白皮书) released by the Chinese Society of Biomedical Engineering, as of 2017, 708 hospitals in China have performed cardiac surgeries and conducted a total of 65,749 cardiac valve surgeries, up 6.6% YoY.

According to the data from the Chinese Society of Cardiothoracic and Vascular Anaesthesiology, as of Mar 2018, more than 20 hospitals in China have conducted approximately 1,200 TAVR surgeries. According to the publication named "Cardiovascular surgery outcomes 2018" released by Fuwai Hospital which performed the largest number of cardiovascular surgeries in China, the hospital conducted 124 TAVR procedures in 2018 and the number has risen rapidly in recent years.

Figure 48: Number of TAVR procedures performed by Fuwai Hospital



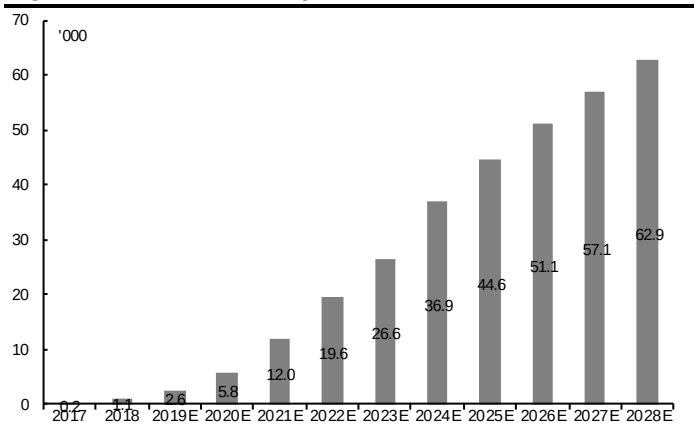
Source: Fuwai Hospital, CMBIS

According to the publication named "Cardiovascular surgery outcomes 2018" released by Fuwai Hospital, mechanical valve still accounted for the majority type of artificial valve. However, in recent years, the proportion of bioprosthetic aortic valve increased significantly.

According to Bairen Medical's prospectus, bio-valve accounted for 75% of the total number of artificial valves in the global market compared to 20-25% in the China market. In our view, bio-valves in China will quickly substitute mechanical valves thanks to improving affordability of bio-valves.

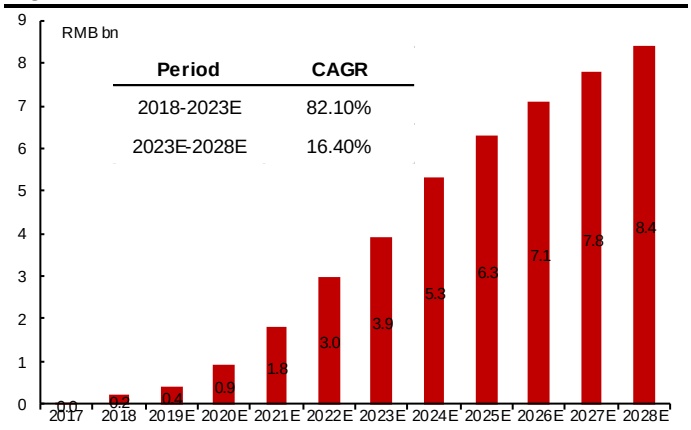
F&S forecasts the number of TAVR procedures to surge from approximately 1,000 in 2018 to 26,600 in 2023E, at a CAGR of 94.6%. The market size of TAVR in China was RMB41.4mn in 2017. We believe Chinese TAVR market is now at the early phase of penetration due to: 1) TAVR devices being sold at expensive prices, 2) limited medical insurance reimbursement coverage for TAVR devices, and 3) time needed for education of physicians about conducting TAVR procedures. F&S forecasts Chinese TAVR market to reach RMB3.9bn in 2023E thanks to the rising number of qualified hospitals for TAVR procedures.

Figure 49: No. of TAVR procedures in China



Source: F&S, CMBIS

Figure 50: Market size of TAVR in China



Source: F&S, CMBIS

To date, NMPA has only approved three transcatheter aortic valves. VenusA-Valve developed by Venus Medtech which obtained approval from the NMPA in Apr 2017, becoming the first commercialized transcatheter aortic valve. J-Valve developed by Suzhou JC Medical was the second product which received NMPA approval. VitaFlow developed by MicroPort was approved by NMPA in Jul 2019. We expect Kindly Medical's transcatheter aortic valve to be launched in China in 2024E.

Financial Analysis

Revenue to show 41.3% CAGR in FY18-21E

Kindly Medical has kept strong earnings growth momentum in 1H19. Based on the Company's 2019 interim financial report, its revenue increased by 41.2% YoY from RMB95.7mn in 1H18 to RMB135.1mn in 1H19, and net profit rose by 32.2% YoY from RMB35.1mn in 1H18 to RMB46.4mn in 1H19. Net cash generated from operating activities reached RMB42.7mn in 1H19.

We expect Kindly Medical's total revenue to grow 42%/ 45%/ 37% YoY in FY19/20/21E, respectively, representing 41.3% CAGR in FY18-21E, mainly driven by sales of cardiovascular devices.

Interventional medical devices have the largest revenue share of 87% in FY18 and are estimated to grow at 48%/ 49%/ 40% YoY to RMB262mn/ RMB391mn/ RMB545mn respectively in FY19/20/21E, respectively, mainly driven by strong existing products and new product launches.

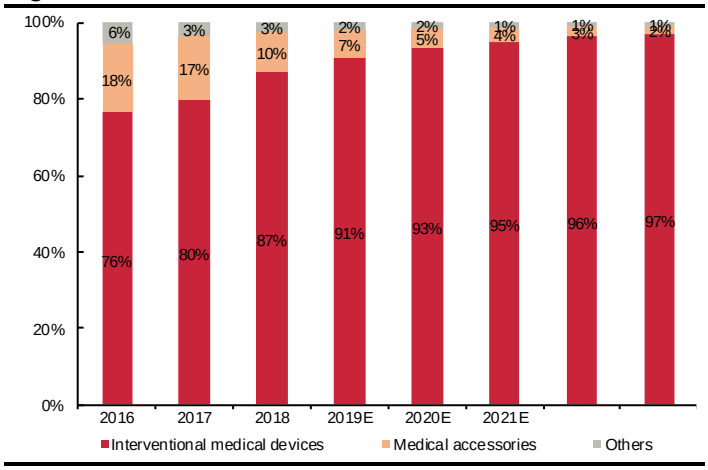
We take risk-adjusted revenue for pipeline products. We also take PoS of 90% for products which have already filed New Drug Applications (NDAs). For products not being required to conduct clinical trials, we assume 50-60% probability of success (PoS) based on different development stages. For products required for clinical trials, we expect 30-40% PoS based on different development stages.

Figure 51: Historicalrevenue and revenue forecasts

(YE 31 Dec) (RMB mn)	2016	2017	2018	2019E	2020E	2021E	2022E	2023E
Interventional medical devices	81	110	177	262	391	545	741	983
YoY		*35%*	*61%*	*48%*	*49%*	*40%*	*36%*	*33%*
Cardiovascular device	81	109	176	261	384	521	698	910
YoY		*34%*	*61%*	*49%*	*47%*	*36%*	*34%*	*31%*
Neurovascular device	0	0	0	0	5	20	34	53
YoY						*300%*	*73%*	*55%*
Digestive device	0	0	0	0	0	3	8	18
YoY						*567%*	*171%*	*130%*
Orthopaedics and other devices	0	1	1	1	1	2	2	2
YoY		*79%*	*25%*	*15%*	*14%*	*12%*	*11%*	*10%*
Medical accessories	19	23	21	20	20	21	22	23
YoY		*24%*	*-11%*	*-1%*	*0%*	*3%*	*3%*	*4%*
Others	6	5	6	6	7	7	8	8
YoY		*-27%*	*23%*	*10%*	*9%*	*8%*	*7%*	*7%*
Total Revenue	**106**	**138**	**203**	**289**	**418**	**573**	**771**	**1,014**
YoY		*29%*	*48%*	*42%*	*45%*	*37%*	*34%*	*32%*

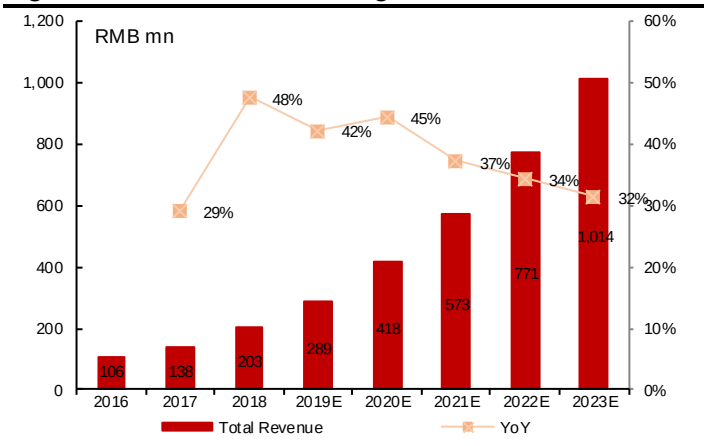
Source: Company data, CMBIS estimates

Figure 52: Revenue breakdown



Source: Company data, CMBIS estimates

Figure 53: Total revenue and growth forecasts



Source: Company data, CMBIS estimates

Net profit to show 49.5% CAGR in FY18-21E

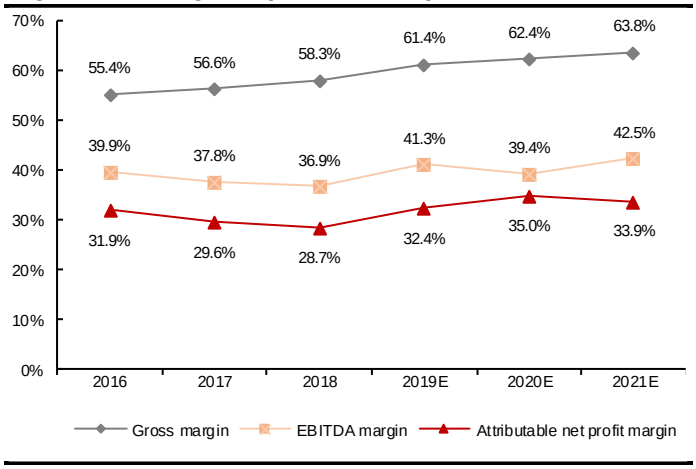
We expect Kindly Medical's net profit to grow at 61%/ 56%/ 33% to RMB94mn/ RMB146mn/ RMB194mn in FY19/20/21E, respectively, driven by total revenue growth and margin expansion. Attributable NPM will maintain at 32%/ 35%/ 34% in FY19/20/21E, respectively, due mainly to the upcoming launches of high-margin products and additional interest income.

Figure 54: P&L forecasts

(YE 31 Dec) (RMB mn)	2016	2017	2018	2019E	2020E	2021E
Revenue	**106**	**138**	**203**	**289**	**418**	**573**
YoY		*29%*	*48%*	*42%*	*45%*	*37%*
Cost of sales	(47)	(60)	(85)	(112)	(157)	(208)
% of revenue	*-45%*	*-43%*	*-42%*	*-39%*	*-38%*	*-36%*
Gross profit	**59**	**78**	**118**	**177**	**261**	**366**
GPM	*55%*	*57%*	*58%*	*61%*	*62%*	*64%*
Other income (excl. finance income)	5	0	6	10	10	10
% of revenue	*0*	*0%*	*3%*	*3%*	*2%*	*2%*
Distribution costs	(6)	(9)	(18)	(23)	(42)	(54)
% of revenue	*0*	*-6%*	*-9%*	*-8%*	*-10%*	*-10%*
Administrative expenses	(10)	(11)	(21)	(28)	(42)	(56)
% of revenue	*0*	*-8%*	*-10%*	*-10%*	*-10%*	*-10%*
Research and development expenses	(11)	(13)	(22)	(30)	(46)	(60)
% of revenue	*0*	*-9%*	*-11%*	*-11%*	*-11%*	*-11%*
Profit from operations	36	45	64	106	141	205
% of revenue	*0*	*33%*	*32%*	*37%*	*34%*	*36%*
(Recognition)/ reversal of impairment losses	(0)	0	0	0	0	0
% of revenue	*0*	*0%*	*0%*	*0%*	*0%*	*0%*
Net finance cost	3	3	2	3	16	15
% of revenue	*0*	*2%*	*1%*	*1%*	*4%*	*3%*
Profit before taxation	39	48	66	100	158	220
% of revenue	*0*	*35%*	*33%*	*35%*	*38%*	*38%*
Income tax	(5)	(7)	(8)	(13)	(20)	(27)
Tax rate	*-14%*	*-15%*	*-12%*	*-13%*	*-13%*	*-13%*
Profit for the year	34	41	58	88	138	192
Minority interests	0	0	0	6	8	2
Net profit attributable to shareholders	**34**	**41**	**58**	**94**	**146**	**194**
NPM	*0*	*30%*	*29%*	*32%*	*35%*	*34%*
YoY		*20%*	*43%*	*61%*	*56%*	*33%*

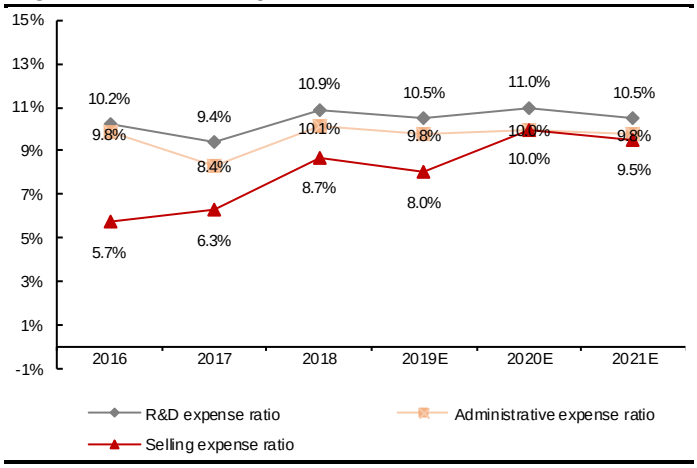
Source: Company data, CMBIS estimates.

Figure 55: Margin expected to improve onwards



Source: Company data, CMBIS estimates

Figure 56: SG&A expenses forecasts



Source: Company data, CMBIS estimates

GPM expected to gradually improve onwards. Given that high-margin interventional medical devices have contributed higher proportion of sales, Kindly Medical's blended gross margin improved significantly from 55.4% in 2016 to 58.3% in 2018. We forecast GPM to be 61%/ 62%/ 64% in FY19/20/21E, respectively, due mainly to launch of high margin products and economies of scale.

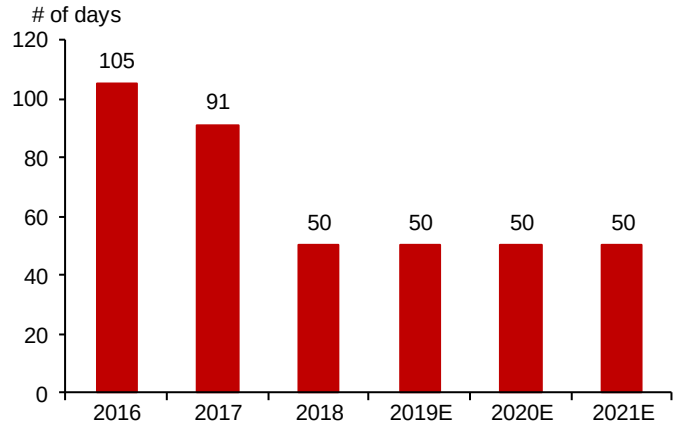
CAPEX to stay high for capacity expansion

Kindly Medical's average utilization rate of production facilities for its top five selling products was 93.3%/ 96.0%/ 96.0% in 2016/2017/2018, respectively. It has increased annual actual production time to meet increased order demand. Kindly Medical plans to establish a new R&D center and an additional production facility in Jiading, Shanghai to meet growing market demand. We expect total CAPEX to be RMB150mn/ RMB200mn/ RMB150mn in FY19/20/21E, respectively, for production facility expansion and equipment maintenance.

Strong operating cash flows

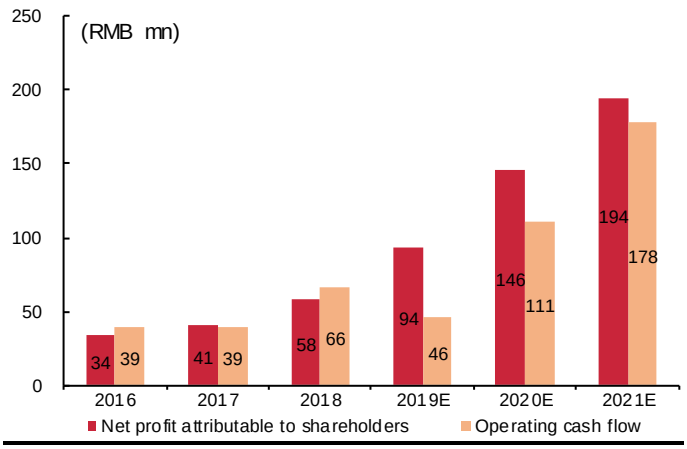
Thanks to the Kindly Medical's strong bargaining power, Kindly Medical usually requires most of its distributors to make full prepayment for the products before shipment. Hence, Kindly Medical enjoys short trade receivables turnover days and strong operating cash flows. We saw that trade receivables turnover days declined from 91 days in FY17 to 50 days in FY18, which further declined to 36 days in the first four months of 2019, which was attributable to the enhanced efforts to collect receivables from customers. Kindly Medical's operating cash flows was also consistent with the net profit.

Figure 57: Improving trade receivables turnover days



Source: Company data, CMBIS estimates

Figure 58: Strong operating cash flows



Source: Company data, CMBIS estimates

Financial Statements

Income statement

YE 31 Dec (RMB mn)	FY17A	FY18A	FY19E	FY20E	FY21E
Revenue	**138**	**203**	**289**	**418**	**573**
Interventional medical devices	110	177	262	391	545
Medical accessories	23	21	20	20	21
Others	5	6	6	7	7
Cost of sales	(60)	(85)	(112)	(157)	(208)
Gross profit	**78**	**118**	**177**	**261**	**366**
Other income (without finance cost)	0	6	10	10	10
Selling expenses	(9)	(18)	(23)	(42)	(54)
Administrative expenses	(11)	(21)	(36)	(42)	(56)
R&D expenses	(13)	(22)	(30)	(46)	(60)
Operating profit	**45**	**64**	**98**	**141**	**205**
(Recognition)/ reversal of impairment losses	0	0	0	0	0
Finance costs, net	3	2	3	16	15
Pre-tax profit	**48**	**66**	**100**	**158**	**220**
Income tax	(7)	(8)	(13)	(20)	(27)
Profit for the year	**41**	**58**	**88**	**138**	**192**
Minority interests	0	0	6	8	2
Attributable net profit	**41**	**58**	**94**	**146**	**194**

Cash flow summary

YE 31 Dec (RMB mn)	FY17A	FY18A	FY19E	FY20E	FY21E
Profit before tax	**48**	**66**	**100**	**158**	**220**
D&A	7	9	11	7	24
Change in working capital	(8)	2	(50)	(31)	(36)
Payment for interest element of lease liabilities	0	(2)	(2)	(2)	(2)
Tax paid	(8)	(9)	(13)	(20)	(27)
Net cash from operating activities	**39**	**66**	**46**	**111**	**178**
Capex	(10)	(33)	(90)	(150)	(200)
Acquisition of subsidiaries	0	(1)	0	0	0
Other investing activities	49	100	136	261	378
Net cash from investing activities	**39**	**66**	**46**	**111**	**178**
Net proceeds from shares issued	0	190	787	0	0
Bank borrowing	0	0	0	0	0
Capital element of lease liabilities	0	(1)	0	0	0
Dividends paid to equity shareholders	0	(67)	(33)	(51)	(68)
Net cash from financing activities	**0**	**122**	**755**	**(51)**	**(68)**
FX changes	(3)	3	0	0	0
Net change in cash	82	149	716	(71)	(73)
Cash at the beginning of the year	64	147	298	1014	943
Cash at the end of the year	**144**	**298**	**1014**	**943**	**870**

Balance sheet

YE 31 Dec (RMB mn)	FY17A	FY18A	FY19E	FY20E	FY21E
Non-current assets	**43**	**134**	**211**	**338**	**499**
PP&E	38	60	139	269	433
Right-of-use assets	0	58	55	52	49
Prepayment of lease	0	10	10	10	10
Intangible assets	0	1	1	1	1
Other non-current assets	5	6	8	6	6
Current assets	**190**	**348**	**1,103**	**1,069**	**1,039**
Inventories	29	39	46	65	85
Trade and other receivables	11	7	40	58	80
Other current assets	2	3	3	3	3
Cash and cash equivalents	147	298	1,014	943	870
Current liabilities	**27**	**40**	**30**	**36**	**42**
Trade and other payables	18	24	14	20	26
Contract liabilities	7	12	12	12	12
Lease liabilities	0	3	3	3	3
Deferred income	0	0	0	0	0
Current taxation	1	1	1	1	1
Non-current liabilities	**5**	**61**	**61**	**61**	**61**
Lease liabilities	0	57	57	57	57
Deferred income	5	3	3	3	3
Total net assets	**200**	**381**	**1,224**	**1,311**	**1,435**
Minority interest	0	9	3	(5)	(7)
Shareholders' equity	**200**	**372**	**1,220**	**1,315**	**1,442**

Key ratios

YE 31 Dec	FY17A	FY18A	FY19E	FY20E	FY21E
Sales mix (%)					
Interventional medical devices	80	87	91	93	95
Medical accessories	17	10	7	5	4
Others	3	3	2	2	1
Total	100	100	100	100	100
Profit & loss ratios (%)					
Gross margin	57	58	61	62	64
EBITDA margin	38	37	41	39	43
Pre-tax margin	35	33	37	38	38
Net margin	30	29	32	35	34
Effective tax rate	15	12	13	13	13
Balance sheet ratios					
Current ratio (x)	7	9	37	30	25
Trade receivables turnover days	91	50	50	50	50
Trade payables turnover days	43	43	45	45	45
Net debt to total equity ratio (%)	Net cash	Net cash	Net cash	Net cash	Net cash
Returns (%)					
ROE	23	20	11	11	14
ROA	20	16	10	10	13
Per share data					
EPS (RMB)	N/A	N/A	0.56	0.88	1.17
DPS (RMB)	N/A	N/A	0.20	0.31	0.41
BVPS (RMB)	N/A	N/A	7.37	7.89	8.64

Source: Company data, CMBIS estimates

Valuation

(1) DCF valuation derived TP of HK$39.5

Given Kindly Medical's strong cash flow and the upcoming pipeline products, we believe DCF would be a reasonable valuation method. We derive TP of HK$39.5 based on an 8-year DCF valuation (WACC: 10.42%, terminal growth rate: 3.0%), representing FY20E/21E PER of 40x/ 30x. We employed a WACC of 10.42%, which is higher than that of HK listed peers due to relatively smaller market cap and terminal growth rate of 3%, which is relatively conservative compared to high-growth medical device companies.

Figure 59: Base case valuation on risk-adjusted DCF valuation

DCF Valuation (in RMB mn)	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E
EBIT	141	205	292	400	479	566	656	748
Tax rate	13%	13%	13%	13%	13%	13%	13%	13%
EBIT*(1-tax rate)	124	179	255	350	419	495	574	655
+ D&A	23	39	60	76	91	107	124	142
- Change in working capital	(31)	(36)	(44)	(54)	(65)	(76)	(88)	(101)
- Capex	(150)	(200)	(150)	(150)	(150)	(150)	(150)	(150)
FCFF	(34)	(18)	121	221	296	376	460	545
Terminal value								7,574
FCF + Terminal value	(34)	(18)	121	221	296	376	460	8,119
Discount factor	100%	91%	82%	74%	67%	61%	55%	50%
PV of FCF	(34)	(16)	99	164	199	229	254	4,058
% change in EBIT					20.0%	18.0%	16.0%	14.0%
% change in D&A, working capital, Capex					20.0%	18.0%	16.0%	14.0%

PV of enterprise value (RMB mn)	4,953
Net debt (RMB mn)	(883)
Minority interests (RMB mn)	(5)
Equity value (RMB mn)	5,841
Equity value (HK$ mn)	6,563
# of shares outstanding (mn)	166
Price per share (HK$)	**39.5**
Terminal growth rate	**3.0%**
WACC	**10.42%**
Cost of Equity	13.0%
Cost of Debt	5.0%
Equity Beta	0.9
Risk Free Rate	3.0%
Market Risk Premium	11.5%
Target Debt to Asset ratio	30.0%
Effective Corporate Tax Rate	12.5%

Source: CMBIS estimates

Figure 60: Sensitivity analysis (HK$)

	WACC				
Terminal growth rate	**9.4%**	**9.9%**	**10.4%**	**10.9%**	**11.4%**
2.0%	41.3	38.6	36.3	34.2	32.3
2.5%	43.4	40.4	37.8	35.5	33.5
3.0%	45.9	42.5	**39.5**	37.0	34.7
3.5%	48.7	44.8	41.5	38.7	36.2
4.0%	52.0	47.6	43.8	40.6	37.8

Source: Company data, CMBIS estimates

(2) Valuation check with peers

The average FY20E PER of HK listed medical device peers was 28.2x. Our TP for Kindly Medical represents FY20E PER of 40x. We expect Kindly Medical to deliver 41% sales CAGR and 50% net profit CAGR in FY18-21E, given its leading position in the cardiovascular interventional device market, rich pipeline and moderate competition.

Figure 61: Peers' valuation

		Mkt cap	PER(x)		PBR(x)		EV/EBITDA (x)		ROE(%)		EPS CAGR	PEG
Company	Ticker	HK$mn	FY19E	FY20E	FY19E	FY20E	FY19E	FY20E	FY19E	FY20E	FY18-21E	FY19E
H share												
AK Medical	1789 HK	10,030	43.8	33.5	8.5	7.1	N/A	N/A	26.5	28.4	33%	1.3
Chunli Medical	1858 HK	6,882	32.2	21.7	7.1	5.4	28.6	21.1	25.9	29	38%	0.8
Weigao Group	1066 HK	41,379	19.8	16.8	2.3	2.1	13.1	12.1	12	12.9	20%	1
Microport	853 HK	14,980	42.4	39.6	3.7	3.5	19	20.5	10	9.2	35%	1.2
Lifetech	1302 HK	6,610	37	29.2	N/A	N/A	N/A	N/A	11	12	21%	1.7
		Average	**35.1**	**28.2**	**5.4**	**4.5**	**20.2**	**17.9**	**17.1**	**18.3**	**30%**	**1.2**

Source: Bloomberg (As at 3 Jan 2020)

Investment Risks

Failure to develop and market new and advanced products in a timely manner

Future sales growth depends on new products. Kindly Medical may not be able to successfully market new products or the end customers may not be receptive to those new products.

Potential price erosion pressure from enhanced procurement

The State Council issued the "Reform Plan on the Regulation of High-Value Medical Device" on 31 Jul 2019 and reiterated the policy of implementation of zero mark-up of medical device by the end of 2019, to explore centralized procurement and volume-based procurement and to unify the classification and code of high-value medical devices by the end of 2020, which all exert pressure on the listing price of medical devices, especially for medical stent and orthopedic products.

Kindly Medical may also experience reduced pricing power and gross profit margin erosion from the existing products given the mature market. The growing pricing pressure may arise in the future due to enhanced procurement policies. We saw that centralized procurement of medical device has been implemented in some provinces (Fujian, Shandong, Chongqing, Shaanxi, Zhejiang and Jingjinji region). Those centralized procurement tenders resulted in significant price cut of 10-50%, especially for the imported implantable medical devices. However, the price erosion pressure to be experienced by Kindly Medical may not be significant since the premium of the ex-factory price and the ultimate retail price of its products is usually over 100%, leaving much room for price cut for distributors. The price erosion may also be digested by distributors and do not affect the ex-factory price for manufacturers. Besides, Kindly Medical continuously invests in the new product development to maintain or improve the average selling price and overall profitability of its product portfolio.

Additional cost incurred from the rollout of "two-invoice" system

The rollout of "two-invoice" system in medical devices will potentially incur additional costs for Kindly Medical and also bring some benefits, such as: 1) accelerating integration and concentration of sales channels by strengthening cooperation with large distribution companies to achieve strong alliances, 2) increasing the profit margin as the distribution channels will be shortened, and 3) increasing sales and labor costs for market expansion and customer maintenance. Kindly Medical's products have been distributed in four provinces, where have formulated relevant systems on the "two-invoice system", including Anhui, Fujian, Shanxi and Shaanxi. In 2016, 2017, 2018 and the first four months of 2018/2019, the Company's aggregate sales to these four provinces amounted to RMB3.0mn, RMB6.1mn, RMB10.9mn and RMB3.0mn/RMB6.1mn, respectively, representing 2.8%, 4.5%, 5.4% and 5.0%/7.0% of the Company's total revenue for the corresponding periods.

On 5 Dec 2019, National Healthcare Security Administration claimed that due to the non-standard features, the complexity of after-sales services and clinical use of high-value medical devices, the implementation of "two-invoice" system of high-value medical device will be reconsidered. We believe, the "two-invoice" system may not roll out nationwide in the short term.

Appendix 1: Company Profile

Figure 62: Management profile

Name	Age	Position	Roles and Responsibilities	Date of Joining	Date of First Appointment	Relationship with other directors and senior management
Dr. Liang Dongke (梁栋科)	42	Chairman of the Board, Executive Director and general manager	In charge of overall management, business, strategic development, and scientific research and development.	7/6/2006	7/6/2006	Husband of Dr. Song Yuan (宋媛)
Mr. Wang Cailiang (王彩亮)	50	Executive Director and deputy general manager	In charge of product registration, quality control system, and advancement of internal control.	25/6/2010	25/6/2010	None
Dr. Song Yuan (宋媛)	41	Deputy general manager, secretary to the Board and joint company secretary	In charge of information disclosure, investor relations, equity investment and convening board and shareholder meetings	25/5/2017		Wife of Dr. Liang Dongke (梁栋科)
Ms. Zhao Yan (赵燕)	45	Finance controller	In charge of management of financial affairs	3/4/2007		

Source: Company data

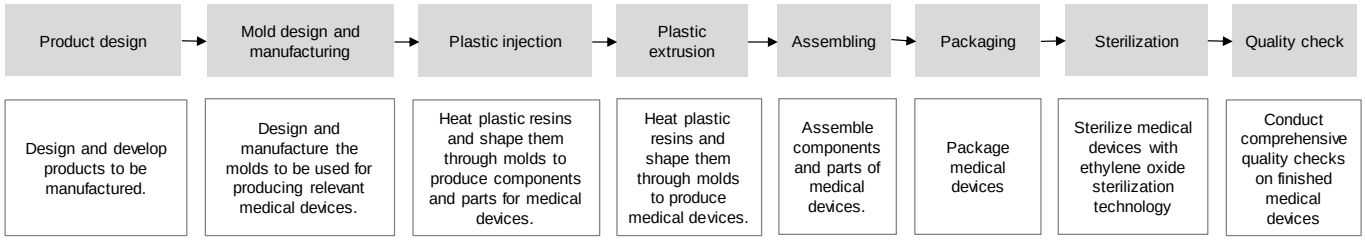
Figure 63: Awards

Year	Award/recognition	Awarding/Recognition Organization
2018	Shanghai High-tech Achievement Transformation Project (上海高新技术成果转化项目)	Shanghai Municipal Service Center for Transforming High-tech Achievements (上海市高新技术成果转化服务中心)
2017	Little Giant of Science and Technology of Shanghai (上海市科技小巨人)	Shanghai Science and Technology Committee (上海市科学技术委员会)
2016	Shanghai "Specialized, Refined, Characterized and Innovative" Enterprise (上海市"专、精、特、新"企业)	Shanghai Municipal Commission of Economy and Informatization (上海市经信委)

Source: Company data

Appendix 2: Production Procedure

Figure 64: Production procedure



Source: Company data

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