China Digital Health and Wellness Market

Independent Market Research

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Frost & Sullivan
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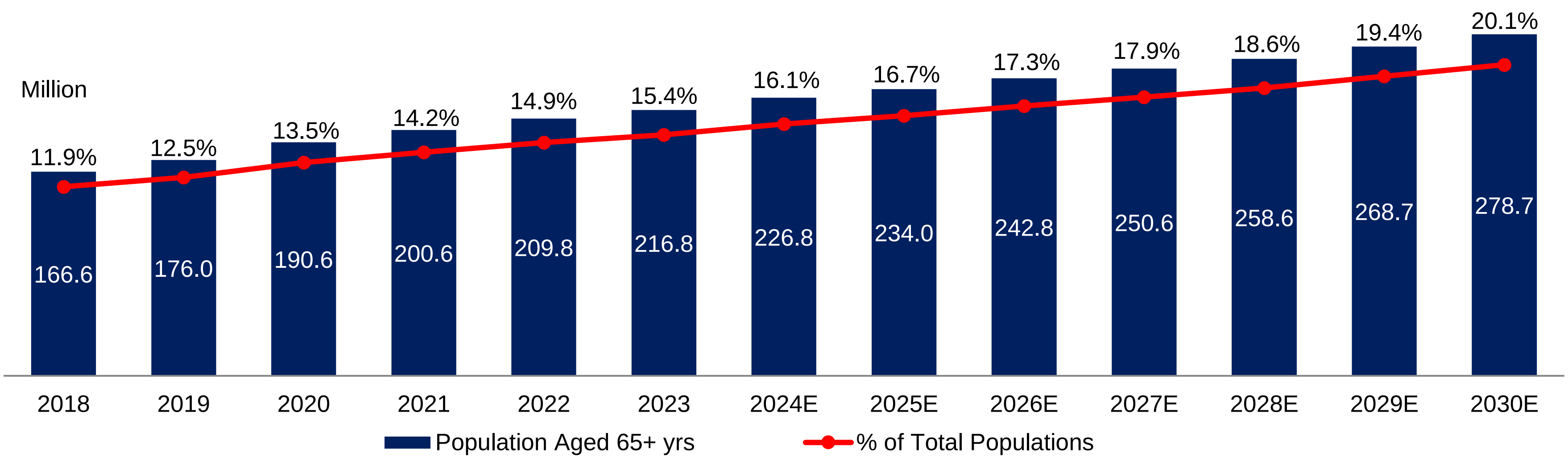
China Aging Population Trend, 2018-2030E

- With the implementation of the 'One Child Policy' and increasing life expectancy, China has entered an aging society. From 2018 to 2023, the population is aging rapidly in China with people aged above 65 growing at a CAGR of 5.4%. According to the National Bureau of Statistics of China (NBSC), the number of individuals aged above 65 years old is estimated to be 216.8 million in 2023. This number is expected to reach 278.7 million by 2030, representing a CAGR of 3.6% from 2027 to 2030.
- China's demographic shift offers immense opportunities for healthcare market, as elder people generally have a greater need for medications and scientific disease management.

China Aging Population Trend, 2018-2030E

Period	CAGR
2018-2023	5.4%
2023-2027E	3.7%
2027E-2030E	3.6%



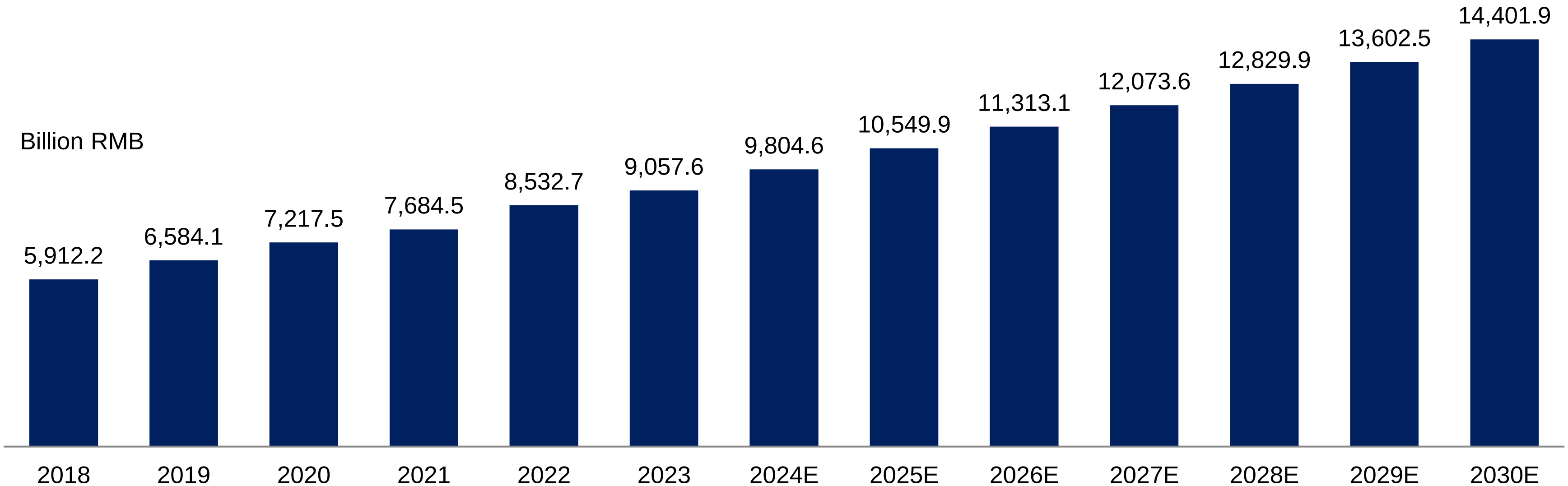
Source: NBSC, Frost & Sullivan Analysis

China Healthcare Expenditure, 2018-2030E

- The total healthcare expenditure of China has experienced steady growth. From 2018 to 2023, the total healthcare expenditure of China has increased from RMB5,912.2 billion to RMB9.057.6 billion, representing a CAGR of 7.2%. Furthermore, the rapid increase in China's healthcare expenditures will continue in the near future. The total healthcare expenditure of China is forecasted to reach RMB14,401.9 billion by 2030, representing a CAGR of 7.2% from 2024 to 2027 and 6.1% from 2027 to 2030.

China Total Healthcare Expenditure, 2018-2030E

Period	CAGR
2018-2023	8.9%
2024E-2027E	7.2%
2027E-2030E	6.1%



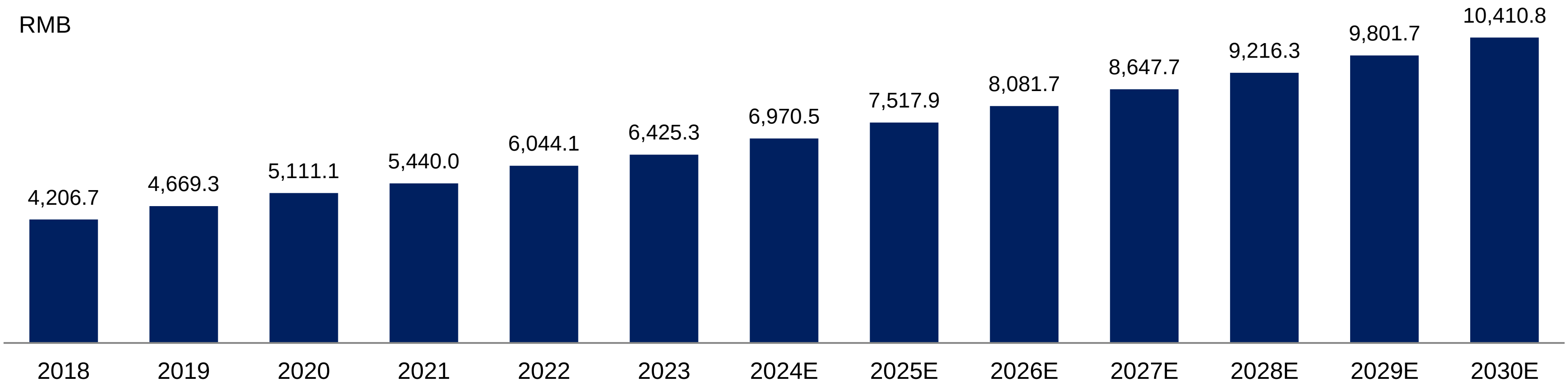
Source: NHFPC, WHO, Frost & Sullivan Analysis

Per Capita Healthcare Expenditure in China, 2018-2030E

- The per capita healthcare expenditure in China has grown rapidly in recent years.
- According to information from the National Bureau of Statistics and EIU, from 2018 to 2023, the per capita healthcare expenditure has grown from RMB4,206.7 to RMB6.425.3, representing a CAGR of 8.8% in this period. And the per capita healthcare expenditure is expected to reach RMB8647.7 in 2027, representing a CAGR of 7.5% from 2024 to 2027 and to RMB10.410.8 in 2030 with a CAGR of 6.4 from 2027 to 2030.

Per Capita Healthcare Expenditure in China, 2018-2030E

Period	CAGR
2018-2023	8.8%
2024E-2027E	7.5%
2027E-2030E	6.4%

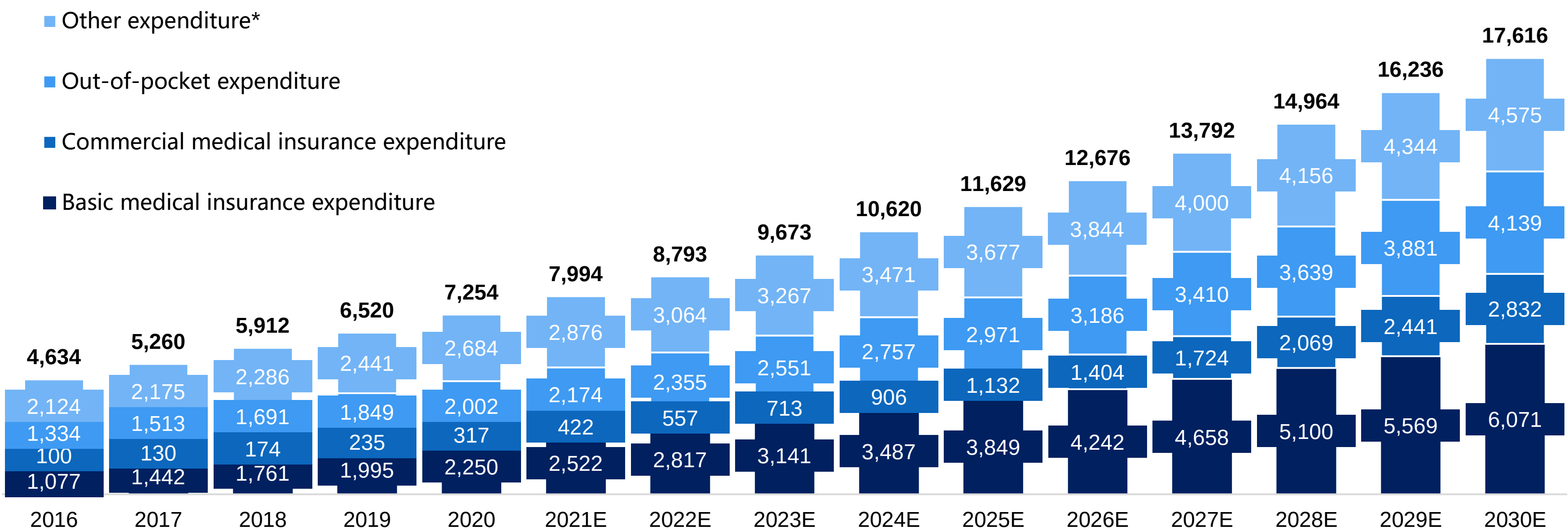


Source: NHFPC, WHO, Frost & Sullivan analysis

Breakdown of China Total Healthcare Expenditure, 2016-2030E

- In 2020, China ranked 2nd largest globally in terms of total healthcare expenditure, amounting RMB 7,254 billion in total healthcare expenditure in the same year, compared to RMB 4,634 billion in 2016, a CAGR of 11.9% is presented over this period. The total healthcare expenditure is expected to further grow to RMB11,629 billion in 2025 with a CAGR of 9.9% from 2020 to 2025. With the increase of health awareness and personal disposable income, the total expenditure is projected to boost up to RMB17,616 billion in 2030 with a CAGR of 8.7% from 2025 to 2030.

Period	CAGR				
	Total	Basic	Commercial	Out-of-pocket	Others
2016-2020	11.9%	20.0%	33.4%	10.7%	6.0%
2020-2025E	9.9%	11.3%	29.0%	8.2%	6.5%
2025E-2030E	8.7%	9.5%	20.1%	6.9%	4.5%



*Note: Other expenditure includes government health expenditures (non-basic medical insurance expenditures, etc.), and social medical expenditures (social donation assistance, administrative fee income, etc.).

Source: Frost & Sullivan analysis

Chinese Healthcare Service Systems, 2022

- At present, China's healthcare providers consist of hospitals, primary healthcare institutions, and other healthcare institutions, among which hospitals play the most important role.
- There were 36,976 hospitals in China by the end of 2022. With regards to the ownership, China's hospitals are mainly categorized as public hospitals and private hospitals. With regards to the specialization, China's hospitals consist of general hospitals, specialized hospitals, traditional Chinese medicine (TCM) hospitals, and other hospitals. With regards to the tier of hospitals, China's hospitals are categorized as Class I hospitals, Class II hospitals and Class III hospitals. Each tier has three levels – A, B and C, for example, Grade A Primary hospital, Grade B Primary hospital. Class and levels are evaluated according to the hospital's size, technique level, medical equipment, management level, service quality and etc.

Chinese Healthcare Service System, 2022

Primary Healthcare Institutions (979,768)

- Community Health Centers/Stations (社区卫生服务中心/站) (36,448)
- Rural Health Centers (乡镇卫生院) (33,917)
- Village Clinics (村卫生室) (587,749)
- Others (321,654)

Hospitals (36,976)

- Public Hospitals (11,746)
- Private Hospitals (25,230)

- General Hospitals (20,190)
- Specialized Hospitals (10,000)
- TCM Hospitals (4,779)
- Other Hospitals (2,007)

- Class III Hospitals (3,523)
- Class II Hospitals (11,145)
- Class I Hospitals (12,815)
- Unrated Hospitals (9,493)

Other Healthcare Institutions (16,174)

- Center of Disease Control (3,386)
- Women &Children Care Institutions (3,031)
- Preventive Institutions Of Special Disease (856)
- Others (8,901)

Source: NHFPC, Frost & Sullivan Analysis

Overview of Healthcare Reform in China

- In early 2009, the Central Committee of the Chinese Communist Party along with the Chinese State Council announced a comprehensive healthcare reform initiative through a program titled “Opinions on Deepening Pharmaceutical and Healthcare System Reform” (关于深化医药卫生体制改革的意见). The program primarily targets four fundamental healthcare systems in China.

Public Health Services System

This system focuses on preventing disease and promoting health. The public health services system will provide services such as immunizations, regular physical check-ups (for senior citizens over 65 years old and children under three years old), pre-natal and post-natal check-ups for women, prevention of infectious or chronic diseases and other preventative and fitness programs.

Public Medical Insurance System

This system covers drugs and medical treatments for the majority of the population. The healthcare reform plan will retain the framework of the current public medical insurance schemes under the national program, but will be expanded to cover more of the population and increase the scope of treatments, raise the cap on claim payments and cover more claims at higher percentages.

Public Health Delivery System

One of the primary goals of the plan is to build more healthcare facilities and to improve the training of healthcare professionals. Beyond additional public wellness centers, the reform plan aims to place a medical clinic in every village and a hospital in every prefecture by 2011.

Drug Supply System

This system regulates pricing and how drugs will be procured, prescribed and dispensed at healthcare facilities. The healthcare reform plan will focus on pricing, procurement, prescription and dispensing of essential drugs.

Healthcare Reform

Source: Government Notice, Frost & Sullivan Analysis

Overview of Healthcare Reform in China (Cont'd)

The ultimate goal of healthcare reform: everyone can have access to and afford basic healthcare services

The 13th Five-year Plan

In December 2016, the 13th five-year plan for medical development was released, proposing a new round of healthcare reform plan:

- Further improve the medical system, including primary-level medical and health services, hierarchical diagnosis and treatment, medical quality and safety management, and vigorously develop nongovernmental hospitals.
- Establish a primary universal medical insurance system, accelerate the development of commercial health insurance, promote payment system reform, and improve the drug supply security system.
- Reform the pharmaceutical system, encourage the innovation of drugs and medical devices, accelerate the evaluation of the consistency of the quality and efficacy of generic drugs, implement the 'two-invoice' reform of drug procurement, and improve the drug price negotiation mechanism.
- Strengthen maternal and child health care and birth services, develop elderly health services, promote the health of targeted populations such as the poor, and improve family planning policies.

Medium- and Long-term Goals by 2020

In the long run, healthcare reform will concentrate on public hospitals, which is a core part of the medical system. The reform will solve current problems by improving the medical insurance system:

- Provide all citizens with 100% public health care by 2020.
- Improve the efficiency of public hospitals by using effective management methods and advanced technologies.
- Increase the supply of medical services by expanding the size of the hospital.
- Avoid waste by optimizing medical insurance structure and improving medical insurance efficiency.

Healthy China 2030 Planning Outline

The State Council issued the outline of *Healthy China 2030 Planning* on Oct 2016.

By 2030, the system for promoting universal health will be better, the development of the health field will be more coordinated, the healthy lifestyle will be popularized, the quality of health services and the level of health protection will continue to improve, the health industry will prosper and develop, the health equity will be basically achieved, and the main health indicators entered the ranks of high-income countries.

The outline establishes the main indicators of healthy China 2030 planning:

- People's health continues to improve.
- Main health risk factors are effectively controlled.
- Health service capacity will be greatly improved.
- Significant expansion of the healthcare industry.
- Improve the healthcare system.

2016 | 2018 | 2020 | 2030

Source: Government Notice, Frost & Sullivan Analysis

Overview of Medical Insurance System in China

China Medical Insurance System

- **Social Medical Insurance**
  - **Basic Medical Insurance**
- **Commercial Health Insurance**

Employee Basic Medical Insurance

- Urban Employee Basic Medical Insurance Scheme (UEBMIS) was established in 1998. Urban enterprises and their employees are required to participate while situation-based for rural enterprises. Insurance premiums are paid jointly by employees and employers, with employees pay 2% of the total salary, and employers pay 6-10%.
- The maternity insurance system was established in 1994 and is applicable to urban enterprises and their employees, regardless of sex. The insurance premium shall be borne by employers and the rate should not exceed 1% of the salary.
- In 2019, the two insurance system merged, thereby forming the new Employee Basic Medical Insurance Scheme.

Urban and Rural Residents Basic Medical Insurance

- Urban and Rural Residents Basic Medical Insurance Scheme (URBMIS) is now combined with the New Rural Cooperative Medical Insurance Scheme (NRCMIS)
- The National Medical Insurance Bureau started to manage basic medical insurance to achieve more effective regulation of drugs and medical treatment since its establishment in 2018.
- The basic medical insurance system for urban residents began in 2007. People who are not covered by the employees basic medical insurance can participate voluntarily.
- In 2019, the per capita financial subsidy standard for urban and rural residents' medical insurance has reached no less than RMB 520/person/year.

New Rural Cooperative Medical Insurance

- The pilot execution of the New Rural Cooperative Medical Insurance System began in 2003, and by the end of June 2008, all 31 provinces had been covered. Since 2016, it has gradually merged with the basic medical insurance for urban residents to form the Urban and Rural Residents Basic Medical Insurance System.
- The population covered by the New Rural Cooperative Medical Insurance are all rural residents, and they can participate voluntarily in unit of family. Migrant workers who have difficulties in participating in the Employee Basic Medical Insurance can participate voluntarily. The premium is mainly payed by the government, and supplemented by individuals.

Serious Illness Medical Insurance and Medical Aid

- The Urban and Rural Residents Serious Illness Medical Aid is the expansion of the Basic Medical Insurance, aiming to further cover high medical expenses incurred by severely ill patients.
- The serious illness insurance system was initially implemented in 2009. At the end of 2015, it covered all urban and rural residents who are covered by Basic Medical Insurance, where part of fund for the Serious Illness Medical Insurance is drawn from.
- The urban Medical Aid has been implemented since 2005, and it covers the people in need that is approved. Urban and rural medical aid funds are raised through channels such as government allocation and social donations.

Commercial Health Insurance

- The main types of commercial health insurance are medical expense insurance and sickness insurance.
- Commercial Health Insurance is not limited to certain population. Unlike the government medical insurance, which can be renewed indefinitely, with relatively low insurance premium, and applicable to different populations groups; Commercial Health Insurance is highly dependent on policy of insurance company policy, and cover population beyond the ones that are covered by government insurance.
- In China, Commercial Insurance emerged since the last century and it is developing rapidly in the recent years.

Source: Frost & Sullivan analysis

Historical Coverage of Basic Social Medical Insurance Scheme

- Chinese government has dedicated strong effort to increasing the accessibility and affordability of healthcare services through the healthcare reform. Huge investment has been made to construct and upgrade healthcare infrastructure, and expand medical insurance coverage. A medical insurance system encompassing URBMIS and UEBMIS has been established to cover nearly all the population of 96.6% in 2021.

Unit: Million People	2017	2018	2019	2020	2021
URBMIS	873.6	897.4	1025.1	1016.8	1010.0
UEBMIS	303.2	316.8	329.3	344.6	354.2
NRCMIS*	133.0	130.0	\	\	\
Total Population Covered by 3 Schemes	1309.8	1344.6	1354.4	1361.3	1364.2
Population in China	1390.0	1395.4	1400.1	1412.1	1412.6
Coverage Rate	94.2%	96.4%	96.7%	96.4%	96.6%

*2015 data excludes data in Tianjin, Zhejiang, Shandong, Guangdong, Chongqing, Qinghai and Ningxia etc.
2016 data only includes eleven provinces in Mainland China.
2017 data only includes five provinces in Mainland China (Liaoning, Jilin, Anhui, Guizhou and Shaanxi).
2018 data only includes seven provinces in Mainland China (Liaoning, Jilin, Anhui, Hainan, Guizhou and Shaanxi, Tibet)
In 2019, NRCMIS has been fully consolidated with URBMIS

Note: URBMIS = Urban and Rural Residents Basic Medical Insurance Scheme; UEBMIS = Urban Employee Basic Medical Insurance Scheme; NRCMIS = New Rural Cooperative Medical Insurance Scheme

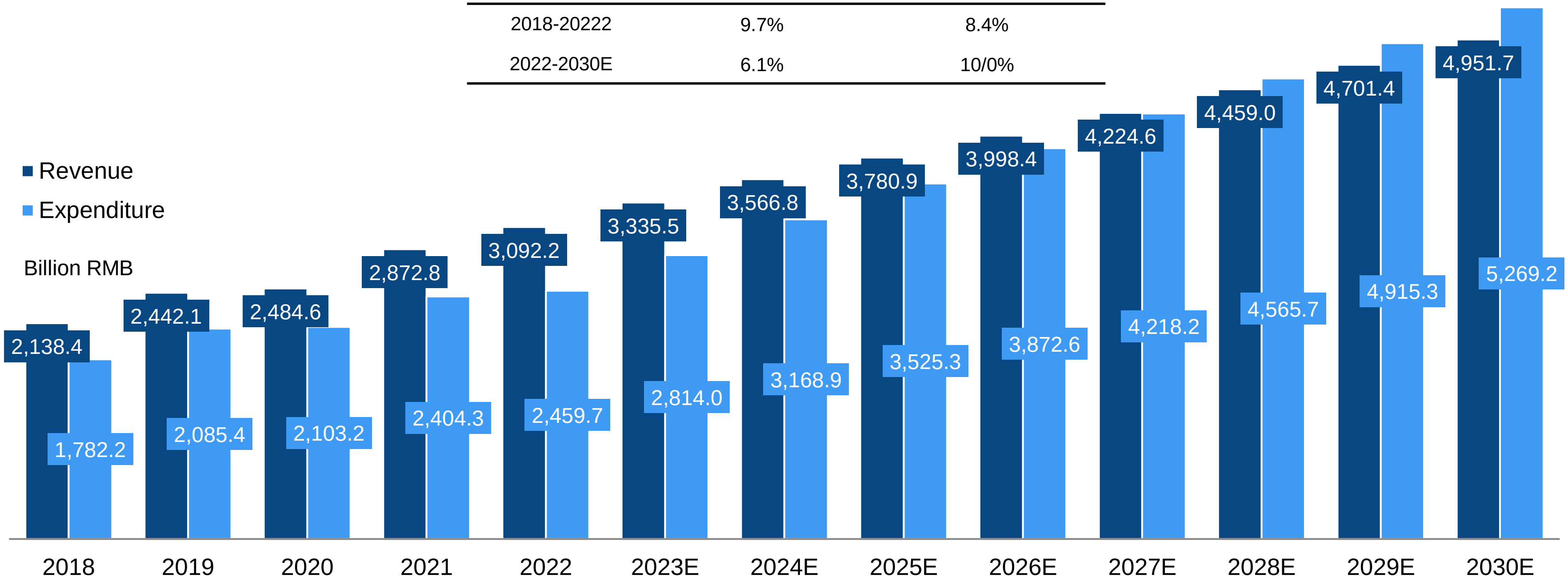
Source: MORHSS, Frost & Sullivan analysis

Basic Medical Insurance Fund in China, 2018-2030E

- The revenue of basic medical insurance fund has increased from RMB 2,138.4 billion in 2018 to RMB 3,092.2 billion in 2022, with a CAGR of 9.7%, while the expenditure has increased from RMB 1,782.2 billion in 2018 to RMB 2,459.7 billion in 2022, representing a CAGR of 8.4% during the indicated period.
- The revenue is expected to continue its growth while the expenditure will experience a much higher growth if no intervention is implemented. The expenditure will surpass the revenue in 2028 and reach RMB 5,269.2 billion in 2030. Therefore, there is a high willingness to control the expenditure of basic medical insurance fund, which can be achieved through digital technologies.

Revenue and Expenditure of Basic Medical Insurance Fund[1], 2018-2030E

Period	CAGR	
	Revenue	Expenditure
2018-20222	9.7%	8.4%
2022-2030E	6.1%	10/0%



Note 1: basic medical insurance includes URBMIS, UEBMIS and NRCMIS.

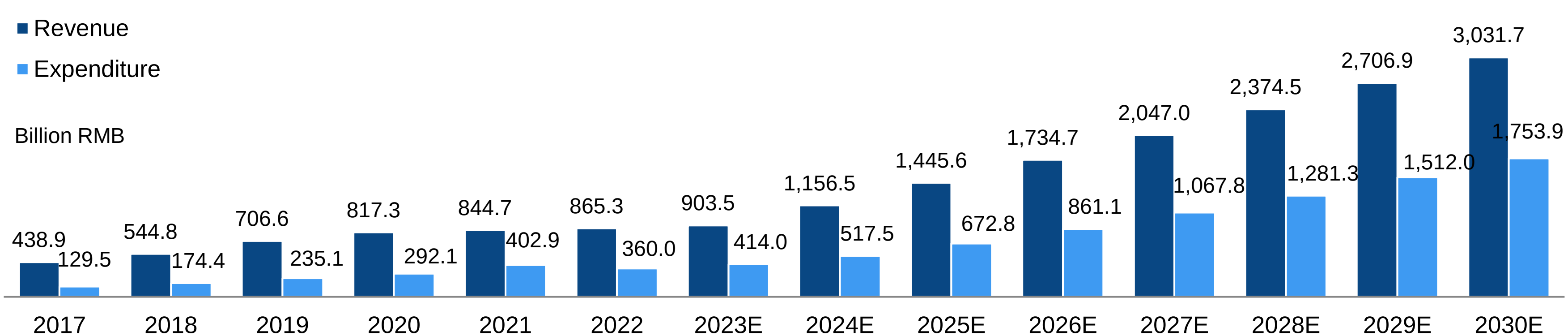
Source: NMPA, Frost & Sullivan Analysis

Commercial Health Insurance Fund in China, 2018-2030E

- According to China Insurance Regulatory Commission, the revenue of commercial health insurance fund has increased from RMB544.8 billion in 2018 to RMB865.3 billion in 2022, with a CAGR of 12.3%, while the expenditure has increased from RMB174.4 billion in 2018 to RMB360.0 billion in 2022, representing a CAGR of 19.9% during the indicated period.
- Commercial health insurance fund in China has shown explosive growth before 2017 due to the absence of regulation. After the introduction of a series of regulatory measures by China Insurance Regulatory Commission, commercial health insurance premiums began to reflect the real demand for health insurance. Along with demographic changes and increasing health awareness, the commercial health insurance is expected to continue its growth. The revenue and expenditure is forecasted to reach RMB3.031.7 billion and RMB1,753.9 billion by 2030.

Revenue and Expenditure of Commercial Health Insurance Fund, 2018-2030E

Period	CAGR	
	Revenue	Expenditure
2017-2021	12.3%	19.9%
2021-2030E	17.0%	21.9%



Source: CIRC, Frost & Sullivan Analysis

Pain Points of China Healthcare Market

- China has undergone concerted development over the last two decades to improve healthcare system through national reimbursement reform, infrastructure investments and market expansion of private hospitals and commercial insurances. Despite health sector expansion, major health disparities and systemic issues still exists.

Patients	**Great healthcare demand**	◆ Patient number in China is rising, incidents of many diseases are increasing rapidly. This has caused great difficulties for patients to get medical services.
	Poor patient experience	◆ Treatment outcomes of many diseases remained dissatisfied. Also there're no further follow-ups or any instructions after patient visit.
Doctors	**Imbalanced distribution**	◆ As most doctor resources are concentrated in big hospitals, there's a huge shortage of doctor resources especially in remote areas. Meanwhile, patients flood into big hospitals, increasing doctor's workload.
	Low diagnosis efficiency	◆ Traditional diagnosis process is complicated. Doctors need to analyze large number of patient medical records and medical test results for accurate diagnosis.
Hospitals	**Limited medical resources**	◆ With the increase of patient number, the surging demand of screening, medical instruments and facilities has brought great pressure to hospitals, overloading the urban medical system.
	Medical record management	◆ The widely used paper medical records couldn't accurately reflect patient disease status. Hospitals are using different data record systems, record mistakes and ommissions are also unavoidable.
Life Science Companies	**Long R&D cycle**	◆ Life science companies need to finish thousands of experiments, and prove effectiveness and safety in clinical trials. The whole R&D cycle is extremely long and expensive.
	Inefficient marketing methods	◆ Many life science companies lack market research, and are unfamiliar with latest trends. The traditional marketing methods exert less control over the marketing channels and are also less efficient.
Insurance Companies	**Homogeneous products**	◆ There's a fierce competition among the homogeneous commercial insurances, and there is a lack of product variety. The commercial insurance coverage is mostly limited in healthy populations.
	Low insurance profitability	◆ There's low connection between insurance companies and hospitals, it's difficult to control cost. The insurance auditing is mostly based on experience, the loss risk caused by auditing mistake is high.

Source: Frost & Sullivan Analysis

Pain Points of Traditional Healthcare Medical Services

- There're many pain points in traditional healthcare medical services, including diagnosis, prescription, payment, and follow-up processes. The Chinese government has issued many policies against these pain points, reducing the difficulties to obtain optimal healthcare medical services, improving service efficiency, strengthening regulations on drug price and distribution channel.

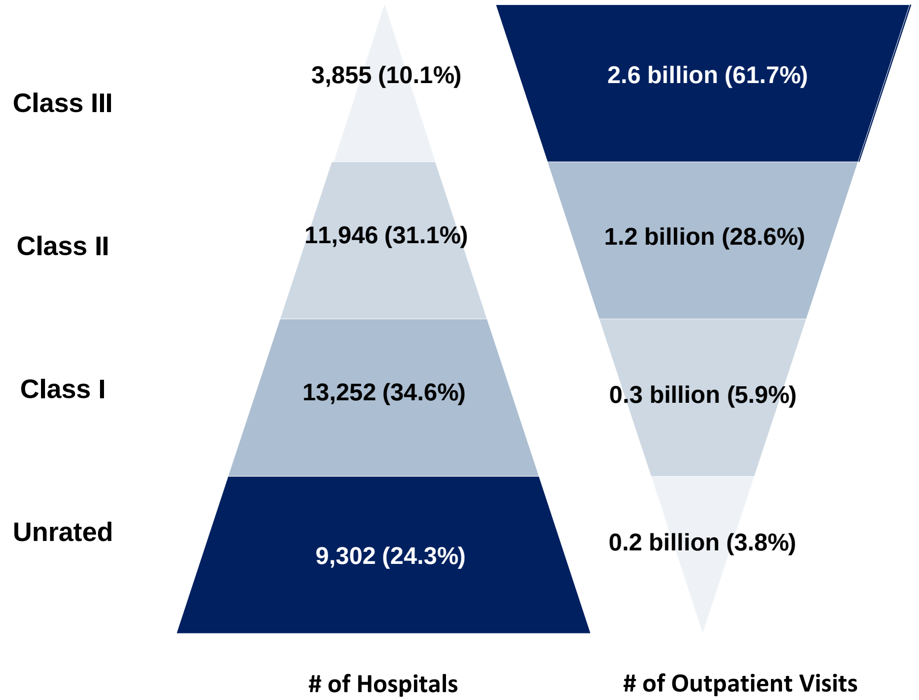
Stakeholders	Medical Services			
	Diagnosis	**Prescription**	**Payment**	**Follow-up**
Patients	• High patient number	• Difficulties of getting medical services • Unsatisfied treatment outcomes	• High medical expense • Insufficient national reimbursement support capacity	• Low follow-up rate • Poor compliance • Poor disease management including medical guidance and self assessment, etc
Doctors	• Heavy workload • Low diagnosis efficiency	• Drug overuse • Restricted doctor education and research opportunities		
Hospitals	• Shortage of medical resources with unequal distribution • Poor implementation of hierarchical diagnosis and treatment • Disordered patient and EMR management			
Life Science Companies	• Low quality healthcare data: data mistakes and missing, data in different formats • Lack of accessible data amount for R&D, including clinical data and post-marketing data • Deficient regulatory system: multi-hand distributors increasing drug price			
Insurance Companies			• Homogeneous products • Deficient marketing system • Ineffective risk management • Low connection with hospitals	

Source: Frost & Sullivan analysis

Inversion of Medical Resources and Demands

- China's medical resources are concentrated in large Class III hospitals and patients also preferentially seek healthcare services in big hospitals whether they have a cancer or a cold, which leads to the severe inversion of medical resource and diagnosis demands.
- There were only 10.1% (3,855) Class III hospitals out of 38,355 hospitals in China in 2023.

Severe Inversion of Medical Resource and Diagnosis Demand, 2023

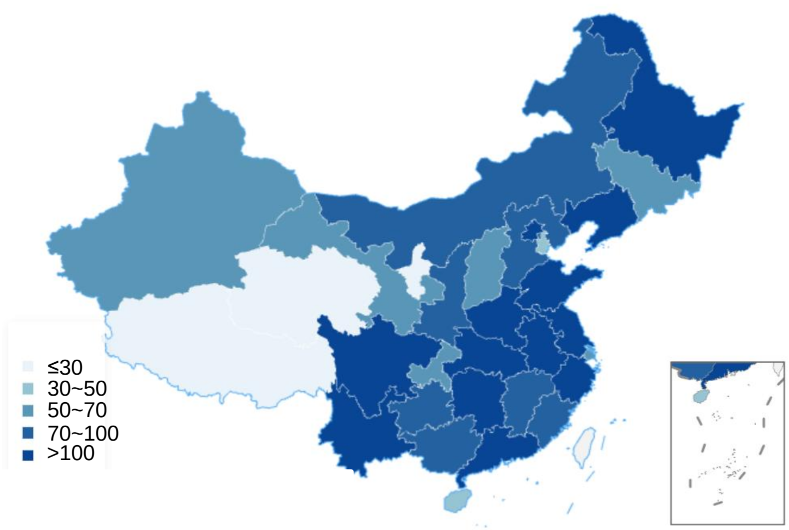


Source: NHC, Frost & Sullivan analysis

Uneven Geographic Distribution of Medical Resources

- China is not only in a shortage of medical resource, but also suffer from uneven geographic distribution of existing medical resource. For example, as one of the most developed cities in China, Beijing is abundant in medical resources, indicated by relative high number of Class III hospitals per million population.
- Meanwhile, in those relatively underdeveloped provinces such as Qinghai Ningxia and Gansu, less than one hundred Class III hospitals can be found in each.

Geographic Distribution of Class III Hospitals in China, 2021



Class III Hospitals Per Million Population in China, 2021

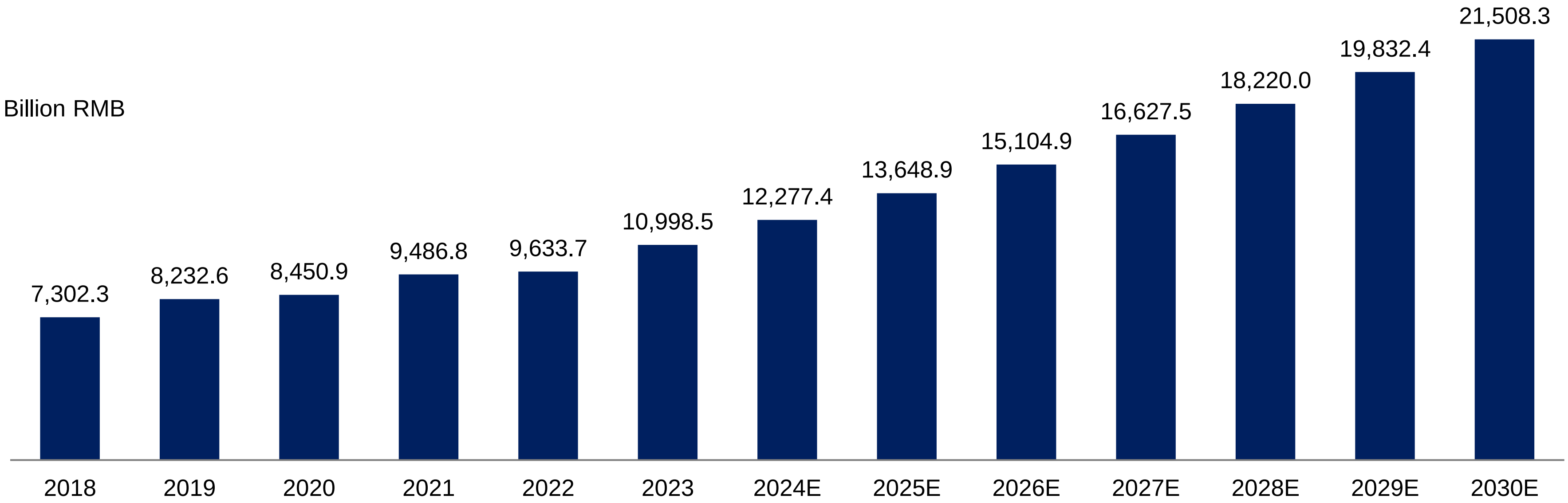
Source: Frost & Sullivan analysis

China Health and Wellness Market Size, 2018-2030E

- China health and wellness market size reached RMB10.998.5 billion in 2023, and is expected to rise to RMB21,508.3 billion in 2030, representing a CAGR of 10.6% during 2024-2027 and 10.1% during 2027-2030.

China Health and Wellness Market Size, 2018-2030E

Period	CAGR
2018-2023	8.5%
2024E-2027E	10.6%
2027E-2030E	9.0%



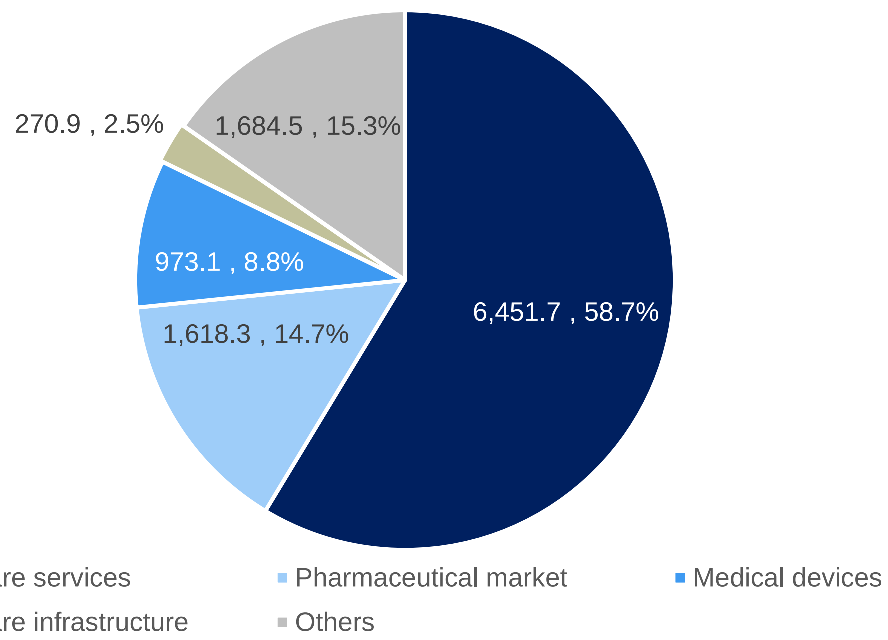
Source: MOFCOM, Annual reports of relevant companies, Frost & Sullivan analysis

China Health and Wellness Market Breakdown by Segments, 2023

- The health and wellness market in China is a significant component of the healthcare industry, encompassing products and services related to the maintenance, recovery and enhancement of health. It mainly consists of five segments: (i) healthcare services, (ii) pharmaceutical market; (iii) medical devices; (iv) healthcare infrastructure; (v) others including nutrition and health products and consumer healthcare. The market size of the health and wellness industry in China reached RMB11.0 trillion in 2023.

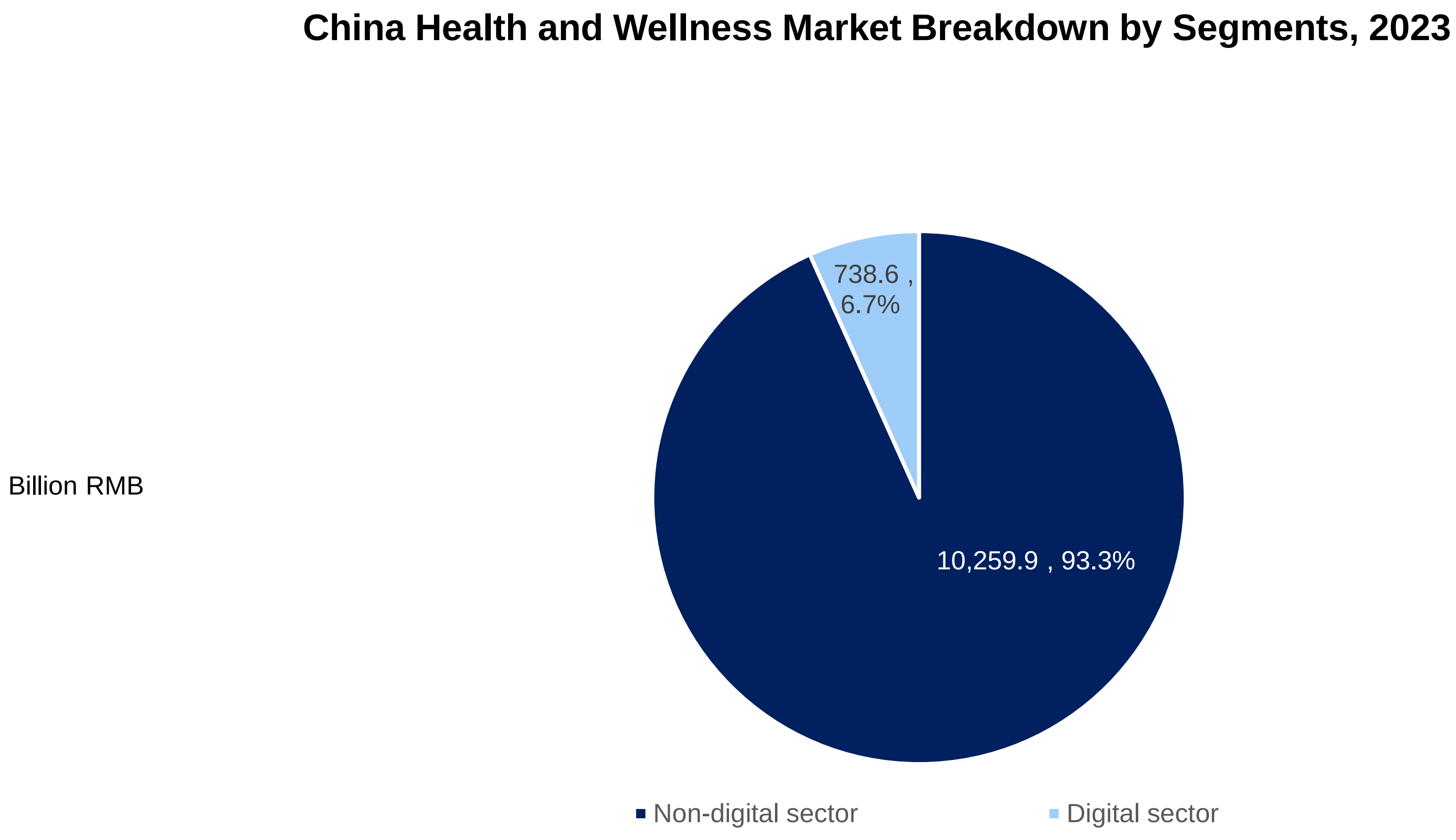
China Health and Wellness Market Breakdown by Segments, 2023

Billion RMB



Source: MOFCOM, Annual reports of relevant companies, Frost & Sullivan analysis

China Health and Wellness Market Breakdown by Segments, 2023



Source: MOFCOM, Annual reports of relevant companies, Frost & Sullivan analysis

Future Trends of China Healthcare Market

Transformation from Hospital-centered to Patient-centered	• At present stage, healthcare service market in China is still hospital-centered, meaning that patients seek for treatment by going to hospitals or other healthcare institutions, where they see healthcare service providers and receive streamlined care. With an increasing focus on each patient, active collaboration and shared decision-making are encouraged among patients, families, and providers to design and manage a customized and comprehensive treatment plan, which is realized by digital tools. This will transform digital healthcare service market to be patient-centered.
Lifecycle Management of Chronic Disease	• Digital technology has already shown its advantage in management of chronic disease in terms of the adequate use of medical resource and good patient compliance. Driven by DRG related policies, it is expected that management of chronic disease will rely more on the digital method to monitor patient biological profile and manage treatment payment throughout the chronic disease period. In this way, digital healthcare service will become a powerful tool in lifecycle management of chronic disease such as diabetes, hypertension and coronary heart diseases.
Personalized Treatment	• Given an increasing attention to precision medicine, patients can potentially get better treated with treatment tailored to their own condition. With the help of digital technology, detailed health profiles are stored online, analyzed thoroughly and kept updated, matching the patient with the best possible therapeutic option available. It is expected that in the future, with more types of data being collected electronically, more information can be utilized and personalized treatment will be applied wider in digital healthcare service market.
Further Regulatory Support for Digitalization	• Healthcare service is the closely related to human life and health and should always be treated with caution. Digital technology, though brought up a lot of convenience, has inbuilt drawbacks such as lower transparency and lower security. Thus, it is necessary for the government officials to promulgate policies that will standardize industry practice, increasing the comprehensiveness and security of the digital technologies used. In this way, it is expected that digital healthcare service market will be subject to more regulations in the future. This, together with regulations that promote digitalization would accelerate the development of digital healthcare market.

Source: WHO, NSBC, OECD, Frost & Sullivan analysis

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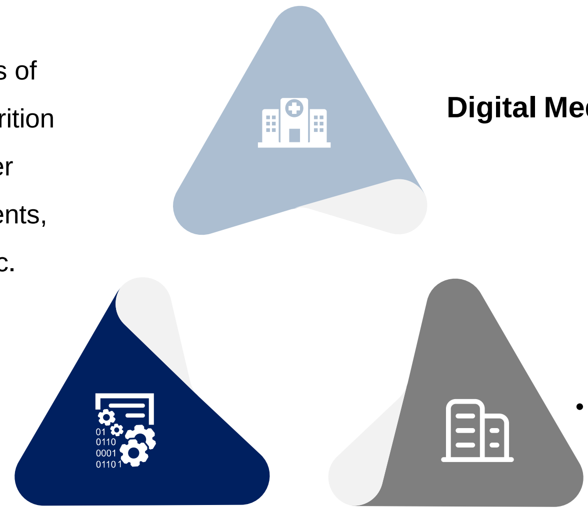
3 Analysis of China Digital Health and Medical Service Market

4 Analysis of China Digital Health Corporate Service Market

Overview of Digital Health

- Digital health refers to the use of digital technology as tools to deliver services or products to address health needs. Correspondingly, the digital health market is mainly composed of digital medical service market, digital health management service market and digital health infrastructure service and enterprise service market



Digital Medical Service

- Digital medical service market not only includes traditional medical services conducted in healthcare institutions but also digital sales of pharmaceuticals, medical devices and nutrition and health products. Typical services cover online diagnosis and treatment, appointments, consultation and disease management, etc.

Digital Health Management Service

- Digital health management services cover the whole process of comprehensive monitoring, analysis and evaluation, consultation and guidance of health, and services provided to health insurance products.

Digital Health Infrastructure Service and Enterprise Service

- Digital health infrastructure service is composed of digital informatization and digitization of health maintenance platform. Digital Informatization refers to the application of IT technologies in the medical field.
- Digital enterprise service refers to services provided to healthcare companies and mainly includes digital health marketing of pharmaceutical and medical device companies.

Development of China Digital Health Market

before 2014

1 Unregulated Stage

With wider internet accessibility, pioneer attempts were made by some healthcare institutions to leverage internet on healthcare service. Online healthcare service at this stage are less diverse and underregulated, and mainly focus on simple inquiry and online review systems.

2014

2 Sprouting Stage

The concept of 'remote healthcare service' was first proposed from national level through Opinions on Promoting Remote Healthcare Service Offered by Healthcare Institutions (《卫生计生委关于推进医疗机构远程医疗服务的意见》), embleming the inception of early digital health service.

2015

3 Exploratory Stage

The first batch of internet hospitals were established, including Wuzhen Internet Hospital, Yinchuan Intelligent Internet Hospital, etc. The conventional hospitals also attempted to extend healthcare service provision from offline to online.

2017

4 Policy Tightening Stage

A set of tightening policies[2] was released by government officials, proposing the suspension of previously approved internet hospitals. Such an unfavorable policy environment resulted in a difficult time for digital health service market.

2018 - present

5 Regulated Acceleration Stage

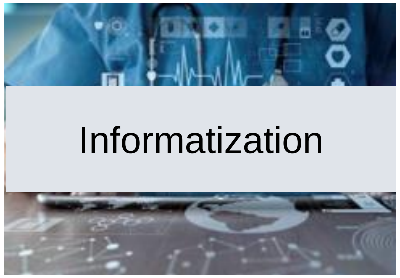
Following the encouragement of 'Internet + Health Care' a set of three trial policies[1] was given out by National Health Commission(NHC) and National Administration of Traditional Chinese Medicine(NATCM), marking the onset of expediated development of digital health service market with regulations guiding the practice.

1: Measures for the Administration of Internet Diagnosis and Treatment (for Trial Implementation)(《互联网医疗管理办法（试行）》); Measures for the Administration of Internet Hospitals (for Trial Implementation) (《互联网医院管理（试行）》); Specifications for the Administration of Remote Medical Services (for Trial Implementation (《远程医疗服务管理规范（试行）》);

2: Draft Measures for Management of Internet Diagnosis and Treatment (for Trial Implementation《关于征求互联网诊疗管理办法（试行）（征求意见稿）》;Opinions on Propelling Internet Medical Service (《关于推进互联网医疗服务发展的意见（征求意见稿）意见的函》)

Source: Government Websites, Frost & Sullivan Analysis

Milestones of China Digital Health Policies



1997.07
Regulations for the management of software evaluation of HIS
《中国卫生部医院信息系统软件评审管理办法（试行）》
- Strengthening the integrated management of Hospital Information System(HIS)

2009.03
Opinions on deepening the healthcare system reform
《中共中央国务院关于深化医药卫生体制改革的意见》
- Driving hospital information construction with a focus on electronic medical record

2019.11
Programme of work for pilot construction of Regional Medical Center
《区域医疗中心建设试点工作方案》
- Starting to form online professional alliances centered on regional medical services

2017.06
Guidance on further deepening the reform of basic medical insurance payment
《关于进一步深化基本医疗保险支付方式改革的指导意见》
- Starting to carry out payment based on Diagnosis Related Groups(DRGs) in pilot regions

2019.09
Guidance on improving policy for “Internet + medical” service price and medical insurance payment
《关于完善 “互联网+”医疗服务价格和医保支付政策的指导意见》
- Issuing equal payment policy for online and offline internet medical service items.

2020.02
Notice on the comprehensive promotion and application of medical insurance electronic voucher
《关于全面推广应用医保电子凭证的通知》
- Promoting medical insurance electronic voucher nationwide

2014.08
Opinions of the National Health and Family Planning Commission on promoting telemedicine services in medical institutions
《国家卫生计生委关于推进医疗机构远程医疗服务的意见》
- Promoting telemedicine platform to all regions

2016.10
The Plan for a Healthy China 2030
《健康中国2030规划纲要》
- Incorporating healthcare industry into national strategies for the first time，promoting “Internet + healthcare” development mode

2020.02
Notice on strengthening information construction to support the control of coronavirus
《关于加强信息化支撑新型冠状病毒感染的肺炎疫情防控工作的通知》
- Applying information technology to support the prevention

Source: Government Websites, Frost & Sullivan Analysis

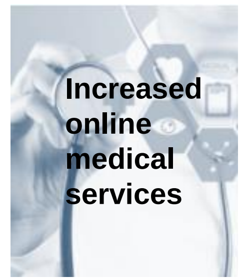
Impact of COVID-19 on Digital Health

- During the pandemic, digital health development drives policy reconstruction, optimizes supply-side resource allocation, and accelerates demand-side cognitive behavior cultivation.

Favorable policies for digital health have been introduced

Time	Policy Document	Impact
Feb 2020	Notice on Strengthening Informationization to Support the Prevention and Control of Coronavirus	Promote **online voluntary consulting**
	Notice on “Internet + Diagnosis and Treatment” Consultation Service in the Prevention and Control of Coronavirus	Give full play to the role of online consultation in prevention and control, scientifically organize **online diagnosis and treatment**
Mar 2020	Guiding Opinions on Promoting "Internet +" Medical Insurance Services in Coronavirus Prevention	Internet medical treatment is included in **medical insurance**

Medical resources allocation has been optimized



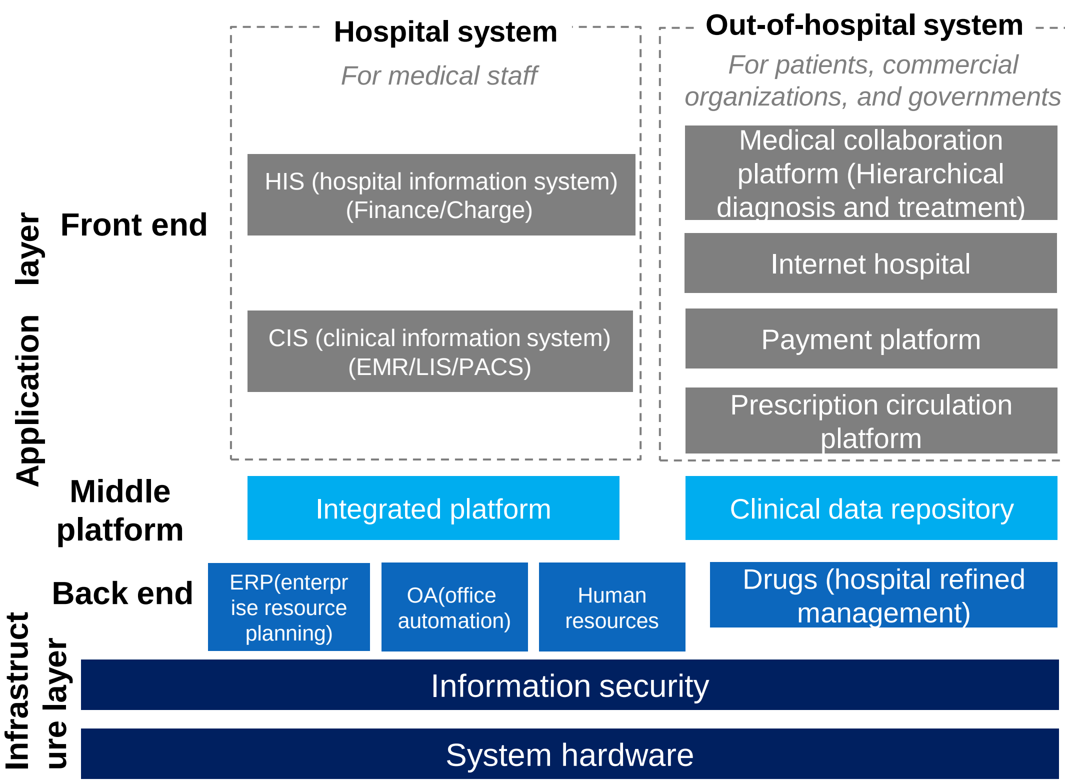
Consumer habits cultivation has been accelerated

- The online diagnosis and treatment of the hospitals under the administration of the National Health Commission has increased 17 times from 2019-2020.

Source: NHC, Frost & Sullivan Analysis

Overview of China Hospital Digital Informatization

- The government and the market have promoted digital informatization industry and promoted the overall transformation of the medical and health service system, including medical informatization, medical insurance informatization, and pharmaceutical informatization.
- Among them, hospital informatization is the focus of the construction of medical informatization. The degree of hospital informatization construction represents the level of modern management of the hospital and the strength of its service capabilities.
- Currently, the overall informatization construction of domestic hospitals is still in its infancy, and there is huge potential for upgrading.



From the perspective of application functions, the hospital's informatization construction can be divided into three aspects: front end, middle platform, and back end

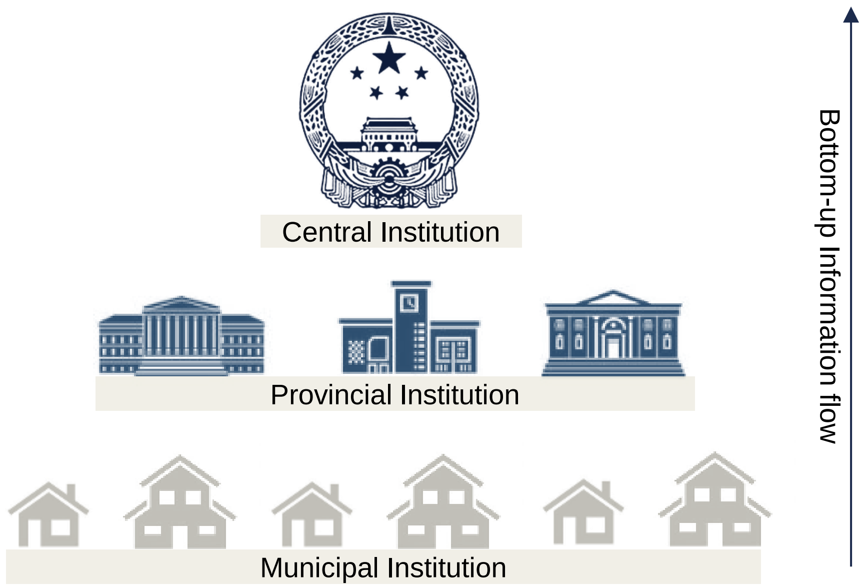
- The front end mainly includes the HIS, which focuses on business management, and the CIS, which focuses on clinical business. The core of HIS system is hospital affairs management, and the core of the CIS is the medical process.
- Middle platform is the main direction of hospital informatization construction. The lack of top-level design in the construction of domestic hospital informatization has resulted in large-scale general hospitals usually having dozens or hundreds of business systems. In order to solve the interconnection problems between business systems and make better use of the deposited data assets, the digital middle platform of the hospital represented by the integrated platform and the clinical data repository (CDR) has become a new demand for hospital informatization.
- The back end mainly refers to management and operation business systems, including Enterprise Resource Planning (ERP), refined management, office automation(OA), human resources, etc.

Note: EMR refers to electronic medical record; LIS refers to laboratory information system; PACS refers to picture archiving and communication system; ERP refers to enterprise resource planning;

Source: Frost & Sullivan Analysis

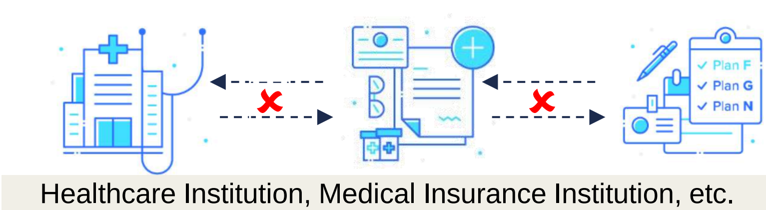
Pain Points of China Hospital Information Digitization Market

Vertical Information Dissemination Problem



- **Lack of high-level policy and regulatory framework** leaves data unstandardized, which makes inter provincial information sharing difficult and reduce efficiency.
- **Repeated construction of informatization** exists among institutions at different levels, which greatly reduces the effectiveness of information transmission.
- **Unidirectional information dissemination process** indicates that data from all provincial and municipal institutions can be uploaded to the information center of the National Health Commission, but the data integrated by the platform cannot be transferred back to subordinate agencies for application due to the privacy and security limitations of medical information .

Horizontal Information Sharing Problem

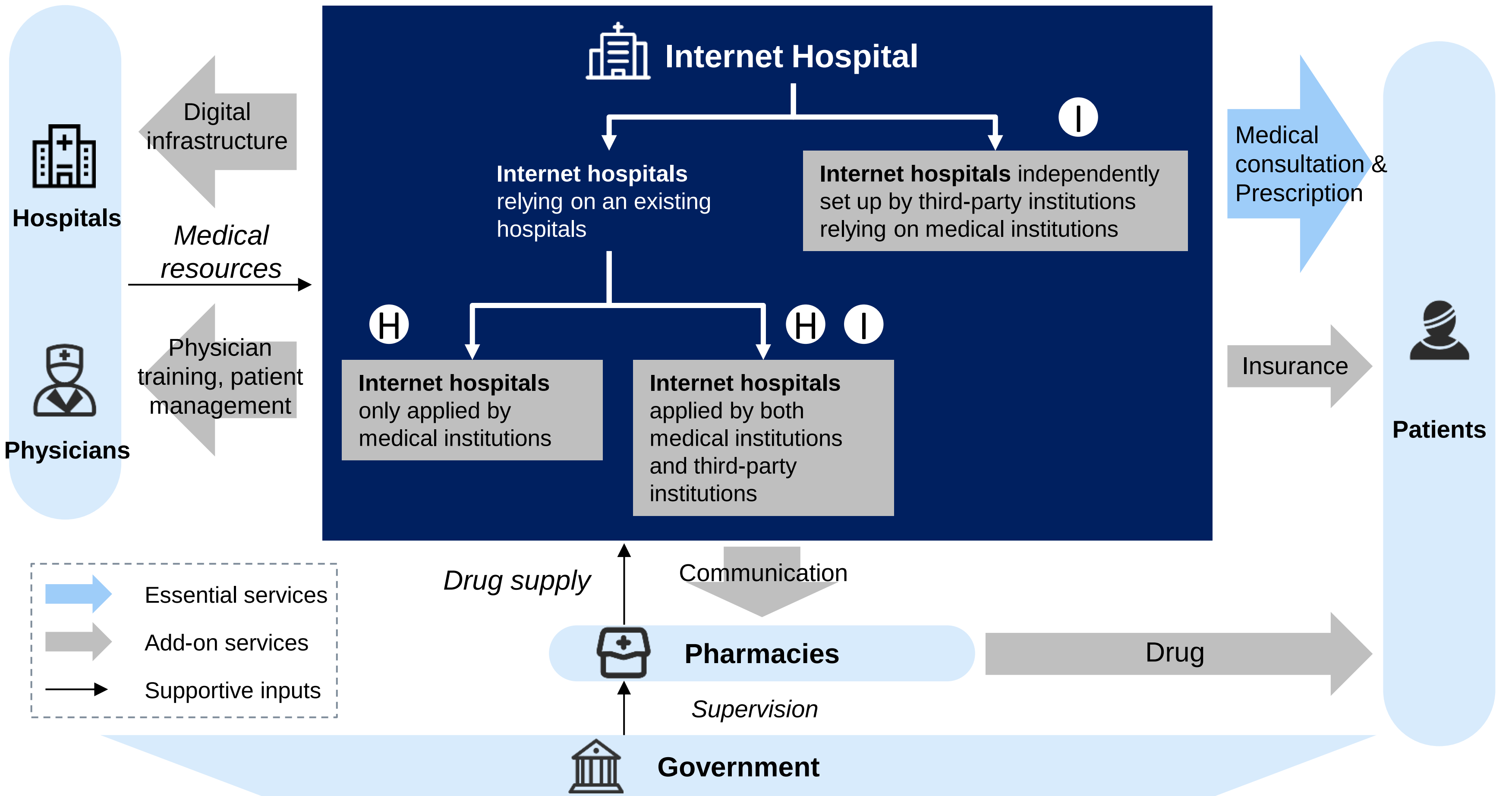


- **Low compatibility among systems of different agencies** including healthcare institutions and medical insurance institutions renders sharing of information difficult.

Source: Frost & Sullivan Analysis

Overview of Internet Hospitals

- Internet Hospital is a licensed online medical institution that provides consultation and prescription services to patients online by integrating the resources of hospitals and doctors.



Source: Frost & Sullivan analysis

Role of Internet Hospitals in Digital Health Market

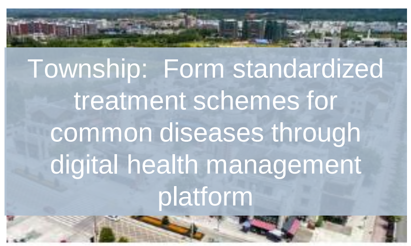
Stages of Medical Reform

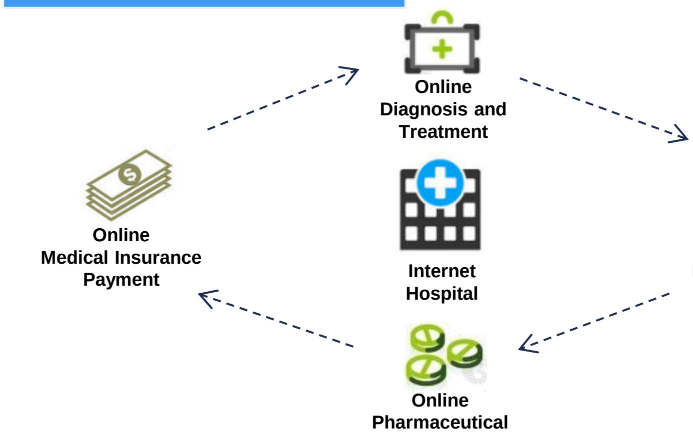
Stage1
Profit-driven
Medical services aim to maximize profit

Stage 2
Treatment-oriented
Medial institutions focus on rescuing lives and curing diseases

Stage 3
Precaution-based
Putting prevention first while integrating prevention and treatment at the same time

Regional Health Service Community + **Digital Application Platform**





Online Management
- Promote the construction of primary-level healthcare information systems
- Promote the integration of medical resources

Online Physical Checkup
- Promote primary-level physical examination and higher-level diagnosis
- Promote the intercommunication of diagnostic results

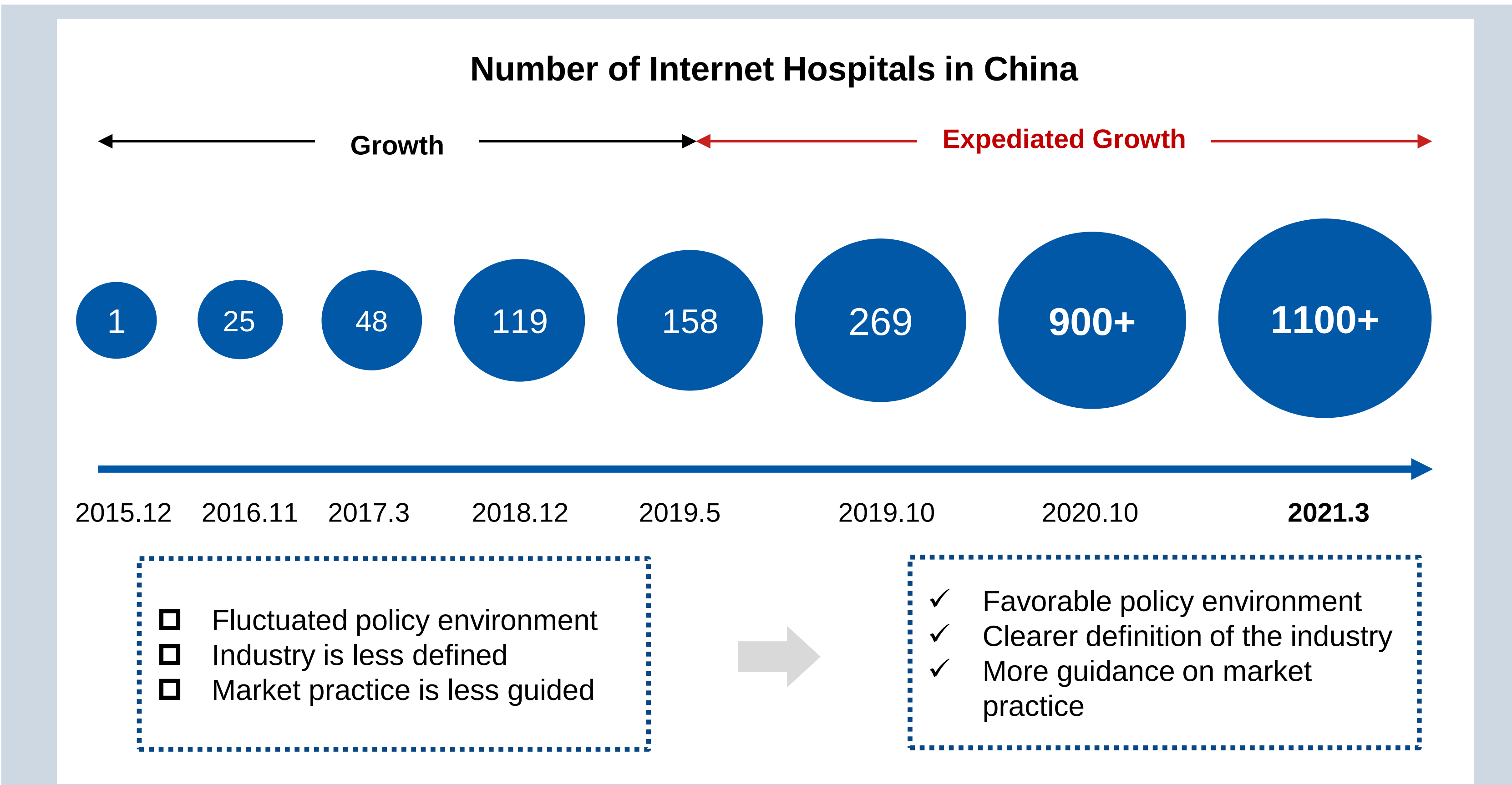
Online Service
- Provide diversified medical care services
- Bring family physicians into full play

Online Pharmacy
- Improve drug availability to meet the diversified needs of patients with chronic diseases

Source: Frost & Sullivan analysis

Growth of Internet Hospitals

- In December 2015, We Doctor established China's first Internet hospital, the Wuzhen Internet Hospital, established the first digital medication service center and generated the first electronic prescription.
- The number of internet hospitals in China has experienced growth since the launching of the first one in 2015, and the growth has been accelerated in the recent few years. Remarkably, The number of internet hospitals has increased from 158 in May 2019 to around 1100 in March 2021, with an approximately 7.0 times growth within merely two years.



Source: NHC, Frost & Sullivan

Benefits for Internet Companies to Develop Internet Hospital

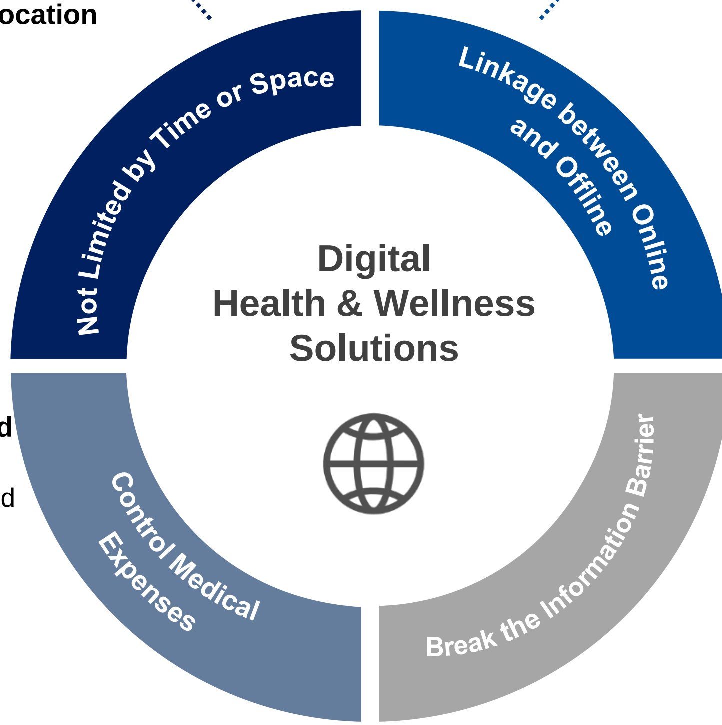
Better Customer Persona	• By developing their own internet hospitals, internet companies are able to obtain detailed information including online consultation times, consumption habit and past medical history of the patient, and generate a more precise customer persona. The customer persona would bring considerable profit to the internet companies.
Better Patient Management	• The medical history and drug consumption of the patients will be recorded by the internet hospital if they use it, which would greatly facilitate patient management. The internet companies could give health advice, recommend appropriate doctors and set reminder for the patients. This is far more effective than patients uploading or filling the form of their medical history.
Alternative Income Sources	• Since the internet hospitals are allowed to prescribe, the internet companies can earn addition profit from online prescribed drug selling. Moreover, by connecting drug retailers nationwide, the insufficiency of drug supply would no longer be a concern and the patients are less likely to suffer from increasing of drug price.

Source: Frost & Sullivan analysis

Digital Health and Wellness Solutions to Current Industry Pain Points

Improve medical resource allocation

Online medical platforms can effectively integrate resources and break time and geographical restrictions. On the platform, doctors can use fragmented time for consultation and follow-up, increasing the supply of medical resources. The platform can match supply and demand, so that patients in remote areas can also enjoy high-quality medical services.



Optimize medical procedures

Online medical platforms can realize the transfer of some offline services to online, such as time-consuming and laborious appointment registration, result check, payment procedures, etc. In the hospital, patients only need to complete the diagnosis and treatment process, which shortens the time for medical treatment and improves the medical experience.

Save costs for insurance fund

The Internet platform can accumulate and store information, such as health data, diagnosis and treatment data etc. Integrating data and leveraging artificial intelligence can provide support for cost containment for medical expense and insurance fund.

Address the information asymmetry

Information barriers often exist between patients and doctors, and diagnosis and treatment are often based on patient's preliminary knowledge and previous experience, which may lead to misdiagnosis. Through the online platform, patients can seek experts in different fields for comparative consultation and consultation according to their own needs.

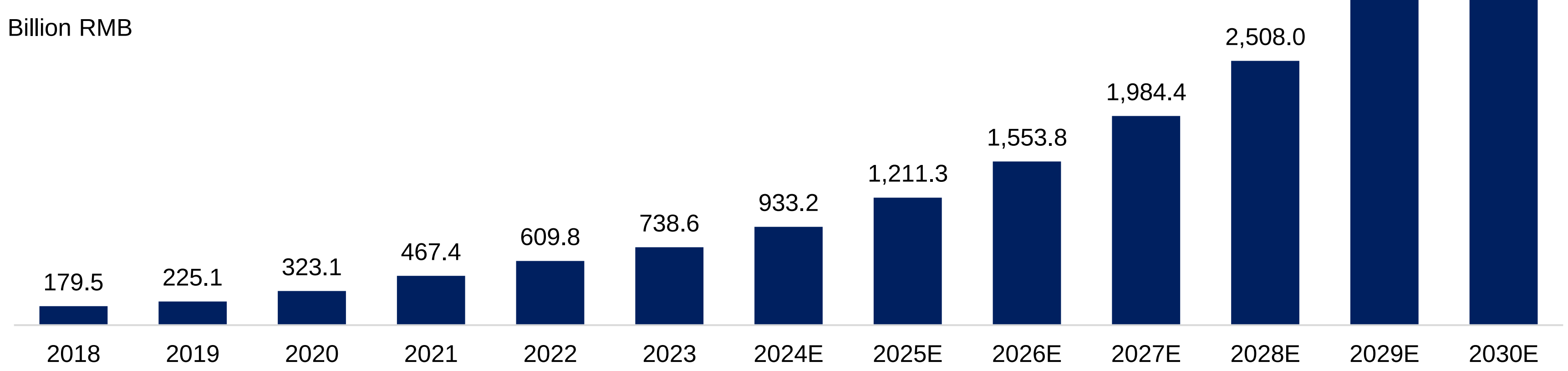
Source: Frost & Sullivan analysis

China Digital Health and Wellness Market Size, 2018-2030E

- Digital health refers to the provision of services or products by means of digital technology to address the health needs.
- China digital health and wellness market size has increased from RMB179.5 billion in 2018 to RMB738.6 billion in 2023 with a CAGR of 32.7%. The market will reach RMB3,879.0 billion, representing a CAGR of 25.0% during 2027-2030.
- The digital health and wellness industry in China accounted for 6.7% of the overall health and wellness market in 2023 in terms of market size, compared to 2.5% in 2018 and an estimate of 11.9% in 2027. It is expected to further account for 18.0% of the overall health and wellness market in 2030, in terms of market size.

China Digital Health and Wellness Market Size, 2017-2030E

Period	CAGR
2018-2023	32.7%
2024E-2027E	28.6%
2027E-2030E	25.0%

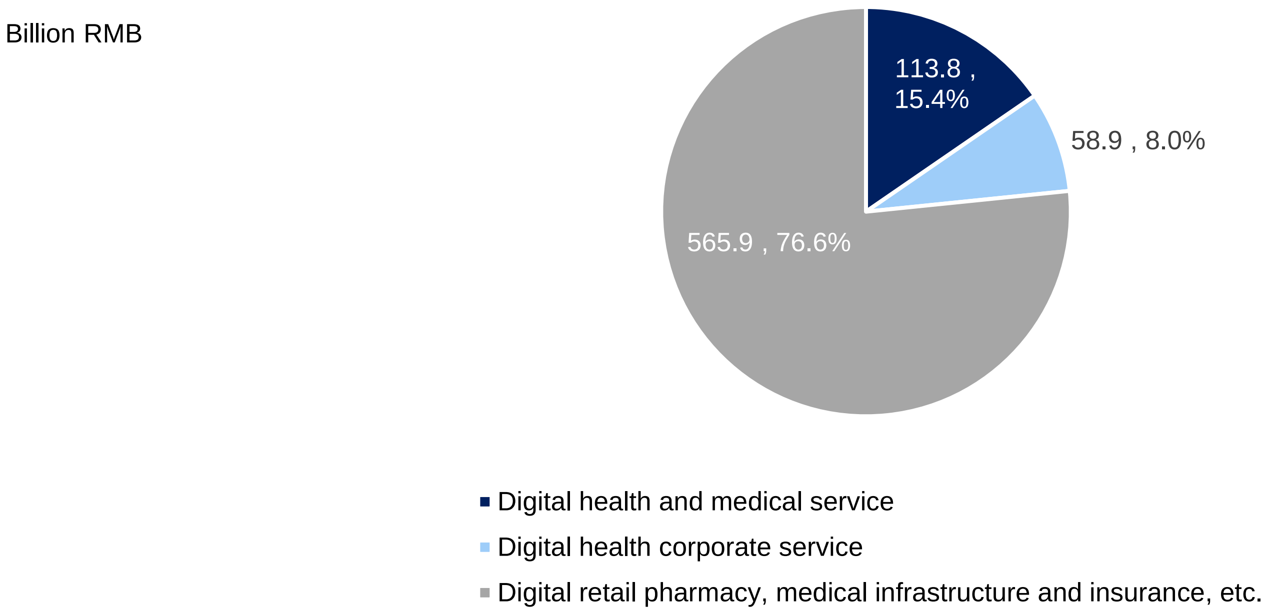


Source: MOFCOM, Annual reports of relevant companies, Frost & Sullivan Analysis

China Digital Health and Wellness Market Breakdown by Segments, 2023

- The digital health and wellness market is primarily composed of the digital health and medical service market, the digital health corporate service market, and the digital retail pharmacy market. The market size of the digital health and wellness market reached RMB 738.6 billion in 2023.
- The increasing trend of digitalization within the pharmaceutical retail pharmacy sector has led to a significant portion of sales being conducted through online retail pharmacies, thereby contributing substantially to the digital health and wellness market.

China Digital Health and Wellness Market Breakdown by Segments, 2023



Source: MOFCOM, Annual reports of relevant companies, Frost & Sullivan Analysis

Competitor Analysis of Digital Health and Wellness Market

Ranking	Company	Principal Business	2023 Digital Health and Wellness Revenue (Billion RMB)	Market Share
1	JDH 京东健康	Company was committed to building a health management platform that takes medicine and health product supply chain as the core, also concentrated on digital-driven medical services; listed in Hong Kong	53.5	7.2%
2	阿里健康	Company mainly concentrated on the fields of pharmaceutical e-commerce, medical services and digital healthcare; listed in Hong Kong	27.0	3.7%
3	平安好医生	Company established a unique business model based on “Managed Care + Family Doctor Memberships + O2O Healthcare Services”; listed in Hong Kong	4.7	0.6%
4	叮当健康	Company offers on-demand pharmaceutical retail and medical consultation, primarily with online-to-offline solutions; listed in Hong Kong	4.9	0.7%
5	微医 WeDoctor	Company is a medical health technology platform focusing on membership-based health management services and digital chronic disease management	1.6	0.2%
6	智云健康 ClouDr.	Company operated as one-stop chronic disease management and smart medical platform, principal business covers hospital/pharmacy/medicine/individual solution; listed in Hong Kong	3.7	0.5%

Source: Annual Reports, Public Information, Frost & Sullivan Analysis

Growth Drivers of Digital Health Market

Increasing Penetration of Digital Medical Service	• Digital medical service is an emerging industry and used to have a low penetration rate in the health market, which enjoys a huge market space in China. With the outbreak of COVID-19, fundamental changes in the behavior patterns of government, medical institutions, doctors and patients occurred, accelerating the penetration rate of digital medical service and subsequently contributing to the development of digital health market. • The migration rate of digital health services (defined as the market size of the digital health and wellness market divided by China's total healthcare expenditure) increased from 3.0% in 2018 to 8.1% in 2023.
Innovation Technology of Digital Health	• Along with the development of digital technologies, digital health redefines the standard of health and medical practice by providing convenient and efficient health related services, consequently helping more and more patients to have access to high-quality medical resources, sharing valuable health information and communication among different levels of hospitals and doctors, making digital health an important part of China health industry.
Favorable Policies	• *Promoting the Development of 'Internet+ Medical Health'* (《《关于促进 "互联网+医疗健康" 发展的意见》) targets set at providing quality service for more population at national level. A series of similar policies, such as [Draft Measures for Management of Internet Medical Treatment (Draft for Comments) "(《關於徵求互聯網診療管理辦法（試行）》（徵求意見稿）)], Notice on In-depth Implementation of "nternet + Medical Health" Activities for the Benefit of the Public (《關於深入開展"互聯網 +醫療健康"便民惠民活動的通知》) and Notice on Further Promotion of "nternet + Medical Health" "live Ones" Service Activities"(《關於深入推進"互聯網+醫 療健康" "五個一"服務行動的通知》), also set out blueprints for the development of the digital health and wellness market and emphasizes the importance of digital health solutions. Especially given the COVID-19 pandemic, the digital health plays an important role in maintaining necessary medical services online. It is believed that digital health will embrace a fast development thanks to these favorable policies.
Growing Health Awareness	• Increasing healthcare expenditure and disposable income are improving health awareness. Diagnosis and treatment rate of diseases, in particular, chronic diseases can be consequently improved which drives up drug and medical service demand. Also, related service which is able to maintain health start to rise among affluent population. Digitization as an efficient method for all these, is expected to be driven fast in the coming years.

Source: Frost & Sullivan analysis

Future Trends of Digital Health Market

Attention Towards Digital Strategy	• Pharmaceutical companies have paid more attention towards digital strategy and its corresponding capacity building. The capacity building is carried out via online channels for branding and marketing, construction of patient education, remote service, medical E-commerce, disease management and other fields. As this is an emerging market, there is a large number of participants focusing on different aspects of digital health and wellness market and many of such participants are currently exploring various business models and tend to develop within one particular sub-segment.
Increasing Doctor Participation	• Increasing number of doctors has been providing online diagnosis and treatment services through third-party platforms or Internet hospitals. The use of multiple platforms has become the mainstream trend. The active participation of doctors also has induced more patients to seek medical advice from offline to online.
Digitalization of Consumer Healthcare	• Consumer healthcare demand is on the rise, and the industry is maturing. The digitization of consumer healthcare service providers, catalyzed by the COVID-19, is becoming a successful option for cost saving and patient retention.
Development of Online Chronic Disease Management Platform	• Digital health platforms are partnering with pharmaceutical companies and hospitals to facilitate long-term chronic disease management and post-operative care by highlighting risk factors for disease and strengthening patient compliance. The online disease management platform can also help doctors better manage patients, track patient information, and remind them to follow up.
Importance of Digital Health Infrastructure Service	• Driven by policies, hospitals at all levels are actively building online hospitals to enrich out-of-hospital service offerings in order to accelerate the transition towards a greater online presence. This process of transition from offline to online for hospitals increases demand for provisions of relevant digital infrastructures.

Source: Frost & Sullivan analysis

Entry Barriers of Digital Health Market

Strong network of healthcare resources	• Large-scale players are more likely to succeed, since they can accumulate hospital resource by offering technology and supply chain services to empower hospitals and can accumulate offering doctor resource by offering an integrated online and offline venues platform to establish their presence inside and outside of the hospital. As a result, platforms can use the resource to provide basic and domestic healthcare services through primary healthcare institutions and local hospitals within the community, meanwhile, platforms can also provide high-quality medical services through doctors from higher-class hospitals using the accumulated resources.
A proven business model with clear path to profitability	• The digital health market is a relatively new segment in China's healthcare industry. The digital health and wellness industry in China accounted for 3.5% of the overall health and wellness market in 2021 in terms of market size. Many participants in this industry are still looking for a business model that can lead to sustainable revenue and profitability.
High customer acquisition cost	• The user behavior and user habits of digital health platforms have been well trained through the existing large players of digital health market. Furthermore, the existing large players have penetrated most potential users. Consequently, the emerging players require substantial cost to acquire new customers to accumulate large amount of customer resource.

Source: Frost & Sullivan analysis

Opportunities of Digital Health Market

Integrated and comprehensive online + offline service capabilities	• Due to the uneven distribution of medical resources in China, the ability of digital health platforms to integrate online and offline medical resources has become the key driver to address the pain points of the healthcare industry. Companies with integrated and comprehensive online + offline medical service capabilities are able to provide users with quality medical services, and demonstrate superior efficiency in the overall medical service process, such as supply chain, diagnosis and treatment measures and management methods. Such advantages enable these companies to effectively acquire users and generate sustainable growth.
Cooperation and innovation capabilities in commercial health insurance products	• The popularization of commercial health insurance is a crucial element of comprehensive health management. By cooperating with commercial health insurance companies and developing innovative commercial health insurance products, digital medical service companies can offer customized health insurance products based on users' needs, and provide full services from sales to claim settlement in order to improve the overall efficiency of user health management.

Favorable Policies for Digital Health and Wellness in China (1/4)

Internet Hospital

Date	Government	Policies	Contents
Aug, 2014	NHFPC	*Proposal for the Promotion of Telemedicine* 《关于推进远程诊疗的建议》	Allow medical institutions to provide telemedicine services
May, 2017	NHFPC	*On the solicitation of Internet medical treatment management measures (for trial implementation) (draft for comments)* 《关于征求互联网诊疗管理办法（试行）》（征求意见稿）	Allowed Internet medical activities are limited to telemedicine services between medical institutions and chronic disease contracting services provided by primary care institutions. No other forms of Internet medical activities shall be carried out. Internet diagnosis and treatment activities have strict access threshold.
Jan, 2018	NMPA NATCM	*Notice on the Issuance of the Action Plan for Further Improvement of Medical Services (2018-2020)* 《关于印发进一步改善医疗服务行动计划（2018-2020年）的通知》	All medical associations nationwide achieve full telemedicine coverage Incorporate specific telemedicine projects into performance assessment
Apr, 2018	State Council	*Opinions on the promotion of "Internet +" medical health development* 《关于促进"互联网+医疗健康发展的意见》	Formally recognizing and defining Internet hospitals. Setting clear requirements for telemedicine. Gradually include eligible Internet medical services in the scope of basic medical insurance
July, 2018	NMPA NATCM	*Notice on the in-depth development of "Internet + medical health" activities for the benefit of the public* 《关于深入开展"互联网+医疗健康"便民惠民活动的通知》	Require hospitals above class two to provide online access of medical processes Encourage the development of Internet hospital services to strengthen family doctor remote services and guided referral services Full telemedicine coverage

Note: National Health and Family Planning Commission, NHFPC; National Administration of Traditional Chinese Medicine, NATCM

Source: Government Website, Frost & Sullivan Analysis

Favorable Policies for Digital Health and Wellness in China (2/4)

Internet Hospital

Date	Government	Policies	Contents
Sept, 2018	NMPA NATCM	*Notice on the Issuance of 3 Documents including the Measures for the Administration of Internet Treatment (for Trial Implementation)* 《关于印发互联网诊疗管理办法（试行）等3个文件的通知》	Internet hospital access and establishment criteria. Basic requirements for the operation of Internet hospitals. Basic requirements for telemedicine
Oct, 2018	NMPA NATCM	Assessment Indicators for the Action Plan for Further Improvement of Medical Services (2018-2020) 《进一步改善医疗服务行动计划（2018-2020年）考核指标》	All medical associations nationwide achieve full telemedicine coverage Incorporate specific telemedicine projects into performance assessment
June, 2019	State Council	*2019 key tasks for Deepening the reform of the medical and health system* 《深化医药卫生体制改革 2019 年重点工作任务》	Guide the local orderly development of "Internet + medical health" services. Summarize and evaluate the "Internet + nursing services" pilot work, as soon as possible to form a standardized and sound system
Sept, 2019	NMPA	*Drug Administration Law of the People's Republic of China* 《中华人民共和国药品管理法》	Vaccines, blood products, narcotic drugs and other drugs under special management of the state shall not be sold on the internet

Note: National Administration of Traditional Chinese Medicine, NATCM; National Healthcare Security Administration, NHSA

Source: Government Website, Frost & Sullivan Analysis

Favorable Policies for Digital Health and Wellness in China (3/4)

Internet Hospital

Date	Government	Policies	Contents
Feb, 2020	NMPA MOF NHSA	*Opinions on Strengthening Pharmacy Management in Medical Institutions to Promote Rational Drug Use* 《关于加强医疗机构药事管理促进合理用药的意见》	Strengthen the integration of electronic prescription online and offline supervision, and constantly improve the supervision measures
Feb, 2020	NMPA	*Notice on Strengthening Information Technology to Support Prevention and Control of COVID-19* 《关于加强信息化支撑新型冠状病毒感染的肺炎疫情防控工作的通知》	Encourage Internet treatment to reduce the pressure of offline treatment and the risk of cross-infection
Mar, 2020	State Council	*Opinions on Deepening the Reform of the Medical Security System* 《关于深化医疗保障制度改革的意见》	Adapt to the direct settlement of foreign medical treatment, "Internet + medical" and medical institutions service model development needs, to explore the development of cross-regional fund budget pilot The eligible medical institutions into the scope of medical insurance agreement management, support the "Internet + medical" and other new services multi-model development.
May, 2020	State Council	*Opinions of the General Office of the State Council on Promoting the Development of "Internet + Medical Health"* 《国务院办公厅关于促进“互联网+医疗健康"发展的意见》	Adhere to the integration of online and offline; optimize the process of intelligent medical services; promote regional information sharing and mutual recognition; strengthen the industry "one code common"; promote cross-sectoral "multi-code integration"

Note: Ministry of Finance, MOF; National Healthcare Security Administration, NHSA

Source: Government Website, Frost & Sullivan Analysis

Favorable Policies for Digital Health and Wellness in China (4/4)

Internet Hospital

Date	Government	Policies	Contents
Nov, 2020	NMPA	*Drug Network Sales Supervision and Administration Measures (Draft for Comments)* 《药品网络销售监督管理办法（征求意见稿）》	Strengthen the supervision and management of drug network sales, regulate drug network sales behavior
Nov, 2020	State Council	*1.Opinions on Deepening the Reform of the Medical Security System* *2. Opinions on the promotion of "Internet + medical health" development of views* 《中共中央国务院关于深化医疗保障制度改革的意见》和《国务院办公厅关于促进“互联网+医疗健康”发展的意见》	Vigorously support the "Internet +" medical service model innovation, to further meet the people's demand for convenient medical services, improve the level of health insurance management services, and enhance the efficiency of health insurance fund use
Dec, 2020	NHC, NMIA, State Administration of Traditional Chinese Medicine	Notice on Further Promotion of the "Internet + Medical and Health" "Five Ones" Service Action 关于深入推进“互联网+医疗健康”“五个一”服务行动的通知	• The policy promotes "integrated" shared services, improves convenient, intelligent and humanized service levels as well as “one-code communication" converged services, breaking the barriers of multi-code coexistence • Such service is expected to improve "Internet +" medical online payment work, which is beneficial for the system effectiveness

Note: National Administration of Traditional Chinese Medicine, NATCM

Source: Government Website, Frost & Sullivan Analysis

Favorable Policies for Digital Health and Wellness in China

Impact of Medical Insurance Policies on the Development of Internet Hospital

Date	Issuing Authority	Policies	Contents
Aug, 2019	the National Healthcare Security Administration	*Guiding Opinions on Improving the Policies of "Internet +" Medical Service Prices and Medical Insurance Payment* 关于完善"互联网＋"医疗服务价格和医保支付政策的指导意见	• Deepening the reform of "simplification of administrative procedures, devolution of powers, combination of devolution and regulation, and optimization of services": continuing to combine market formation, government adjustment, and social co-governance, establishing a price formation system that is open, flexible with multiple participants, and laying equal emphasis on stimulating the dynamism of healthcare markets and guiding the provision of adequate services. • Providing management by categories: following the rules of operation and development of "Internet plus" initiative, and developing applicable price and payment policies for different service providers, customers, and contents. • Encouraging innovation: providing a more flexible development space for new technologies and new modes that significantly improve cost-efficiency and better meet diversified medical demands based on "Internet plus". • Coordinating development: implementing fair price and payment policies for online and offline medical services, and promoting online and offline means of coordinated development.
Mar, 2020	National Health Commission	*Guidance Issued regarding Advancement of 'Internet +' Medical Insurance Services During the Period of Prevention and Control of COVID-19* 关于推进新冠肺炎疫情防控期间开展"互联网+"医保服务的指导意见	• The eligible 'Internet +' medical service expenses should be included in the scope of medical insurance. • Designated medical institutions should be encouraged to provide 'non face to face' drug purchase services. • Handling services should be improved. • The informatization level should be continuously promoted • Supervision over medical insurance funds should be enhanced. • There should be a guarantee that work is carried out in a smooth and orderly manner.

Source: Government Websites, Frost & Sullivan analysis

Favorable Policies for Digital Health and Wellness in China

Multi-site Practice

Date	Issuing Authority	Policies	Contents
Nov. 2014	NHC	*Notice on Issuing Several Opinions on Promoting and Regulating the Multi-site Practice of Physicians* 关于印发推进和规范医师多点执业的若干意见的通知	• This notice supports the personnel flow of physicians from site to site and optimize the policy environment for physicians' multi-site practice • This notice also raises the standardize requirement for multi-site practice as well as emphasizing the supervision and management of the multi-site practice of physicians by health and family planning administrative departments and medical institutions to ensure the treatment safety and quality
Dec. 2016	State Council	*Notice of the State Council on Issuing the "13th Five-Year Plan" to Deepen the Reform of the Medical and Health System*国务院关于印发“十三五”深化医药卫生体制改革规划的通知	• The policy suggests the support to multi-site practice system, aiming to guide the formation of a smooth referral mechanism within the medical complex • This policy aims to improve the multi-site practice policy for physicians and reform the physician practice registration system, to improve medical resource planning and control methods, as well as accelerating the development of social medical services
Apr. 2017	NHFPC	*Measures for the Administration of Physician Practice Registration* 医师执业注册管理办法	• The regulation suggests that multi-point practitioners only need to determine a major practice institution for registration, and other practice institutions for filing, and the number of practice institutions is not limited

Source: Government Websites, Frost & Sullivan analysis

Favorable Policies for Digital Health and Wellness in China

Multi-site Practice

Date	Issuing Authority	Policies	Contents
Jul. 2018	NHC, NATCM	*Internet Hospital Management Measures (Trial)* 互联网医院管理办法（试行）	• This policy provides a conditional and moderate liberalization of physician practice registration • Physicians who carry out Internet diagnosis and treatment activities can carry out Internet diagnosis and treatment as long as they have obtained the qualifications of practicing physicians, have more than 3 years of independent clinical experience, and are approved by the medical institutions where they practice registration • Internet hospitals do not need to re-register for physicians who are not registered by this institution
Mar. 2021	State Council	*14th Five-Year Plan for the National Economic and Social Development and outline of long-term goals for 2035 of the People's Republic of China中华人民共和国国民经济和社会发展第十四个五年规划和2035年远景目标纲要(“十四五”规划)*	• The plan implements regional registration of physicians and promote multi-institution practice of physicians
Mar. 2021	Twenty-eight departments including NDRC, NHC,NHSC	*Accelerate the Cultivation of New Form of Consumption Implementation Plans* 加快培育新型消费实施方案	• The plan supports multi-site practice of medical personnel in physical medical institutions on the Internet Hospitals and diagnosis/ treatment platforms

Source: Government Websites, Frost & Sullivan analysis

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2 Analysis of China Digital Health and Wellness Market

3 Analysis of China Digital Health and Medical Service Market

4 Analysis of China Digital Health Corporate Service Market

Overview of Digital Health Services

Before Diagnosis

Healthcare Management Institutions
- Health intervention services
- Chronic disease management and rehabilitation

Medical Examination Institutions
- Comprehensive health examination
- Personalized examination service

Geracomium
- Nursing care
- Disease consulting and management

Diagnosis

Registration Platforms
- Online appointment and registration

Medical Institutions
- Diagnosis and treatment service
- Examination service
- Sale of pharmaceutical products

Online Interrogation Platforms
- Consultation service for chronic diseases
- Medical information inquiry

After Diagnosis (Chronic Disease Management)

Manufacturer & Distribution

Pharmaceutical Companies
- Production and sale of pharmaceutical products
- Research and development

Offline Pharmacies
- Sale of pharmaceutical products

Medical E-commerce Platforms
- Sale of pharmaceutical products

Medical Device Companies
- Production and sale of medical devices
- Research and development

Medical Service Institutions

Medical Institutions
- Consultation service
- Management and treatment of chronic diseases

Offline Pharmacies
- Daily consultation service
- Management of chronic diseases

Medical Service Platforms

Information Platforms
- Knowledge propagation
- Emerging medical information
- Expert lectures

Monitoring Reminder
- Record and analysis of health data
- Medication reminder

Social Interaction Platforms
- Patient communication
- Doctor-patient interaction

Third-party Services

Commercial Insurance Companies
- Reimbursement of medical expenses

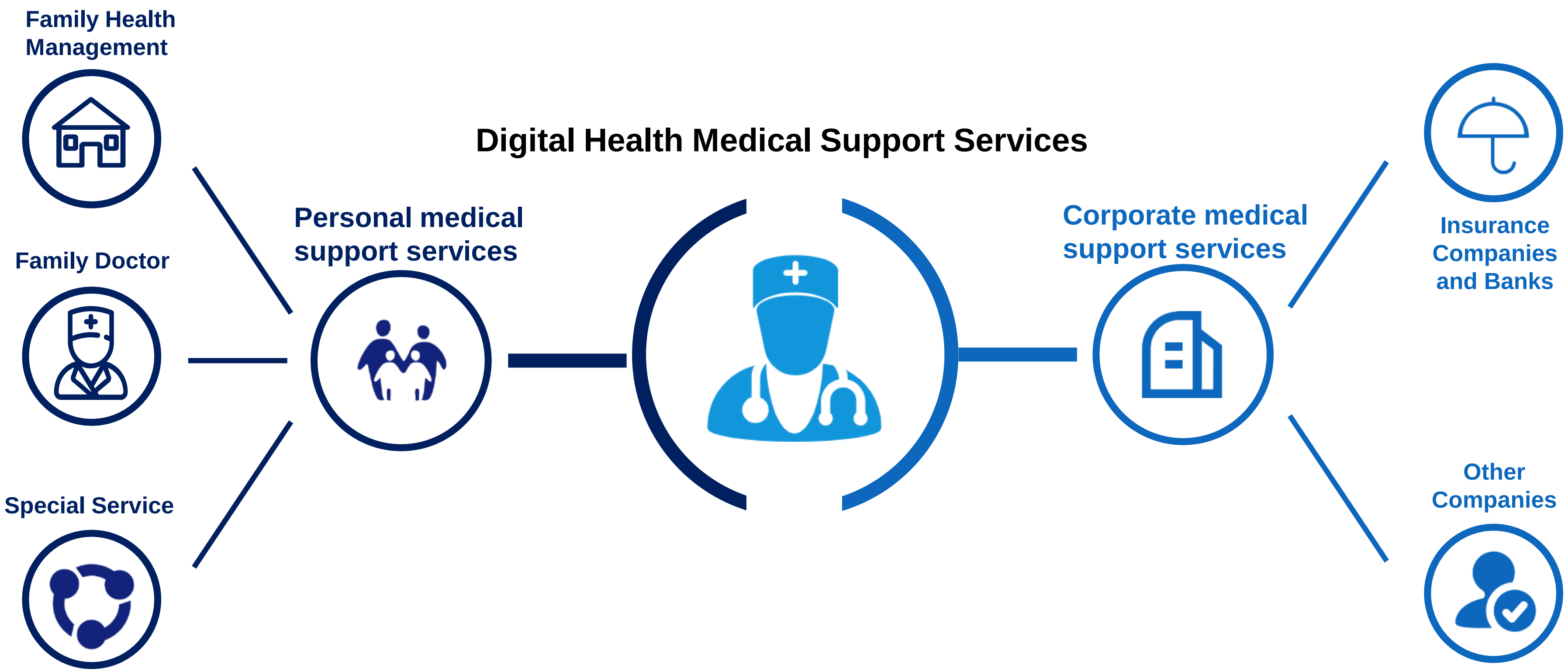
Payment Services
- Payment services
- Medical loan

Logistics
- Delivery of medical products
- Warehouse management

Source: Frost & Sullivan Analysis

Overview of Digital Health Medical Support Services

- Digital health Medical support services can be divided into two parts according to the types of clients. Personal digital health medical support services are mainly designed for personal clients and their family, which mainly include family health management, family doctor and special service, and the special services are general service packages designed for special needs, such as pregnancy assistant provides coaching, health alerts and offline consultation appointment. Corporate medical support services are sold to corporate customers and the companies will provide it to their employees or their clients in a free or charging way.



Source: Frost & Sullivan analysis

Overview of Digital Health Medical Support Services

- Personal digital health medical support services are comprehensive service systems designed for personal clients and their family. It can be further divided into 3 parts as health service system, medical service system and special service system.
- Health service system, known as family health medical support services, is intended to provide a one-stop health management solution for family members, including health guidance, offline consultation and etc. Medical service system, known as family doctor, provides clients with online and offline professional medical consultation from physicians, especially for chronic disease management. Special service system is a comprehensive service package designed for special occasion, such as pregnancy assistant, child care for children with neural disease.

Family Health Management

Family health management provides personalized one-stop health advice such as health information, health guidance, annual body check planning, hospital visit assistance, etc.

Family Doctor

Family doctor offers professional medical service for clients such as online and offline medical consultation, treatment guidance, health maintenance, chronic disease management and etc..

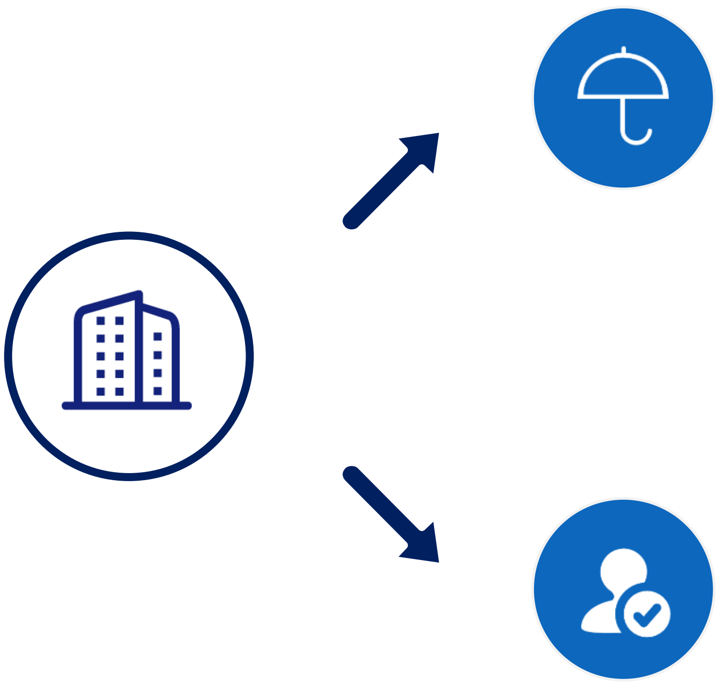
Special Service

Special services are general service packages designed for special needs. For example, pregnancy assistant provides coaching, health alerts and reminder, hospital referral and offline consultation appointment.

Source: Frost & Sullivan analysis

Overview of Corporate Digital Health Medical Support Services

- Corporate digital health medical support service is a large and comprehensive service package designed for companies. Services for insurance companies and banks are pretty different from that provided for other companies. The insurance companies and banks may incorporate the digital health medical support services into their wellness programs or VIP service packages for their high-value clients.



Insurance Companies and Banks

Besides providing routine digital health medical support services for their employees, insurance companies and banks may incorporate high-level digital health medical support services into their wellness programs and VIP service packages for their high-value clients as assessorial service or utilize the services as marketing tools to attract potential customers and maintain their existing clients.

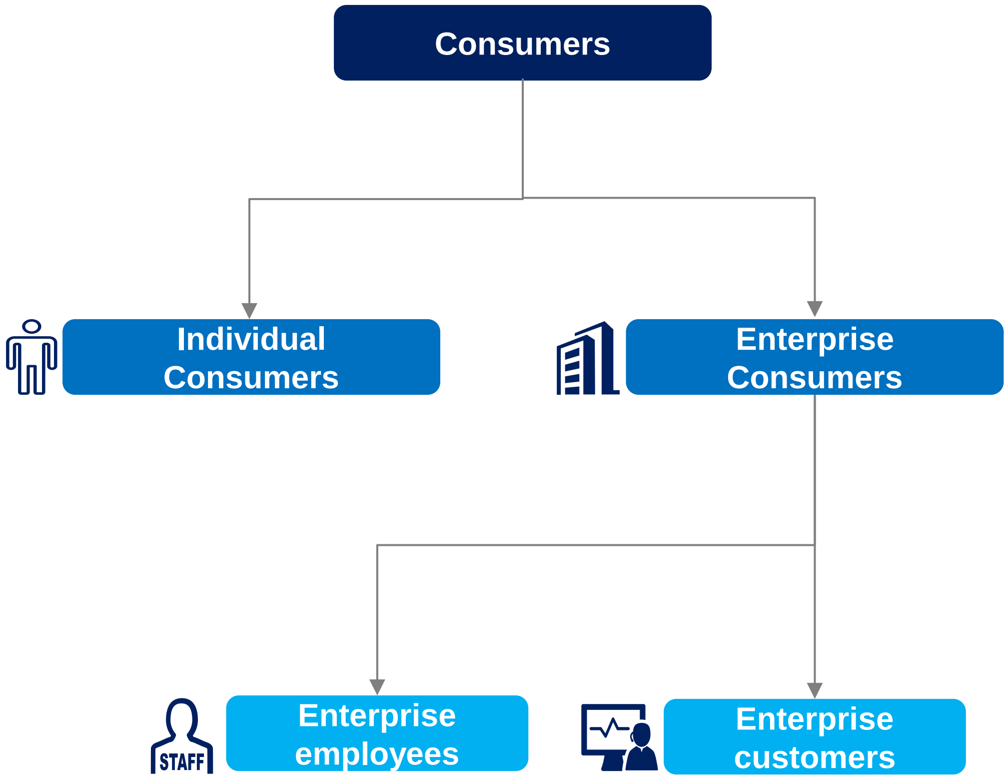
Other Companies

Large companies may purchase digital health medical support services packages for their employees as routine wellness maintenance programs such as annual body check planning, health guidance and offline meeting.

Source: Frost & Sullivan analysis

Consumers Analysis of Digital Health Medical Support Services

- Consumers of digital health medical support services can be divided into individual consumers and enterprise consumers.
- Individual consumers can manage the health of themselves and their family by purchasing membership cards of medical services, and the opening rate of the cards is generally higher under this approach.
- Enterprises purchase membership cards of medical services for their employees, which can be used as employee benefits. In addition, enterprises usually aim to enhance the customer stickiness by giving the membership cards of medical services. Compared with the individual consumers, the opening rate of the cards under this approach is lower.



- Through the healthcare service platforms, individual consumers can realize health science popularization before treatments. They also can realize online consultation, registration during treatment, and medical assistance or escort.

- The medical service platforms creates innovative health solutions for large and medium-sized enterprise customers, and the platforms help enterprises optimize the efficiency of medical treatment for employees.

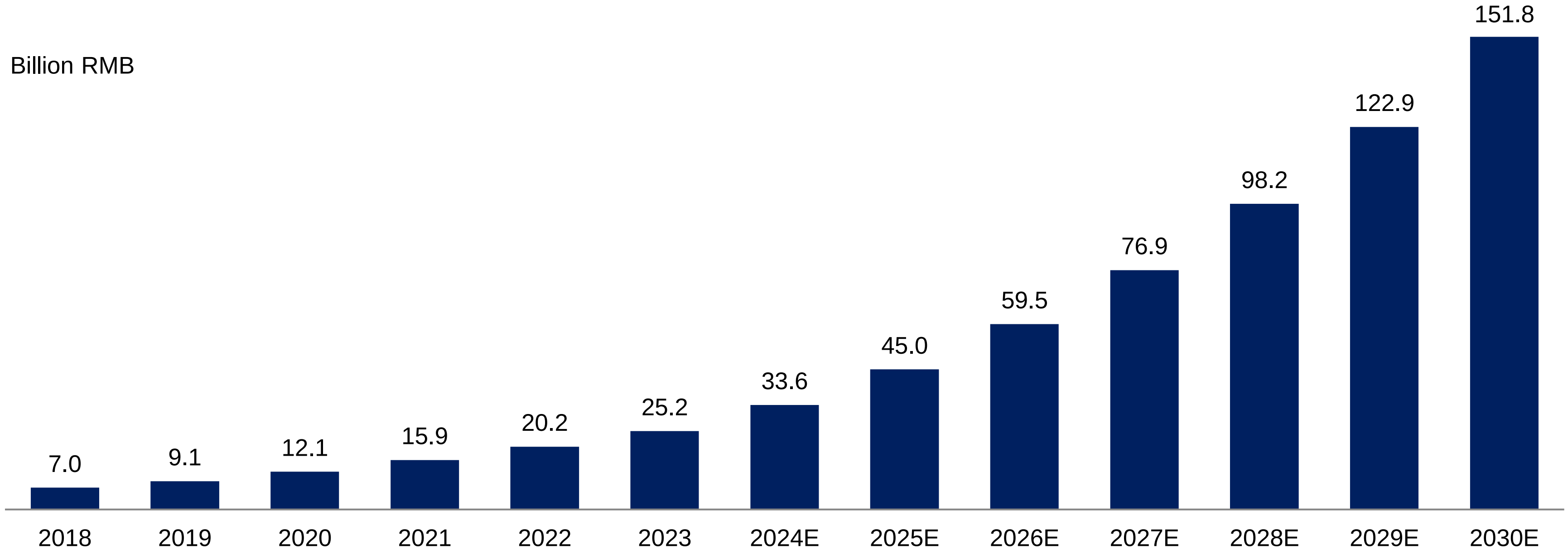
Source: Frost & Sullivan Analysis

Historical and Forecasted Medical Support Services in China, 2018-2030E

- The market size of medical support services in China increased from RMB7.0 billion RMB to RMB25.2 billion with a CAGR of 29.3% from 2018 to 2023. The market size of medical support services in China is projected to continue to increase in the future. The medical support services market is expected to reach RMB151.8 billion in 2030 with a CAGR of 32.2% in the period of 2023-2027 and 25.4% in the period of 2027-2030.

Historical and Forecasted Medical Support Services in China, 2018-2030E

Period	CAGR
2018-2023	29.3%
2023-2027E	32.2%
2027E-2030E	25.4%



Source: Frost & Sullivan analysis

Analysis of Digital Health On-demand Medical Services

Customer Acquisition

Online

Advertising
- Healthcare Related Forum
- Apps
- Famous Website
- Online Community

Public Account
- Healthcare Related Article
- Consultation
- Introduction of Company

Science Education
- Healthcare Classes on the Internet
- Colloquia
- Starface

Live Broadcast
- Online Q&A
- Live Commerce
- Introduction of Specialist Alliance
- KOL Brand Building

Offline

Community Outreach
- Hospital Outreach
- Community Promotion
- Word of Mouth
- Free Trial
- Free Gift

Service

Consultation
- Online Consultation
- Offline Consultation

Therapy
- Special Therapy for Chronic Disease

Recreation Management
- Provide Guidance and Surveillance in the period of recreation

Auxiliary Medical Service
- Auxiliary Registration Service
- Medical Service Guidance
- Communication with Doctors

User

Doctor
- Brand Building
- Hospital Introduction
- Specialist Alliance Introduction
- Patient Management

Consumer
- Recreation Management
- Chronic Disease Management
- Medical Service

Charge Mode

Subscription
- Lifelong
- Yearly
- Monthly
- Pay-per-View

Membership
- Common User
- Regular Member
- Senior Member

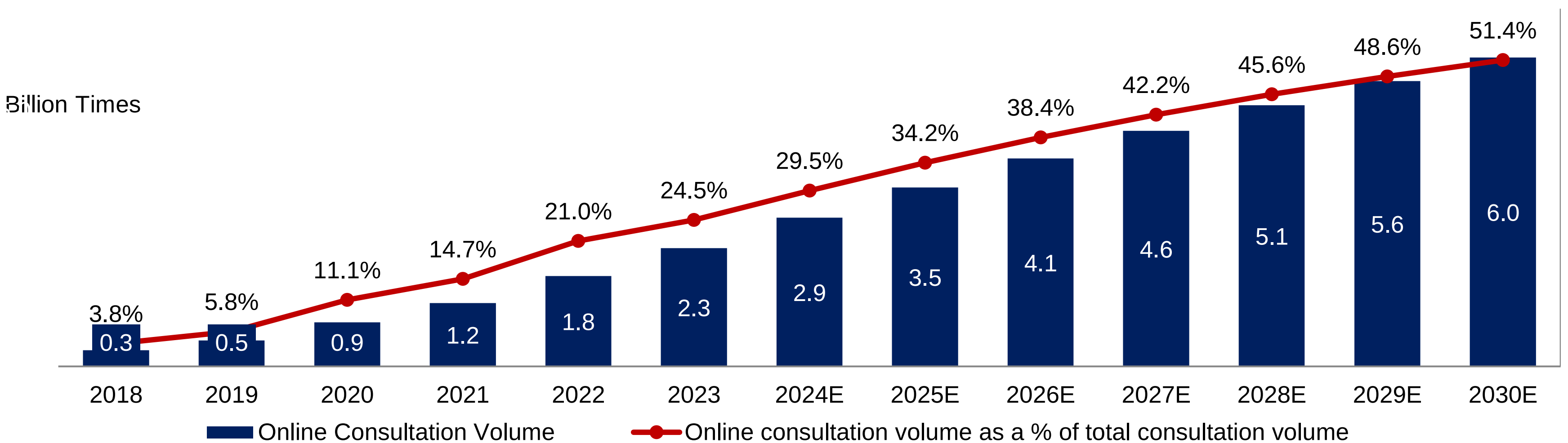
Source: Frost & Sullivan Analysis

China Online Consultation Volume, 2017-2030E

- The volume of online consultation increased from 0.3 billion times in 2018 to 2.3 billion times in 2023 with a CAGR of 48.7%. The volume is projected to be 4.6 billion times in 2027, representing a CAGR of 18.8% from 2023 to 2027. To 2030, 6.0 billion times of online consultation is estimated to take place annually, representing a CAGR of 9.5% from 2027 to 2030.
- More people have begun to use online consultations in China, particularly since the outbreak of COVID-19. A significant increase was witnessed from 2019 to 2022.

China Online Consultation Volume, 2017-2030E

Period	CAGR
2018-2023	51.8%
2023-2027E	21.4%
2027E-2030E	9.1%



Source: Frost & Sullivan analysis

Competitive Landscape of the Digital Health Service Market in China

- HealthyWay ranked no.1 regarding the number of registered physicians and top 3 regarding the number of connected hospitals in the digital health service market.

	Company	Description	Found Year	Base	Number of Registered Physicians（000）*
1	健康之路 WWW.JKZL.COM	Company mainly provides digital health and medical services and digital marketing and corporate solutions	2001	Fuzhou	854.3
2	健康160	Company connects hospitals, medical professionals, end users, and mainly provides appointment and registration, cloud hospital and operation services	2005	Shenzhen	560
3	春雨医生 你的医生朋友	Company mainly provides online medical and health consultation service	2011	Beijing	422
4	翼健康	Company mainly provides appointment and registration, health management	2015	Guangzhou	400
5	石榴云医 PomDoctor	Company mainly provides patient management, online consultation, prescription recommendation for patients with chronic diseases	2015	Guangzhou	360
6	微医 WeDoctor	Company is a medical health technology platform focusing on membership-based health management services and digital chronic disease management	2010	Hangzhou	300

**As of 2023.12.31*
**The number of physicians does not include the number of nurses or pharmacist.*
**The number of connected hospitals does not include the number of primary institutions.*

Source: Frost & Sullivan analysis

Competitive Landscape of the Digital Health Service Market in China

- HealthyWay ranked no.1 regarding the number of registered physicians and top 3 regarding the number of connected hospitals in the digital health service market.

	Company	Description	Found Year	Base	Number of Connected Hospitals*
1	健康160	Company connects hospitals, medical professionals, end users, and mainly provides appointment and registration, cloud hospital and operation services	2005	Shenzhen	14,258
2	微医 WeDoctor	Company is a medical health technology platform focusing on membership-based health management services and digital chronic disease management	2010	Hangzhou	8,000+
3	健康之路 WWW.JKZL.COM	Company mainly provides digital health and medical services and digital marketing and corporate solutions	2001	Fuzhou	7,365
4	亿家健康 ENJOY HEALTH	Company focuses on family health services, based on the Internet cloud platform and mobile technology, connects doctors and residents to create a family health service platform	2004	Shenzhen	~5,000
5	快速问医生	Company mainly provides Internet medical content service and patient recruitment solutions for clinical studies	2018	Guangzhou	~4,700
6	熙康 XIKANG	Company developed city-specific cloud hospital platform and provides Internet medical services	2011	Shanghai	~2,610

**As of 2023.12.31*
**The number of physicians does not include the number of nurses or pharmacist.*
**The number of connected hospitals does not include the number of primary institutions.*

Source: Frost & Sullivan analysis

Overview of Chronic Disease Management (CDM)

Definition

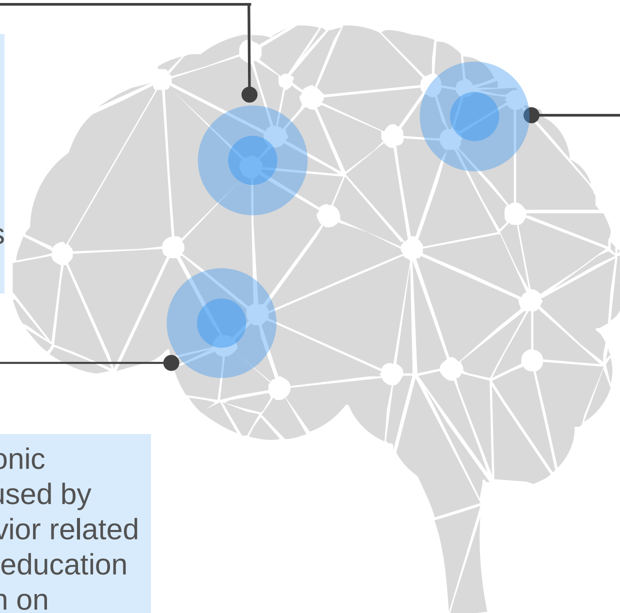
- CDM refers to the establishment of an integrated system of intervention and management for chronic disease throughout different stages of the continuum of chronic disease care, ultimately strengthening disease control, preventing disease deterioration, and controlling the overall medical cost.

Classification

- Chronic disease management in a broad sense includes not only (1)**disease management**, but also guidance to the (2)**cognition, mental state and behavior of patients with chronic diseases**, as well as (3)**the management of the social environment** in which chronic patients are located.

Disease Management

Major chronic diseases includes cardiovascular and cerebrovascular diseases, cancer, diabetes and chronic respiratory diseases, etc. Certain indicators (i.e. blood pressure, blood glucose, etc.) and patient daily activities will be closely monitored.



Cognition, Mental State And Behavior Management

Manage the patients' awareness of chronic disease, their negative mental state caused by the chronic disease, and the their behavior related to the chronic disease. E.g. medication education for better patient compliance, motivation on patient to prevent unhealthy lifestyle.

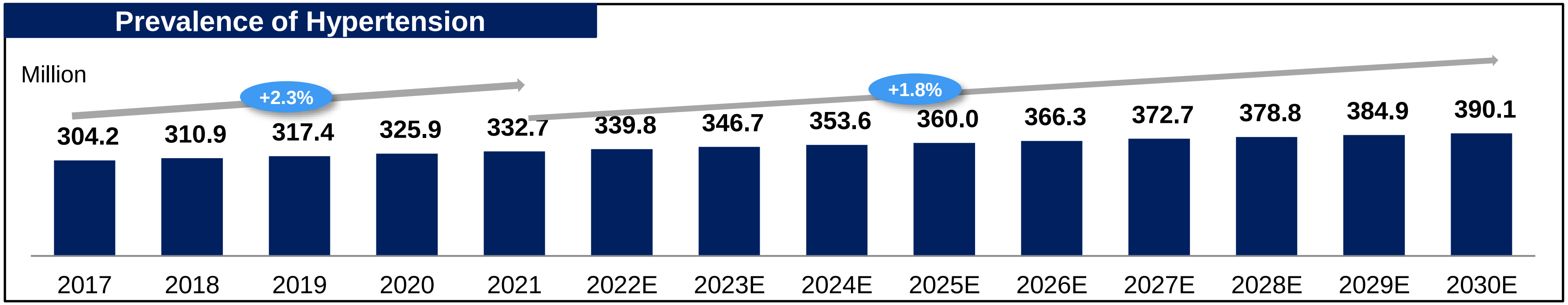
Social Environment Management

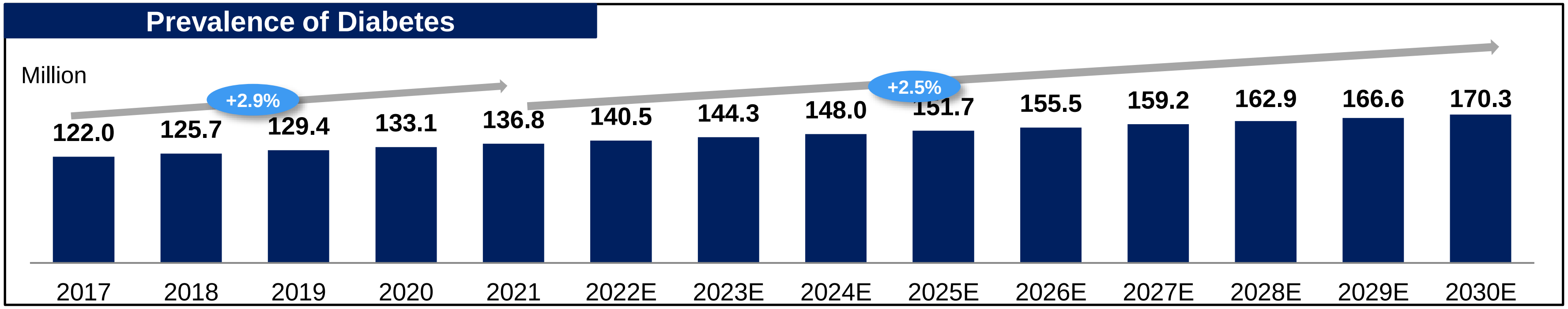
The environment of chronically ill patients includes micro-social and macro-social environment. The micro-social environment refers to the family environment, work environment, peer group, community environment and health service environment, etc. The macro-social environment includes the patients' social class, the relationships between different social classes and the change of class structure.

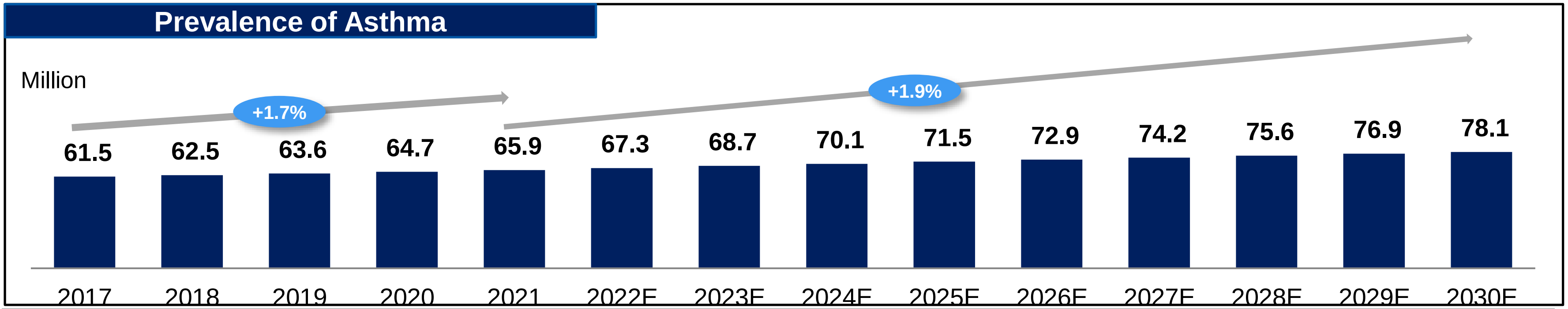
Source: Frost & Sullivan Analysis

Prevalence of Typical Chronic Disease in China, 2017-2030E

Hypertension & Diabetes & Asthma







Source: NCCD, CDC, Frost & Sullivan Analysis

Analysis of Chronic Disease Development Trend in Younger Generation

- With the rapid increase of Chinese economic and social wealth, the prevalence of chronic disease in younger generation is growing fast and chronic diseases are becoming one of the main causes for China to lose labor. Unhealthy diet and lifestyle are threatening people's health, for they may lead to chronic diseases including cancers.

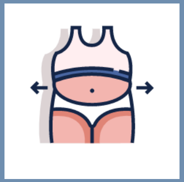
Risk Factors for Younger Generation to Acquire Chronic Disease

Unhealthy Daily Routine

- Staying up late can lead to disruptions in circadian physiological rhythms, and disruptions in circadian physiological rhythms can lead to decreased appetite, decreased productivity, and be associated with the development of diabetes and heart disease.

Smoking

- Carbon monoxide in cigarette smoke can lead to damage to the endothelial system of blood vessels, causing cardiovascular system diseases and some microvascular diseases, such as diabetes, kidney disease, etc. Smoking may also lead to stroke.



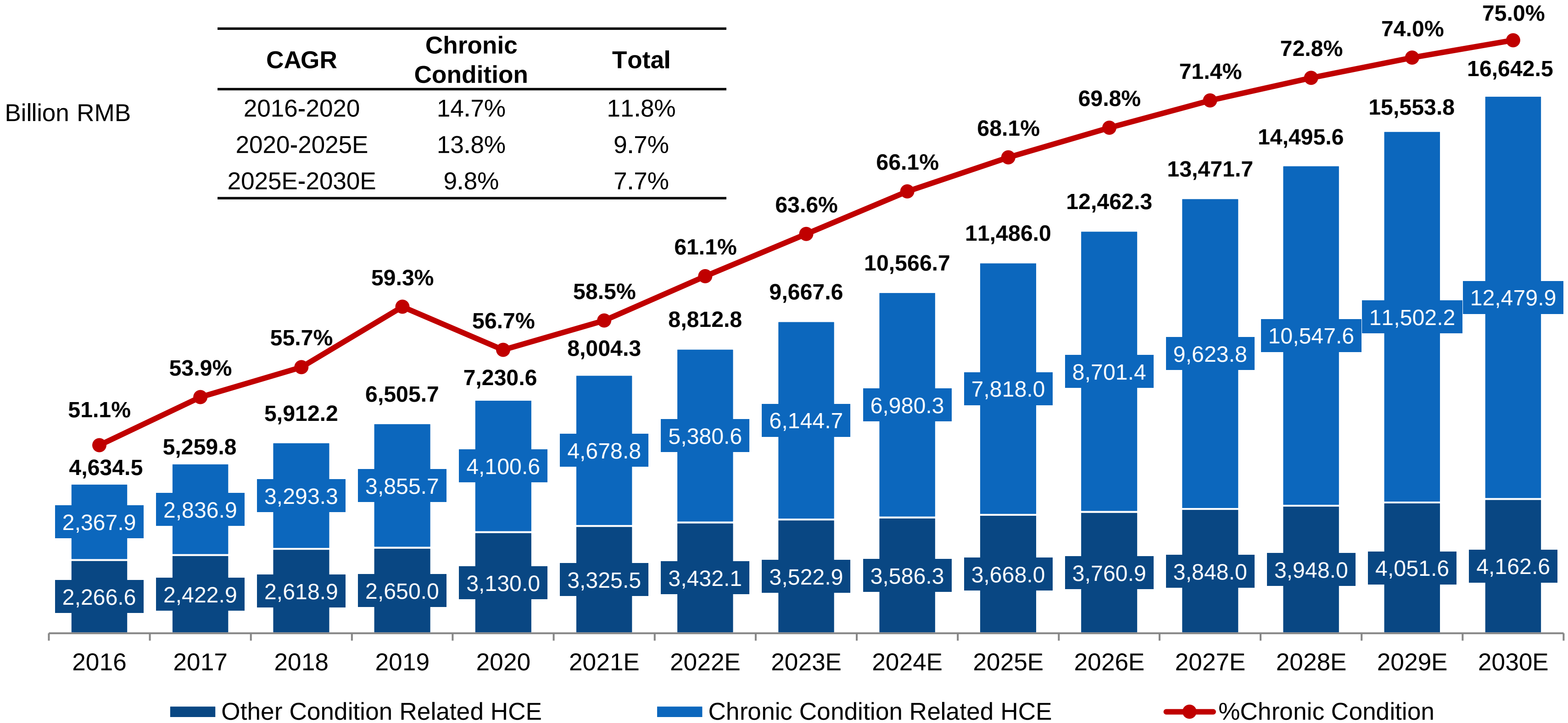
Obesity

- Overweight and obesity rate of Chinese adult residents exceeds 50%. Increased weight can increase insulin resistance, thereby increasing the risk of type 2 diabetes and the difficulty of glycemic control. Furthermore, obesity may increase the risk of getting cancer.

Source: Frost & Sullivan Analysis

China Healthcare Expenditure Breakdown by Chronic Condition and Other Condition Related Expenditure, 2016-2030E

- Due to factors such as unhealthy life style and high work and social pressure, the number of younger patients with chronic condition has risen. The increasing total number of chronic condition patients including both the young and the elderly drives the growth of chronic condition related healthcare expenditure. The CAGR from 2016 to 2020 is 14.7%, and the chronic condition related expenditure has exceeded 50% of overall healthcare expenditure since 2016.



CAGR	Chronic Condition	Total
2016-2020	14.7%	11.8%
2020-2025E	13.8%	9.7%
2025E-2030E	9.8%	7.7%

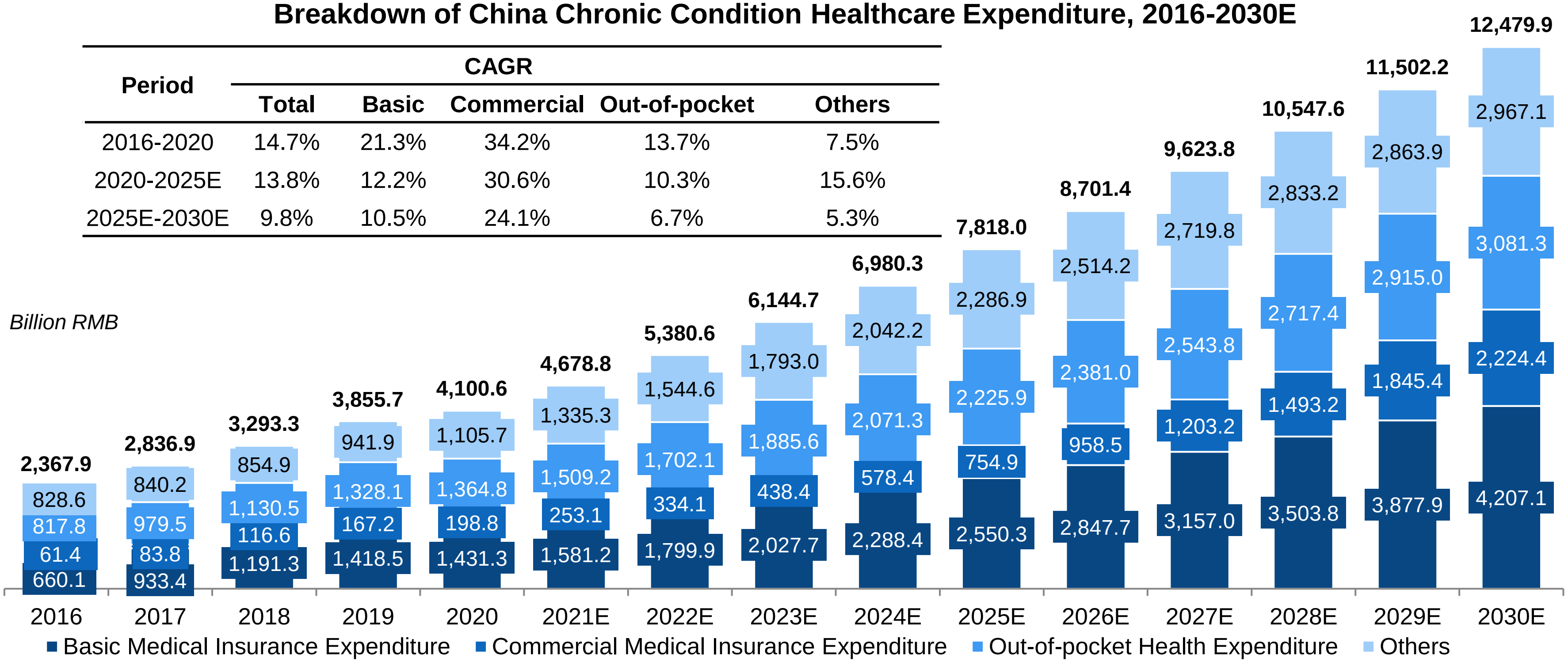
Source: Frost & Sullivan Analysis

Breakdown of China Chronic Condition Healthcare Expenditure by Payer, 2016-2030E

- Among the chronic condition healthcare expenditure, its healthcare spending is defined as the total expense of basic medical insurance expenditures, commercial medical insurance expenditures and out-of-pocket payments. Out-of-pocket chronic condition management expenditure in China is very significant and is expected to remain so in the upcoming years. In 2020, the chronic condition healthcare expenditure reached RMB4,100.6 billion in China, and the chronic condition healthcare spending reached RMB2,994.0 billion, out of which RMB1,364.8 billion was paid out-of-pocket, representing 45.6% of the chronic condition healthcare spending, and 47.8% was covered by basic medical insurance expenditure, while only 6.6% was covered by commercial healthcare insurance.

Breakdown of China Chronic Condition Healthcare Expenditure, 2016-2030E

Period	CAGR				
	Total	Basic	Commercial	Out-of-pocket	Others
2016-2020	14.7%	21.3%	34.2%	13.7%	7.5%
2020-2025E	13.8%	12.2%	30.6%	10.3%	15.6%
2025E-2030E	9.8%	10.5%	24.1%	6.7%	5.3%



Note: Others includes government non-insurance financial input, social charity donations, etc.

Source: Frost & Sullivan Analysis

Analysis of the Continuum and Stakeholder of Chronic Disease Prevention and Care

Except for patients themselves, typical stakeholders in the health continuum of chronic disease below are:

Prevention	Early Detection	Diagnosis	Treatment	Post-discharge Care
Government	Government		Medication Provider	Medication Provider
Medical Institution	Test Kits Provider	Medical Institution	Medical Institution	Management Platform Provider
	Medical Institution			Medical Institution

Prevention: Enable people to manage their own health using their obtained medical knowledge

Early Detection: Use lab-based or home-use screening kits to identify the existence of chronic diseases.

Diagnosis: Determine the disease along with its stage, give advice on medication and procedures for subsequent treatment.

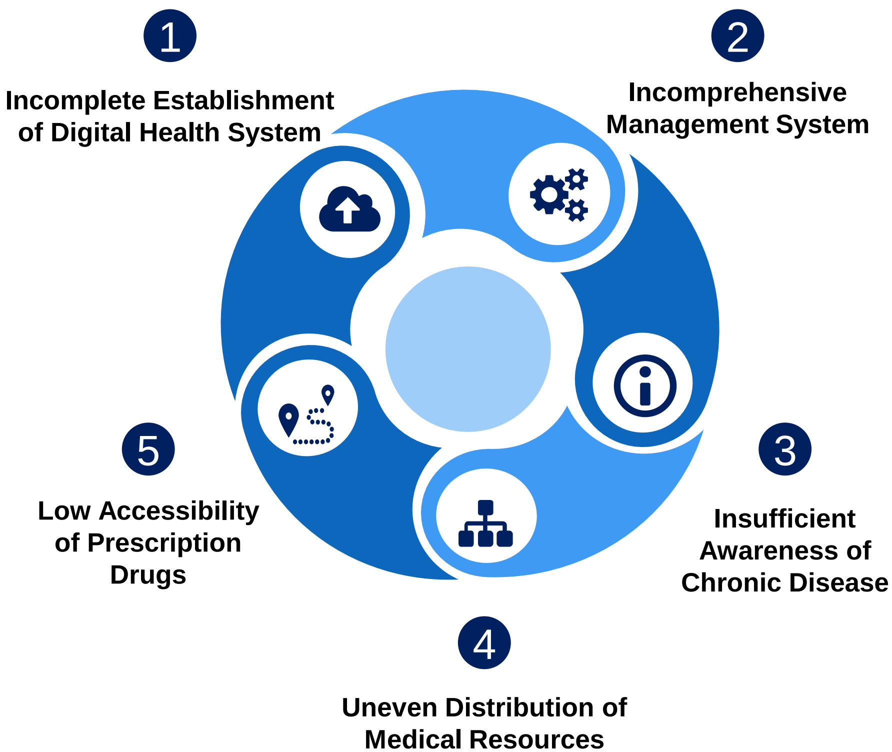
Treatment: Take medication and procedure specific measures to intervene the disease progression.

Post-discharge Care:
- Provide lifestyle counseling after patient recovery
- For patients who need long-term medication, monitor, track and manage daily drug usage, and schedule for periodic test if applicable.

Source: WHO, Frost & Sullivan Analysis

Pain Point Analysis of Current Prevention and Treatment of Chronic Disease in China

Pain Point Analysis



1 **The application of digital health system is in progress but still incomplete.** The digitalization level of the current data collection and related management for chronic disease treatment remain far behind developed countries. Islands of redundant and inconsistent information are therefore formed. In addition, post-discharge care/management should be conducted to trace patients' condition, medication, etc. to prevent readmission.

2 **Inconsistency and disjunction may exist in the current management of the prevention and treatment of chronic diseases**. Even though policies and programs had been implemented on national level to improve the current condition of chronic disease in China. The management of execution on provincial level remains not effective enough, which can ensures the implementation of each aspect of the policies or programs.

3 **The awareness of preventing and treating chronic disease in China is insufficient.** The knowledge level with respect to chronic disease in China is currently far behind developed countries, causing the difficulty in putting prevention measures into practice. Low awareness also leads to insufficient patient compliance during the treatment stage.

4 **Medical resources in China is concentrated in municipal hospitals while county hospitals target chronic diseases.** Part of the county hospitals (Grade I, II) still lack the ability of chronic disease treatment and prevention. This forces patients to be treated in municipal hospitals, resulting in an overall low efficiency in disease treatment.

5 **Low accessibility of prescription drugs as purchasing channels are primarily concentrated within hospitals.** Chronic condition patients often have to repeatedly experience the unpleasant and inefficient offline outpatient visit to renew prescription and receive their regular long-term medications. Recent policy guidelines in China are promoting prescriptions to flow out-of-hospitals which are helpful in making prescription drugs more accessible in retail pharmacies especially for those commonly prescribed for chronic condition management purposes.

Source: Frost & Sullivan Analysis

Analysis of Pediatric Chronic Disease Development and Pain Points in Pediatric Doctor Resource

- The prevalence of chronic diseases in children has increase rapidly for the past years. The obesity rate of children has grown to a dangerous level and the growth retardation rate is also high, while there is large shortage of pediatric medial resources.

Pediatric Chronic Disease Related Policy

Health China Action (2019-2030)

Focusing on disease prevention rather than disease treatment and reduce chronic disease incidence.

Report on the State of Nutrition and Chronic Diseases in China (2020)

Promote early detection of chronic diseases and reduce the risk of morbidity in high-risk groups.

Notice of China's Child Development Program (2021-2030)

Enhance the physical quality of children. Strengthening early childhood development services

Pain Point Analysis of Pediatric Doctor Resource

Insufficient Number of Pediatric Doctor

There were 135 524 pediatricians in China or ~4 pediatricians per 10 000 children. A single physician is typically responsible for 80 to 100 visits per day, with an average of >50 work hours per week.

Uneven Development of the Pediatric Care System

Eastern coastal provinces of China have a per capita gross domestic product twice as high as that of western inland provinces.

High Dropout Rate

The dropout rate of pediatricians was 12.6%, due to heavy workload and the large income gap between pediatricians and other specialists.

Lack of Appropriately Trained

32% of pediatricians had only completed 3 years of junior college. Pediatricians in China were young, two-thirds of pediatrician under 45 years of age.

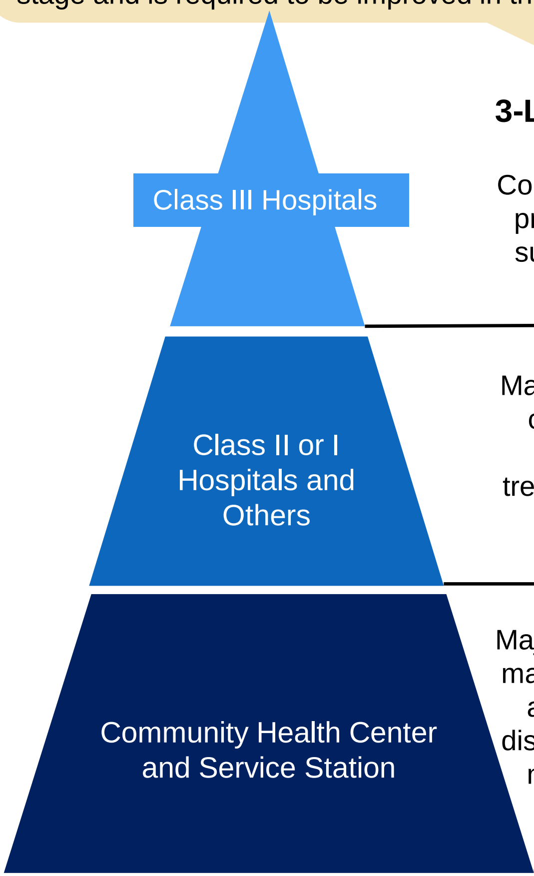
Source: Government Website, Frost & Sullivan Analysis

Current Development and Future of Chronic Disease Management in China

Offline Traditional CDM

Decentralization and graded diagnosis and treatment is being promoted in China while CDM especially in lower level remains simple and is not able to be sufficiently covered due to immature patient management method. Such model is still in the early stage and is required to be improved in the future.

3-Level CDM System



Class III Hospitals: Core of the system and provide guidance for sub-level institutions

Class II or I Hospitals and Others: Majorly responsible for common disease / chronic disease treatment and disease rehabilitation

Community Health Center and Service Station: Major operator of Health management and CDM and responsible for disease prevention and medical knowledge propagation

Internet CDM

Internet CDM platforms endow offline mode with more energy and enhance the overall efficiency with more reasonable distribution of medical resource and better customer experience. The focus of internet CDM is also projected to change in the future.

Now

- **User portrait:** majorly mid-high income level populations from Tier 1 cities
- **Service type:** common / obscure disease, consulting service before diagnosis
- **Management:** dominated by medical professionals
- **Need for Insurance Usage:** Low

Future

- **User portrait:** majorly senior chronic disease patients
- **Service type:** return visit for chronic disease
- **Management:** Increased proportion of self-management
- **Need for Insurance Usage:** High

Source: Frost & Sullivan Analysis

Process Analysis of Digital Chronic Disease Management

- The diagnosis and treatment process of Internet chronic disease management is different from the offline traditional diagnosis and treatment in hospitals. Leveraging big data, IoT and cloud computing technology, the process of Internet chronic disease management mainly includes six major steps: prevention and screening, online diagnosis and treatment, electronic prescription, online drug purchase, drug distribution and drug effect tracking.

1 Prevention and Screening

"Internet + medical examination appointment" can realize timely physical tracking and early intervention of lifestyle improvement.

Main participants: Patients

2 Online Treatment

Internet will efficiently feedback the patient’s visiting and medication data , and helps promote patient’s compliance and enhance the data sharing of cross-institutional medical care.

Main participants: Patients, Doctors

3 Electronic Prescription

Electronic prescriptions facilitate the patient's return to the clinic and enhance the continuity of chronic disease management.

Main participants: Doctors

4 Online Drug Purchase

Facilitated by the electronic prescription, chronically ill patients can purchase prescription drugs online. The advantages are particularly evident during the coronavirus epidemic period.

Main participants: Patients, Medical insurance, Pharmacy

5 Drug Distribution

The online platform cooperates with pharmaceutical companies to ensure the stable supply of drugs, and cooperates with pharmacies and logistics to ensure that drugs can be delivered faster.

Main participants: Pharmaceutical companies, Pharmacies

6 Drug Effect Tracking

Chronic disease follow-up management platform implements solutions for chronic disease in-hospital treatment and out-of-hospital grading management, helping doctors and patients maintain long-term contact.

Main participants: Patients, Doctors

Source: Frost & Sullivan Analysis

Impact of Digital Chronic Disease Management

- The characteristics of chronic diseases include long-term care, repetitive diagnosis and treatment and necessity of systematic record of medical data. Digital chronic disease management can accommodate the characteristics of chronic disease and have significant impact on current chronic disease management.

Long-term care

- Chronic diseases need long-term management. Current digital CDM service is more prescription oriented, through digital platforms, service providers have already realized the monitoring of patients' state of illness and corresponding prescription adjustment. Sales generated from drug selling is the main profit model shared by most service providers, and for patients, the efficacy of this service model is limited to disease maintenance. Along with the development of digital CDM, more service models are being developed, for example, patients now have access to some disease management therapies with clinically proved efficacy of disease reversal, which are summarized and developed by therapists during their clinical study over dozens of years. The development of these therapies not only allows patients to suffer less from the long-term treatment, but also liberates service providers from having drug sales income as the main source of income and the the fierce competition of online consultation traffic.

Allow Repetitive Diagnosis and Treatment

- Internet-based platform solve the problems of repetitive diagnosis and treatment and necessity of systematical record of medical data. It allows patients to communicate with doctors in Internet hospitals or physical hospitals to conduct diagnosis and treatment anytime and anywhere. So that, Patients would save the time and cost of each time to check health conditions in hospitals.

Store Systematic Record of Medical Data

- After each time of diagnosis and treatment, Internet store medical record to provide large convenience for the next time diagnosis and treatment, including health condition, disease progression condition, medication, treatment means, and allergic reactions.

High Accessibility to Hospitals

- Internet-based platform also solve the problems of low accessibility of medical resource for both hospitals and prescription drugs. Medical resources are unevenly distributed in China and concentrated in municipal hospitals rather than county hospitals. Part of the county hospitals (Grade I, II) still lack the ability of chronic disease treatment and prevention. With the internet-based platform, patients can conduct chronic disease treatment and prevention through online internet hospitals beyond space constraints.

High Accessibility to Prescription Drug

- Patients have low accessibility to prescription drug as purchasing channels are primarily concentrated within hospitals. Chronic condition patients often have to repeatedly experience the unpleasant and inefficient offline outpatient visit to renew prescription and receive their regular long-term medications. Internet-based platform provides a mean of ordering medications online after doctors' review and prescription and picking up their drugs for daily use in the nearby pharmacy. Especially recent policy guidelines in China are promoting prescriptions to flow out-of-hospitals which are helpful in making prescription drugs more accessible in retail pharmacies.

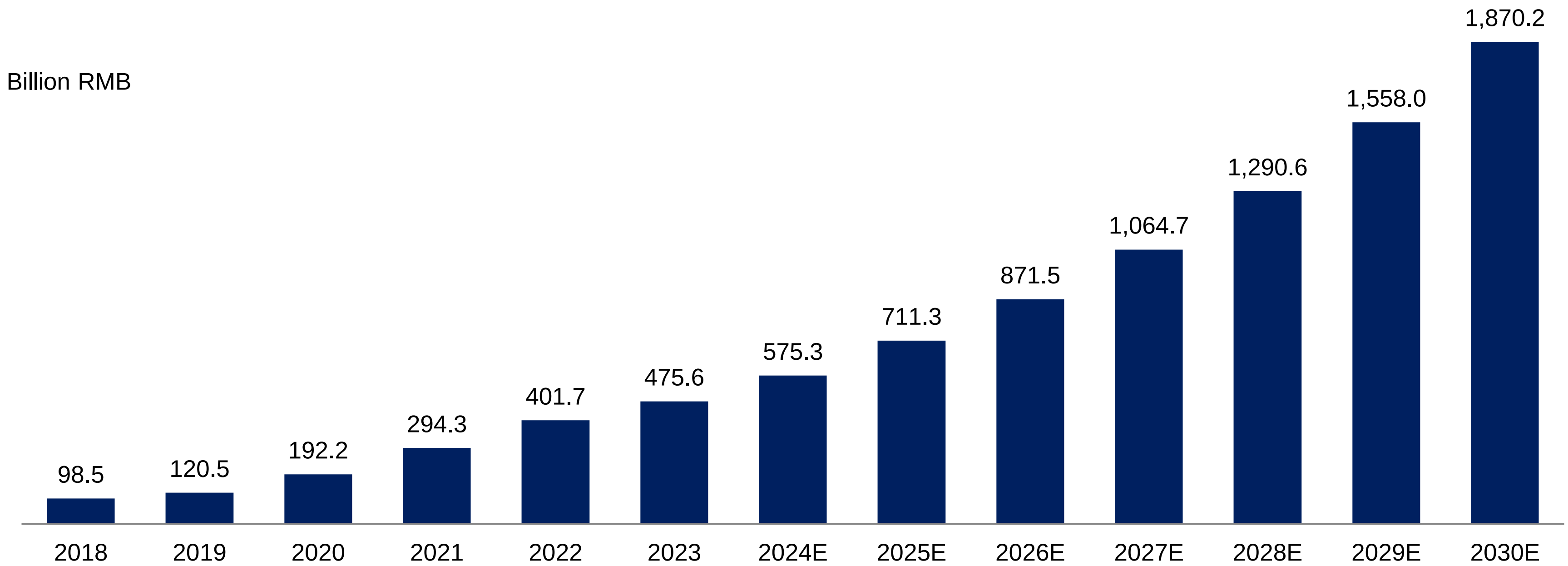
Source: Frost & Sullivan Analysis

Historical and Forecasted On-demand Medical Services in China, 2018-2030E

- The market size of on-demand medical services in China increased from RMB98.5 billion to RMB475.6 billion with a CAGR of 37.0% from 2018 to 2023. The market size of on-demand medical services in China is projected to continue to increase in the future. The on-demand medical services market is expected to reach 1,870.2 billion RMB in 2030 with a CAGR of 22.8% in the period of 2024-2027 and 20.7% in the period of 2027-2030.

Historical and Forecasted On-demand Medical Services in China, 2018-2030E

Period	CAGR
2018-2023	37.0%
2024E-2027E	22.8%
2027E-2030E	20.7%



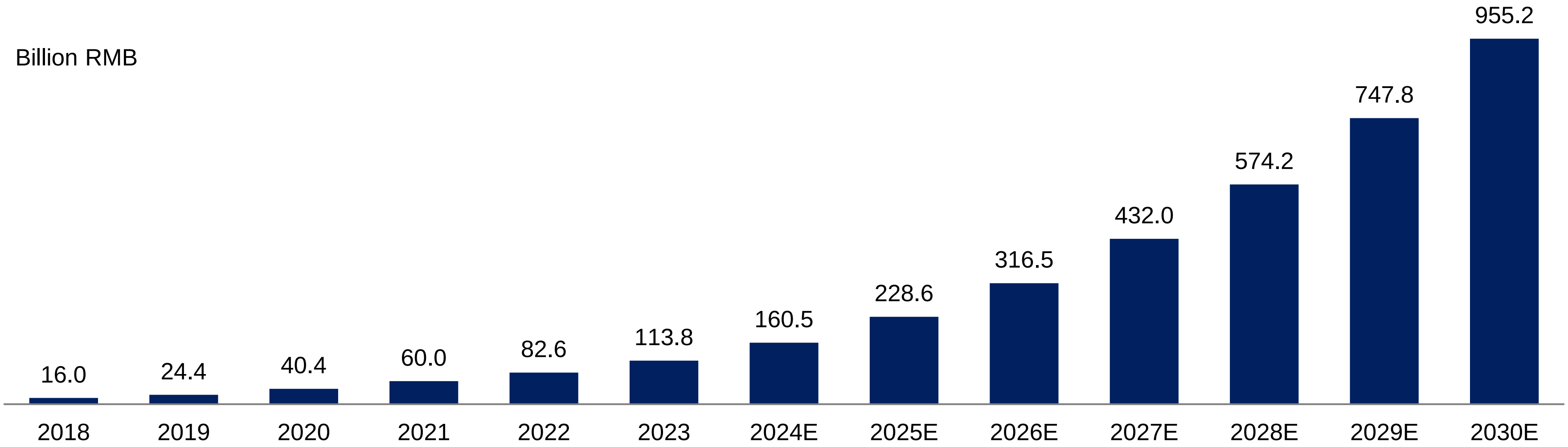
Source: Frost & Sullivan analysis

Historical and Forecasted Digital Health Services Market Size in China, 2018-2030E

- The market size of Digital Health services in China increased from RMB16.0 billion to RMB113.8 billion with a CAGR of 48.0% from 2018 to 2023. The market size of Digital Health services in China is projected to continue to increase in the future. The Digital Health services market is expected to reach RMB955.2 billion in 2030 with a CAGR of 39.1% in the period of 2024-2027 and 30.3% in the period of 2027-2030.

Historical and Forecasted Digital Health Services Market Size in China, 2018-2030E

Period	CAGR
2018-2023	48.0%
2024E-2027E	39.1%
2027E-2030E	30.3%



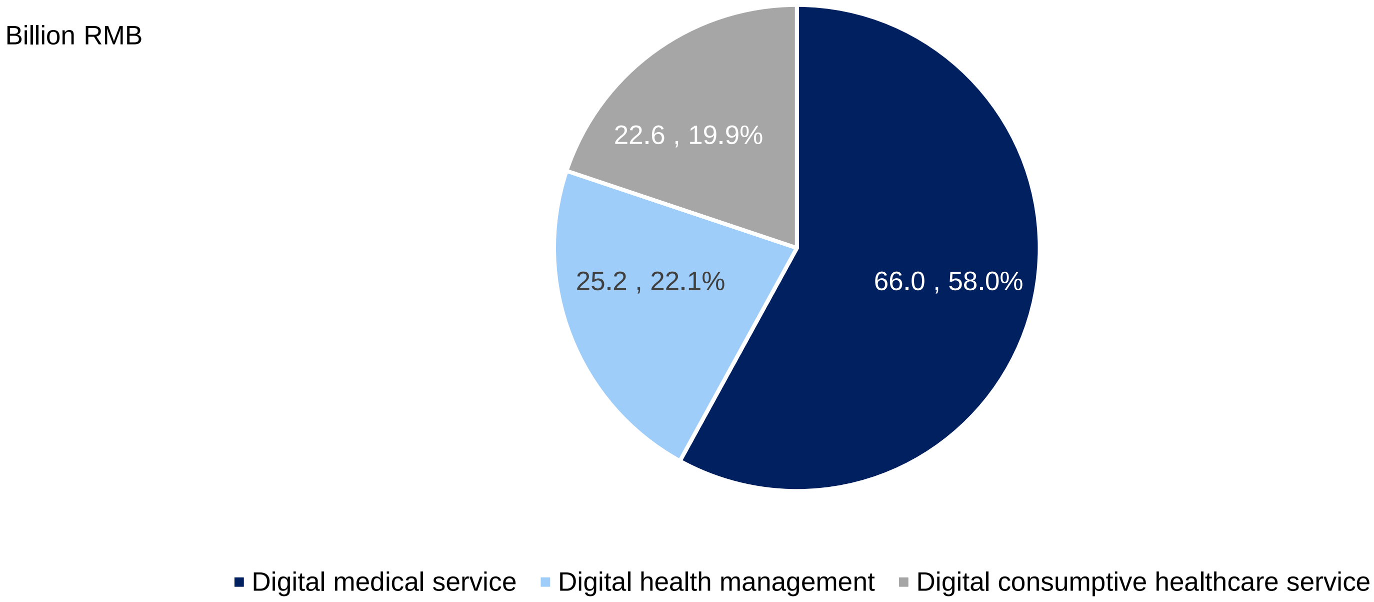
Note: This market does not include the pharmaceutical e-commerce market.

Source: MOFCOM, Annual reports of relevant companies, Frost & Sullivan Analysis

Historical and Forecasted Digital Health Services Market Size in China, 2023

- The digital health service market is primarily composed of the digital medical service market, digital health management market and digital consumptive healthcare service market.
- With the advancement of digital technology, medical services that conventionally take place offline is enabled online. The entire process from registration to medicine pick-up can be digitalized, resolving the current pain points of healthcare services. Digital health management service refers to a series of products and services that promote health and prevent diseases by digital means. It covers the whole process of comprehensive monitoring, analysis, evaluation, consultation and guidance of health, and services provided to health insurance products. The digital consumptive healthcare service industry is relatively the smallest part among digital health services market, while it is expected to expand rapidly in the future with phenomenal potential.
- The market size of the digital health service market reached RMB113.8 billion in 2023.

Historical and Forecasted Digital Health Services Market Size in China, 2023



Source: Annual Reports, Public Information, Frost & Sullivan Analysis

Competitor Analysis of Digital Health Services

- To integrate various healthcare services, healthcare service platform introduced health management service based on family physicians.
- As the key to realize the national hierarchical diagnosis and treatment policy, those health management service aims to provide the whole process personal health management service before, during and after hospital visits, from online to offline.
- HealthyWay ranked the first in terms of the number of medical support services in the digital health service market.

	Start Year	Month Cost* (RMB)	Listed company	Time of Listing	Online & Offline Services	Digital Retail Pharmacy	Family Doctor Services
平安好医生	2019.08	1029 (four people)	01833.HK	2018.05	✓	✓	✓
JDH京东健康	2020.08	3699（three people）	06618.HK	2020.12	✓	✓	✓
微医 WeDoctor	2017.11	599（three people）	✗	✗	✓	✓	✓
好大夫在线	2016.10	1399（three people）	✗	✗	✓	✗	✗
健康之路 WWW.JKZL.COM	2016	69~99（five people）/one month	✗	✗	✓	✗	✓

Note: the month cost could be affected by different payment mode and service times; the average daily consultation volume statistics are from the end of 2021 to end of 2023.

Source: Frost & Sullivan analysis

Competitor Analysis of Digital Health Services Market (1/2)

Ranking	Company	Principal Business	2023 Digital Health Service Revenue (Million RMB)	Market Share
1	微医 WeDoctor	Company is a medical health technology platform focusing on membership-based health management services and digital chronic disease management	~1,500	3.3%
2	平安好医生	Company established a unique business model based on "Managed Care + Family Doctor Memberships + O2O Healthcare Services"; listed in Hong Kong	~1,200	2.2%
3	阿里健康	Company mainly concentrated on the fields of pharmaceutical e-commerce, medical services and digital healthcare; listed in Hong Kong	860.3	1.0%
4	熙康 XIKANG	Company developed city-specific cloud hospital platform and provides Internet medical services	403.5	0.4%
5	健康之路 WWW.JKZL.COM	Company mainly provides digital health and medical services and digital marketing and corporate solutions	297.5	0.3%
6	圆心科技	Company offers out-of-hospital patient services, provider-enabling services and healthcare value chain enabling services	233.3	0.3%
7	智云健康 ClouDr.	Company operated as one-stop chronic disease management and smart medical platform, principal business covers hospital/pharmacy/medicine/individual solution; listed in Hong Kong	158.9	0.2%
8	医渡云 YIDUCLOUD	Company offers healthcare solutions built on big data and artificial intelligence technologies; listed in Hong Kong	~80.0	0.2%

Source: Annual Reports, Public Information, Frost & Sullivan Analysis

Competitor Analysis of Digital Health Services Market (2/2)

Ranking	Company	Principal Business	2023 Number of registered individual users (Million)
1	平安好医生	Company established a unique business model based on “Managed Care + Family Doctor Memberships + O2O Healthcare Services”; listed in Hong Kong	~440
2	微医 WeDoctor	Company is a medical health technology platform focusing on membership-based health management services and digital chronic disease management	~300
3	好大夫在线	Company has been engaged in hospital and doctor information inquiry, graphic, text consultation, telephone consultation, remote video outpatient clinic, accurate outpatient appointment, post-diagnosis disease management, family doctor, disease knowledge popularization, and other fields	~210
4	健康之路 WWW.JKZL.COM	Company mainly provides digital health and medical services and digital marketing and corporate solutions	185.7
5	春雨医生 你的医生朋友	Company is a medical health technology platforms focusing on online medical and health consulting services and connects users who search for medical information	~160

Note: This list does not include digital healthcare companies primarily focusing on pharmaceutical e-commerce.

Source: Annual Reports, Public Information, Frost & Sullivan Analysis

Entry Barriers of China Digital Health Service Market

Patient Privacy

- Through internet diagnosis and treatment process, patients usually need to provide detailed personal information and images or videos to present symptoms. The doubt towards patient privacy would create difficulties in patient acquisition if the service providers display credibility problems. In the traditional medical environment, such as hospitals or clinics, information is usually shared through conversations or written documents. Therefore, cyber security plays an important role to keep patients' information safe and private. In the future, it is expected that the platforms can promise the privacy of patients to make them feel relieved and safe in the whole process.

Diagnosis and Treatment Quality

- It is less convenient for patients to describe their symptoms online, while it is also more challenging for physicians to diagnose and treat. Such deficiency may compromise diagnosis quality and lead to misdiagnosis and ineffective treatment, affecting the overall quality of online medical service. Therefore, the availability of experienced and skilled physicians is indispensable for new players planning to provide online diagnosis and treatment services.

Technological Restriction

- It is critical to offer an organized user experience to attract and retain individual users. Strong technological capabilities are required to establish and provide quality online diagnosis and treatment services.

Source: Frost & Sullivan analysis

Growth Drivers of China Digital Health Service Market

Increasing Aging Population and Chronic Disease	• With more aging population in China in the future years, there will be higher population basis for chronic diseases, and therefore emerges the importance of chronic disease management. Traditionally, patient compliance and profile management are two of the most common challenges in chronic disease management. With the help of digital technology, physicians can easily monitor and keep track of electronic records of patients, which will help manage chronic disease more easily. In this way, digital diagnosis and treatment is expected to be used more widely.
Advocacy on Precision Medicine	• Unlike conventional 'one fits all' treatment, precision medicine is a model that is gaining more popularity because it allows doctors to select and customize treatment to achieve potentially best outcomes. Given such an idea, more attention will be given on how to keep complete and accurate records of patients' information, based on which precise medical decisions can be made. As one of the best ways to keep good record of patients, digitization is expected to be adopted more widely in diagnosis and treatment market, thereby driving the market forward.
Unequal Distribution of Offline Medical Resources	• China's medical resources are concentrated in large Class III hospitals which only accounted for 8% of the total number of hospitals in China but serviced 52% of the total outpatient visits in 2019. Meanwhile the Class III hospitals are concentrated in more affluent cities and provinces. The severe inversion and uneven distribution of medical resources and diagnosis demands have caused poor patient experience. For instance, on average, diagnosis time only accounted for 4.4% (8 minutes) out of the 3 hours people spent on an outpatient visit in 2019. In contrast, online consultations offer patients the accessibility of quality medical resources regardless of geography and are well recognized in terms of low cost and high efficiency. More importantly, online consultations to become a critical component in achieving a hierarchical diagnosis and treatment system in China by effectively channeling the right patients online or offline, as a way to further alleviate the current constraints on China's healthcare system.
Ever Expanding Online Consultation Capabilities	• Through two-way referral with offline medical institutions and the advancement of medical technology services online, such as testing and imaging, online consultations are continuing to expand their service offerings in addition to enhancing its strength in treating minor and chronic diseases.

Source: Frost & Sullivan analysis

Future Trends of China Digital Health Service Market

Further Improvement of the Payment System	• In 2020, the government has introduced a number of policies, including the cost of qualified Internet+ medical services within the scope of public health insurance and the promotion of public health insurance payment reform. Public health insurance payments will shift from payments by service type to more diversified payment methods (payments by disease type, capitation, etc.) and cover more online medical services. Commercial health insurance products will also continue to improve will develop innovative health insurance products, such as commercial health insurance products that integrate public health insurance with commercial health insurance.
Online and Offline Integration	• May, 2020，State Council enacted Opinions of the General Office of the State Council on Promoting the Development of “Internet + Medical Health“. The policy points out that Internet hospitals should achieve data sharing and business synergy with offline dependent physical medical institutions to provide seamless and continuous services between online and offline. Under the guidance and support of the policy, online + offline digital chronic disease management services are expected to develop rapidly.
Rapid Development of Membership-based Medical Services	• As people's disposable income increases and health awareness grows, consumer demand is likely to shift from a treatment-oriented approach to diseases to a health-oriented model, such as high-end or specialized and medical services.

Source: WHO, NSBC, OECD, Frost & Sullivan analysis

Opportunities of China Digital Health Service Market

Online Consumption has Become a Bright Spot	• Since the outbreak of the COVID-19, online consumption has become the biggest highlight of the entire consumer market. The new economy based on internet technology has exploded and the non-contact economy has emerged, with online medical check-ups, medical aesthetics, ophthalmology and dentistry, such as online consultation, registration and medicine purchase, bucking the trend. At the same time, the popularity of the new generation of information technology applications and the support of national policies will further promote the emergence of new businesses and new models in the digital health industry.
Online Re-visits and Medication Purchases	• Currently, outpatients with chronic diseases who have a clear clinical diagnosis, stable medication regimen and require long-term medication can be prescribed long prescriptions of commonly used drugs for chronic diseases, which are generally valid for six months and are charged by internet hospitals in line with offline medical treatment and can be paid by medical insurance. Given the advantages of fast and convenient access to digital health medical services, the implementation of online repeat drug purchasing will continue to present a huge opportunity for the development of digital health medical services.
Digital Insurance	• Digital insurance enables interoperability across channels and accommodates the need for a unified customer experience throughout the insurance process. For the digital health medical services industry, digital insurance can ensure that customers achieve faster efficiency in consultation, insurance and claims, which greatly increases the convenience of online consultation and creates opportunities for digital health medical services.

Challenges of China Digital Health Service Market

Qualification Requirements of Internet Hospital Gradually Become Higher	• On October 2021, the State Health and Welfare Commission issued the "Rules on the Regulation of Internet Medical Treatment (Draft for Public Comments)", followed by the "Rules on the Regulation of Internet Medical Treatment (Trial Implementation)" jointly issued by the State Health and Welfare Commission and the State Administration of Traditional Chinese Medicine on February 2022. The "Rules on the Regulation of Internet Treatment (for Trial Implementation)" clearly regulated that patients attending Internet hospitals must meet the conditions for re-consultation, emphasized the strict process of prescription before medicine, and required that Internet treatment be integrated into the overall medical service regulatory system based on physical medical institutions. Under the background of tightening regulation, domestic digital health services will face greater challenges.
Online Medical Insurance Reimbursement Urgently Needs to be Addressed	• On October 2020, the National Bureau of Medical Security issued the "Guidance on Actively Promoting "Internet+" Medical Services for Medical Insurance Payments", which proposed that localities can start with outpatient chronic disease management and gradually expand the scope of medical insurance "Internet+" payments for common and chronic diseases. "The opinion also suggests that localities can gradually expand the scope of medical insurance payments for common and chronic diseases, starting with outpatient chronic disease management. However, in the process of implementation, the promotion of online medical insurance payments is still very limited. This is mainly due to the fact that China's Internet hospital service standardization system has not yet been established, and the health insurance department has no way to set prices, include them in the reimbursement catalogue, or determine the reimbursement rate. This has become a bigger challenge for the development of digital health services.
Further Expansion of Out-of-hospital Channels Amid Prescription Outflow Trend	• On November 2020, the National Health Insurance Administration issued the "Guidance on Actively Promoting the Payment of Medical Insurance for "Internet+" Medical Services", which clearly supports the flow of "Internet+" medical repeat prescriptions. The policy explicitly supports the flow of prescriptions for "Internet+" medical services. It explores the interconnection of information on prescriptions purchased from designated medical institutions and designated retail pharmacies to facilitate the flow of prescriptions for "Internet+" medical services. In recent years, many provinces and cities such as Hunan, Shandong, Jiangxi, Gansu and Guangdong have been actively exploring the establishment of a prescription flow model under government supervision. As prescription flow platforms are rolled out across the country, the out-of-hospital market will further expand in scale. • Against the backdrop of prescription outflow and the implementation of the DRG/DIP policy, head pharmacies have long laid out hospital-side pharmacies and built DTP pharmacies to solve the problem of drug entry into hospitals, which have now taken shape and have a stronger capacity to undertake prescription outflow. However, DTP pharmacies are generally equipped with pharmacy professionals to provide patients with drug therapy management services, and require high storage and distribution conditions for special drugs, information management systems and drug quality assurance capabilities, thus posing a greater challenge to enterprises.

Challenges of China Digital Health Service Market

Market Brand Influence	• With the development of Internet healthcare, pharmaceutical e-commerce has gradually emerged. The business model of pharmaceutical e-commerce mainly includes the platform presence of well-known pharmaceutical enterprises or the use of the huge downstream demand to seek a greater degree of bargaining power from upstream pharmaceutical enterprises, whose market share is mainly determined by the platform and traffic, for example, the third-party platform Ali Health and Jingdong Health, which have larger traffic, account for a larger share, and the latter manufacturers face a greater challenge in platform and traffic construction.
Offline Delivery Capability	• Delivering medicines to users quickly is another major challenge faced by digital health service companies, and strong delivery capability is one of the important indicators for consumers to choose a digital health service platform. Currently, most of the pharmaceutical O2O sector relies on third-party delivery platforms, and these delivery personnel are often non-professional couriers who are unable to avoid problems such as contamination, breakage and replacement of medicines during the delivery process. Therefore, offline delivery capability will become a key factor for digital health service companies.

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2 Analysis of China Digital Health and Wellness Market

3 Analysis of China Digital Health and Medical Service Market

4 **Analysis of China Digital Health Corporate Service Market**

Overview of Digital Health Marketing Service

- Digital health marketing is an emerging marketing method based on multiple electronic channels such as telephone, SMS, email and social media to achieve precision marketing and data-driven marketing results.

Traditional marketing + Internet

Digital Health Marketing

Mobile & Computer

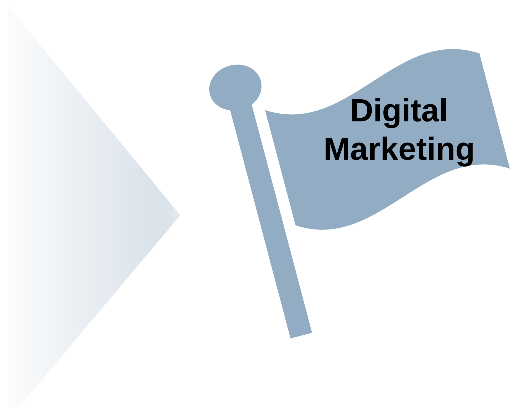
Multi-device

Cloud Computing & Big Data

Technology

➢ **The profit margin of the pharmaceutical industry is compressed, and the marketing model needs to be transformed to digital health marketing.**

- Volume-based Procurement (VBP)→Generic Drug Profits
- Government Reimbursement Negotiations →Innovative Drug Profit
- Two Invoices System→ Circulation Profit



Advantages of Digital Health Marketing

1. Mobility
2. Lower promotion cost
3. Timely reach
4. Broader reach to physicians
5. Direct access to physicians
6. Continuous interaction

Digital Approach to Healthcare Marketing

Traditional healthcare marketing methods

Academic conference for MR

- ◆ **Virtual visits**
- ◆ **Online conference**
- ◆ **Analysis of market intelligence dynamics**
- ◆ **Media matrix**
- ◆ **Large-scale case collection**

Source: Frost & Sullivan Analysis

Business Model of Digital Health Marketing Service

- Digital health marketing platforms serve as customer relationship management (CRM) systems to manage and analyze usage track for companies in all industries, which is the basic function of medical digital health marketing service.
- Small and medium-sized healthcare companies use digital health marketing to collect user information and store it on a public SaaS platform.
- Large healthcare companies use digital health marketing to collect user information and store it on a customized private SaaS system.

Business Model

Basic CRM system

Suitable for all industries, not specific for healthcare industry

Enterprises provide basic marketing management platform for healthcare companies, which can be based on the specific needs of the healthcare industry to carry out customized transformation, or be a widely used CRM system in most industries. The product is capable of managing and analyzing users' usage track, but as providing service of medical marketing is strongly professional, this kind of platform has not become the mainstream product of medical digital health marketing service.

Public SaaS system

Standard platform for small-to-medium healthcare companies

It provides a public digital health marketing SaaS platform for healthcare companies, which integrates a large number of functions such as online visit, academic conference, case collection, etc. All the users use the same digital health marketing system to store information on the same public cloud server. This kind of platform is suitable for small and medium-sized healthcare companies with limited investment in digital health marketing.

Private SaaS system

Customized platform for large healthcare enterprises

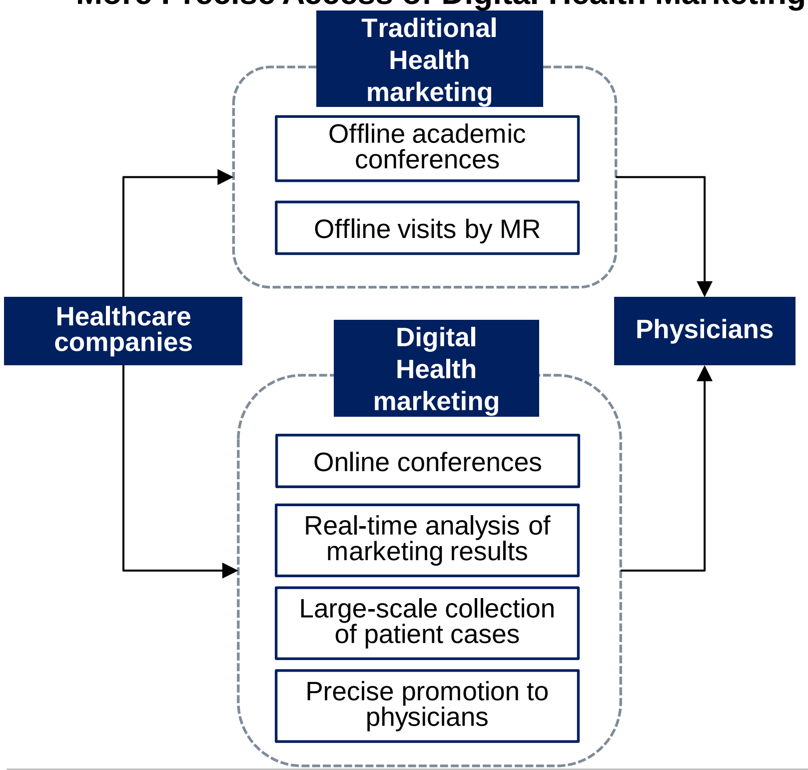
Enterprises provide private digital health marketing SaaS platform for healthcare companies. On the basis of public cloud SaaS platform, further customization is carried out according to the specific needs of healthcare companies, and private cloud server is used to store relevant information. This kind of platform is suitable for large healthcare companies with large investment in digital health marketing.

Source: Frost & Sullivan Analysis

Comparison of Efficiency of Traditional Health Marketing and Digital Health Marketing Service

- Healthcare companies reach physicians through offline activities in the traditional way of marketing. Through digital health marketing, they can hold online activities to have precise access to physicians via online data analysis.
- Digital health marketing is more cost-efficient than offline marketing because online channels are usually free while there is a considerable cost to hold offline conferences and to pay the medical representative (MR).
- Digital health marketing is more time-efficient than offline marketing by holding campaigns online and generating timely feedbacks.

More Precise Access of Digital Health Marketing



Higher Efficiency of Digital Health Marketing

Cost-efficient

Digital health marketing is less expensive than traditional marketing. Many online marketing channels are free. For instance, creating an account on social media platforms is free. You only need to devote time for its maintenance. Search Engine Optimization(SEO) service requires placement of the right keywords to bring organic leads or people searching your practice. Other services such as website creation, email marketing, etc. are affordable and reap good results for a longer time.

Time-efficient

Digital health marketing allows enterprises to save time to have marketing campaigns specific to gender, location, age, symptom or treatment. Whether based on demographics or geography, enterprises can reach their target audience easily. Digital health marketing offers various tools to track leads and conversions through online marketing activity and save time to get feedback. It guides enterprises on the type of investment and how it impacts practice.

Source: Frost & Sullivan Analysis

Opportunities for Digital Health Marketing Service in China

- The digital pharmacy marketing industry is in a phase of rapid expansion, with multiple opportunities for positive development. The impact of the "two-invoice system" and centralized procurement on pharmaceutical companies, the spurt of innovative drugs coming to market as a result of the healthcare reform, the limitation of offline marketing because of the rapid advancement of digital technology in recent years have provided a favorable market environment for digital health marketing.

Centralized procurement requires efficient marketing models

With the nationwide implementation of the "4+7" centralized procurement and the “two-invoice” system, drug prices are on a downward trend and pharmaceutical companies are in urgent need of controlling sales costs to maintain their profitability. In addition, if a drug enters centralized procurement, a company's marketing investment can be reduced, and the more products a company enters centralized procurement, the more savings in sales costs.

RWS Helps Companies to Promote Their Products

When drugs and medical devices are launched, they require significant financial investment in their dissemination. Data generated from real-world studies can enable the development of drugs and medical devices to be interlinked with their dissemination. By collecting data on the actual effects of innovative drugs and medical devices in clinical use, RWS assists doctors in making clinical decisions in different situations, which facilitates the efficient promotion of drugs and medical devices.

Growing Demand for Digital Marketing

Given policy pressure and the need to control costs, healthcare companies need to think about how to improve their input-output ratio. As a result previous communication models will change. Medical companies will have to develop medical content and product communication models that are more attractive to target physicians in order to meet the demands of digital marketing. However, given the limited transition costs and inexperience, the demand for academic digital marketing services will continue to grow.

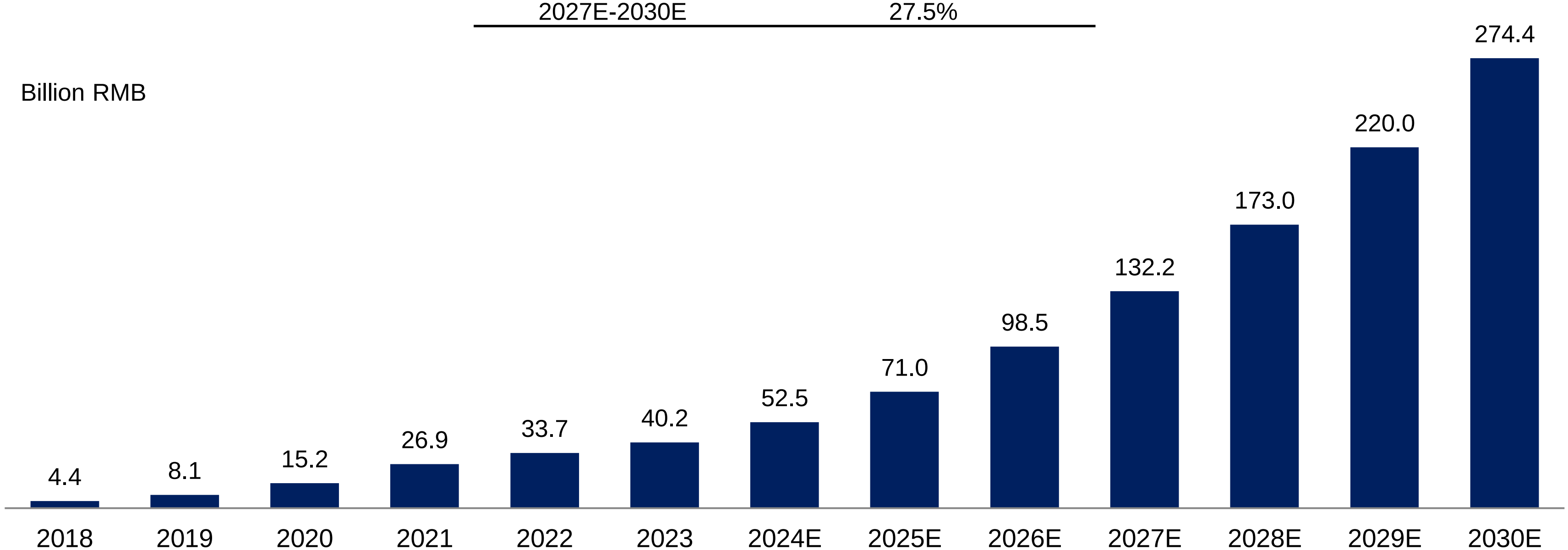
Source: Frost & Sullivan Analysis

Enterprise Spending on Digital Healthcare Marketing in China, 2018-2030E

- Affected by centralized procurement, how to reduce marketing costs has become an urgent issue for healthcare enterprises. At the same time, it is also difficult to carry out normal offline marketing due to the Covid-19.
- The digital health marketing market, which has the characteristics of flexible marketing methods and abundant physician resources, has ushered in an explosive period. The enterprise spending on digital health marketing has increased from RMB4.4 billion in 2018 to RMB40.2 billion in 2023. It is estimated that in 2030, the spending will reach RMB274.4 billion, with a CAGR of 36.1% from 2024 to 2027 and 27.5% from 2027 to 2030 .

Enterprise Spending on Digital Healthcare Marketing in China, 2018-2030E

Period	CAGR
2018-2023	55.6%
2024E-2027E	36.1%
2027E-2030E	27.5%



Source: Frost & Sullivan Analysis

Historical and Forecasted Digital Health Corporate Service Market Size in China, 2018-2030E

- The digital health corporate service market in China is at its early stage of development, and market players in the industry are still evolving and optimizing their business models. Market players offer diverse services and solutions, often different from each other, to address the diverse needs of pharmaceutical companies, medical institutions, and other corporations. It is estimated that there were over 100 digital health corporate service providers in China as of December 31, 2023. These service providers focus on different fields of this market with various business models, which may include the combination of different corporate solutions and services, such as digital marketing services, software and system development services, and RWS support services. The different combinations of services and solutions provided by market players have led to a fragmented digital health corporate service market in China.
- Under the influence of various factors, The market size of digital health corporate service in China increased from RMB6.7 billion to RMB58.9 billion with a CAGR of 54.4% from 2018 to 2023. The market size of digital health corporate service in China is projected to continue to increase in the future. The digital health promotion and system solution market is expected to reach RMB352.2 billion in 2030 with a CAGR of 33.0% in the period of 2024-2027 and 25.4% in the period of 2027-2030.
- it is estimated that the market share of each market player, including HealthyWay, was less than 2% of the digital health corporate service market in China, in terms of revenue in 2023. And there was insufficient publicly available information that could be used to evaluate the complete competitive landscape of the digital health corporate service market in China.

Historical and Forecasted Digital Health Corporate Service Market Size in China, 2018-2030E

Period	CAGR
2018-2023	54.4%
2024E-2027E	33.0%
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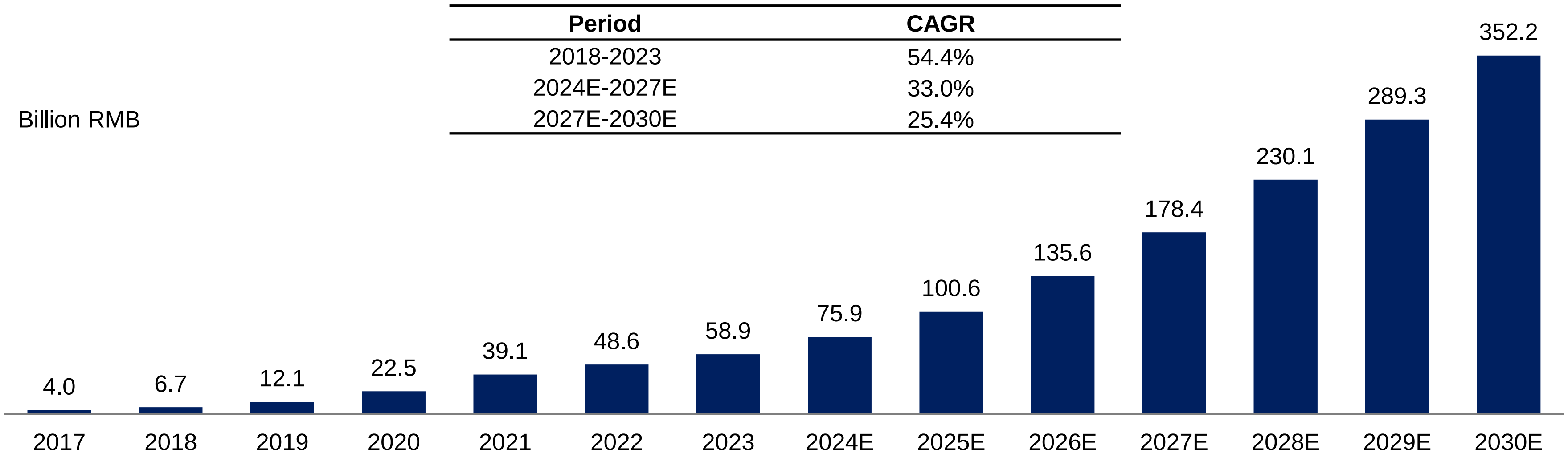


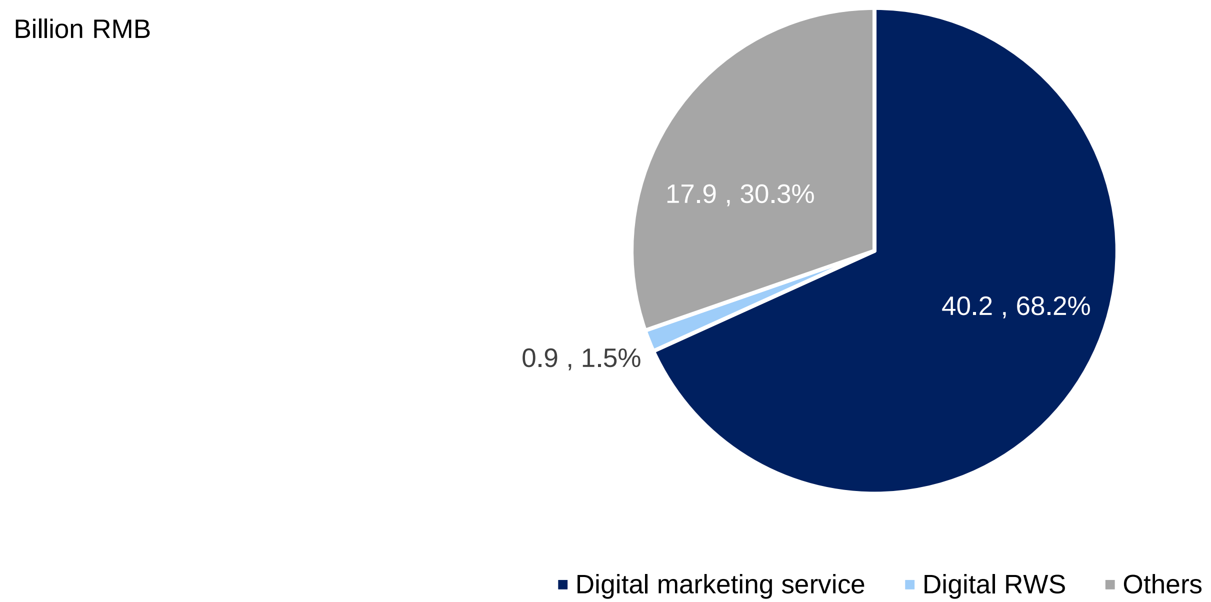
Note: The market size includes the revenue from Saas, HIS, etc. that companies sell to healthcare organizations.

Source: Annual reports of relevant companies, Frost & Sullivan Analysis

China Digital Health Corporate Service Market Breakdown by Segments, 2023

- The digital health corporate service market is primarily composed of the digital marketing service market, the digital RWS(including RWS support service) market, and other segments such as digital patient education market.
- The market size of the digital health corporate service market reached RMB58.9 billion RMB in 2023.
- The RWS market in the PRC grew rapidly fromRMB0.06 billion in 2018 to RMB1.1 billion in 2023. with a CAGR of 76.4%. This market is expected to continue its growth trend to reach RMB6.8 billion and RMB23.6 billion respectively, by 2027 and 2030, with a CAGR of 70.0% from 2024 to 2027 and a CAGR of 51.1% from 2027 to 2030.

China Digital Health Corporate Service Market Breakdown by Segments, 2023



Source: Annual Reports, Public Information, Frost & Sullivan Analysis

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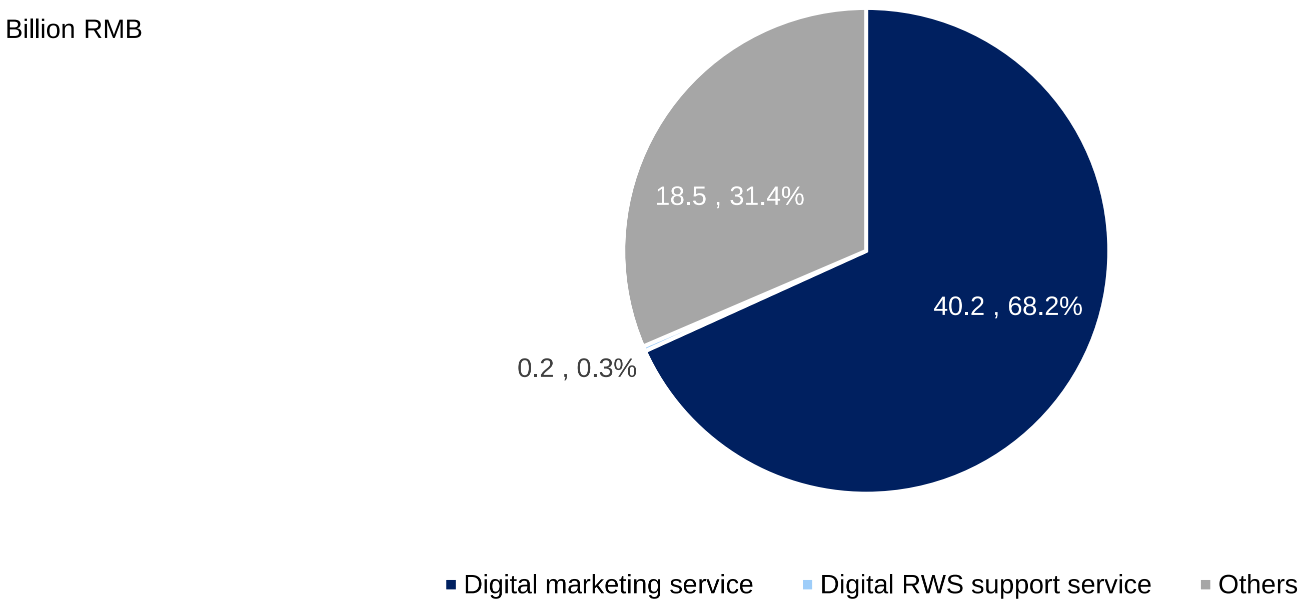
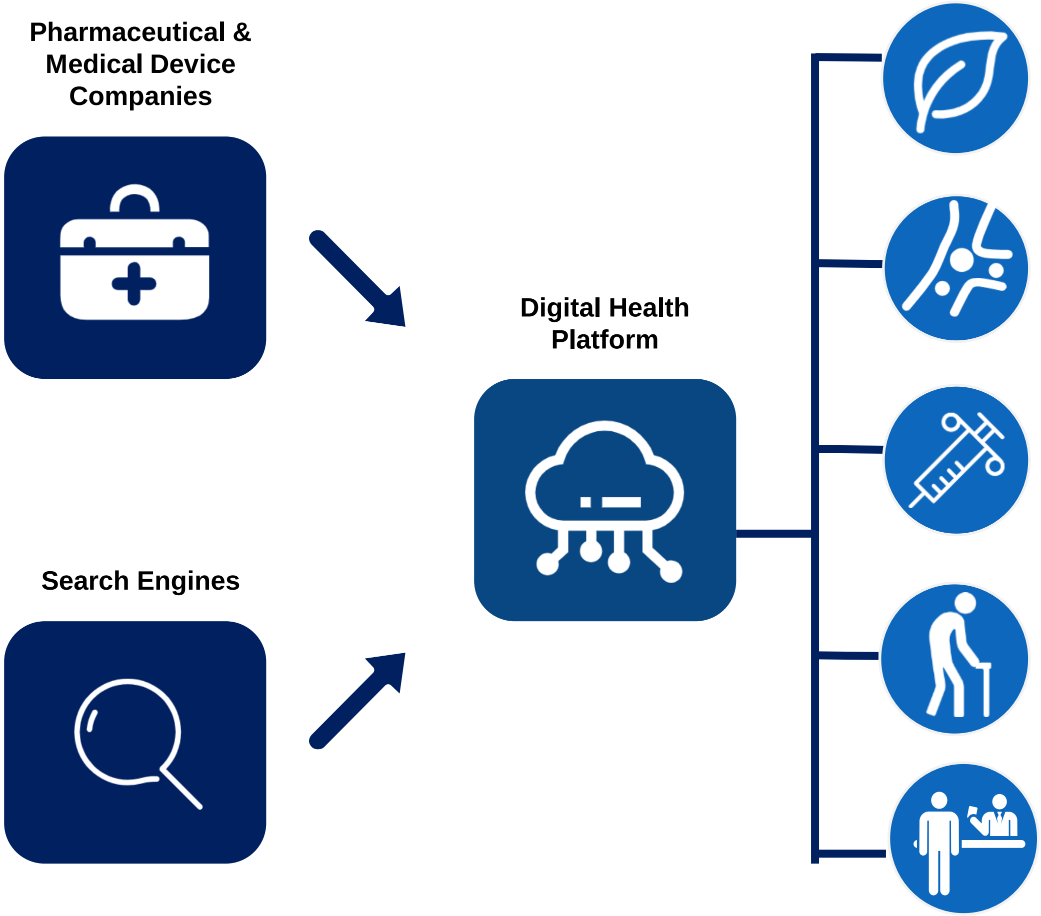


Source: Annual Reports, Public Information, Frost & Sullivan Analysis

Overview of Digital Health Content Solutions

- Digital platforms are engaged by search engines, pharmaceutical and medical device companies to provide health-related information content service, to promote their product. The health contents encompass a wide range of topics, such as healthy lifestyle, chronic disease management, treatment guidance, elderly care and general wellness content service.



Healthy Lifestyle
Digital platforms provide information about healthy lifestyle such as diet guidance, sport guidance and introduction of common diseases.

Chronic Disease Management
Digital platforms provide guidance for patients with chronic disease management in order to control the process of the disease.

Treatment Guidance
Digital platforms provide information about the treatment guidance and medical advice of common diseases.

Elderly Care
Digital platforms provide special health information for elderly care. Due to the aging of population, this part has gradually become important.

General wellness content service
The general wellness content service is open to the public to carry out knowledge publicity such as public health and diagnosis and treatment.

Source: Frost & Sullivan Analysis

Competitor Analysis of Digital Health Content Solutions(1/2)

- For all the health information platform, the main purpose is to provide correct disease knowledge and medical guidance to the public to alleviate doctor-patient information asymmetry. Q&A is the basic form to spread medical information to answer the most common problems directly while popular science article is another necessary form to make a systematic summary which is preferred to be completed by experts or the industry KOLs. Changes in information acquisition modes urge these medical service platforms to make popular science videos with KOLs. Cooperation expenses with experts or KOLs ranges from tens to ten thousand RMB as the different service, physician level and therapeutic areas.
- In terms of the content solutions revenue, Jiankangzhilu is among the top 5 companies in the digital health and medical service market.

	Digital Health Content Production			The number of registered physicians （thousand）
	Medical Q&A	Popular science articles	Popular science videos	
39健康网	• Free ✓	• Pay hundreds to thousands of yuan according to the doctors' title ✓	• (Associate) chief physicians would be invited and more than a thousand yuan would be paid ✓	840
健康160	• Free ✓	• Pay thousands of yuan to the KOLs. • Pay hundreds of yuan as award for article competitions ✓	✗	471.9
名医在线 MYZX.CN	• Free ✓	• Pay hundreds of yuan, or thousands of yuan for the KOLs ✓	• (Associate) chief physicians would be invited and more than two thousand yuan would be paid ✓	~20
寻医问药 XYWY.COM	• Free ✓	• Pay more than a thousand yuan according to the doctors' title ✓	• More than two thousand yuan would be paid. ✓	NA
微医 WeDoctor	• Free ✓	• No such expenditure ✓	✗	~300
丁香园 WWW.DXY.CN	• Free ✓	• Usually pay a thousand yuan for an article ✓	• Usually 2~3 thousand yuan would be paid. ✓	2100
健康之路 WWW.JKZL.COM	• Free ✓	✓	✓	854.3

Note: the listed company only www.39.net (300288.SZ) , and its listed time is February 2012; the average daily consultation volume statistics are from the end of 2021 to end of 2023.

Source: Company website, Frost & Sullivan analysis

Competitor Analysis of Digital Health Content Solutions(2/2)

Industry Average Price of Digital Health Content Production

Type	Popular Science Q&A	Healthcare Articles	Healthcare Audio and Video	Professional Medical Online Conference
Average Price	Free to 300 RMB	1,000 RMB to 10,000 RMB	500 RMB to 5,000 RMB	400 RMB to 2,000 RMB
Co.	~50 RMB	1,000 RMB to 8,000 RMB	~1,000 RMB	500 RMB~2,000RMB

Competitor Analysis of Digital Health Corporate Service(1/3)

Company	Principal Business	ToG	ToH	ToB
		The corporations refer to services to help governments improve operational efficiency	The corporations refer to digital infrastructure, cloud hospital platform construction services	The corporations refer to services to help pharmaceutical or medical device companies improve operational efficiency
健康之路 WWW.JKZL.COM	Company mainly provides digital health and medical services and digital marketing and corporate solutions	Provide the government with medical insurance related software and services	Provide digital infrastructure solutions	Precision marketing content solutions and RWS support services
医渡云 YIDUCLOUD	Company offers healthcare solutions built on big data and artificial intelligence technologies; listed in Hong Kong	Offer public health monitoring, epidemic response and population health management solutions	Offer hospital operations management	Offer software and technology platforms and CROs, and RWS support services
微医 WeDoctor	Company is a medical health technology platform focusing on membership-based health management services and digital chronic disease management	Help government construct health management organization (HMO) and build digital health community	Mainly provide platform construction and marketing services for information department and medical department of hospitals	No
智云健康 ClouDr.	Company operated as one-stop chronic disease management and smart medical platform, principal business covers hospital/pharmacy/medicine/individual solution; listed in Hong Kong	No	Provide hospital SaaS, marketing and promotion events	Offer pharmacy SaaS and value-added services, such as new retail service
健康160	Company connects hospitals, medical professionals, end users, and mainly provides appointment and registration, cloud hospital and operation services	No	Provide SaaS and hospital operation solutions	No
熙康 XIKANG	Company developed city-specific cloud hospital platform and provides Internet medical services	Construct or upgrade the cloud hospital platforms or independent cloud hospital systems	Construct or upgrade the cloud hospital platforms or independent cloud hospital systems	No

Source: Company website, Frost & Sullivan analysis

Competitor Analysis of Digital Health Corporate Service(2/3)

Company	Principal Business	ToG	ToH	ToB
		The corporations refer to services to help governments improve operational efficiency	The corporations refer to digital infrastructure, cloud hospital platform construction services	The corporations refer to services to help pharmaceutical or medical device companies improve operational efficiency
JDH 京东健康	Company was committed to building a health management platform that takes medicine and health product supply chain as the core, also concentrated on digital-driven medical services; listed in Hong Kong	No	No	Provide B2B medical e-commerce platform
阿里健康	Company mainly concentrated on the fields of pharmaceutical e-commerce, medical services and digital healthcare; listed in Hong Kong	No	No	Provide compliance solutions including drug tracking platform
卫宁健康 WINNING HEALTH	Principal business covers smart hospitals, smart regional health, Internet + medical health; listed in Shenzhen	No	Help construct hospital information system and smart hospital	No
MedSci 梅斯	Company operates as an online professional physician platform and is committed to promoting the development of biopharmaceutical; listed in Hong Kong	No	No	Offer digital marketing services, RWS solution and market research services
医脉通	Company operates as an online professional physician platform and provides professional medical information including clinical guidelines, frontier information; listed in Hong Kong	No	Provide hospitals with electronic data capture (“EDC”) systems to facilitate intelligent and automated data collection and management	Offer digital marketing services, RWS solution and market research services

Source: Company website, Frost & Sullivan analysis

Competitor Analysis of Digital Health Corporate Service(3/3)

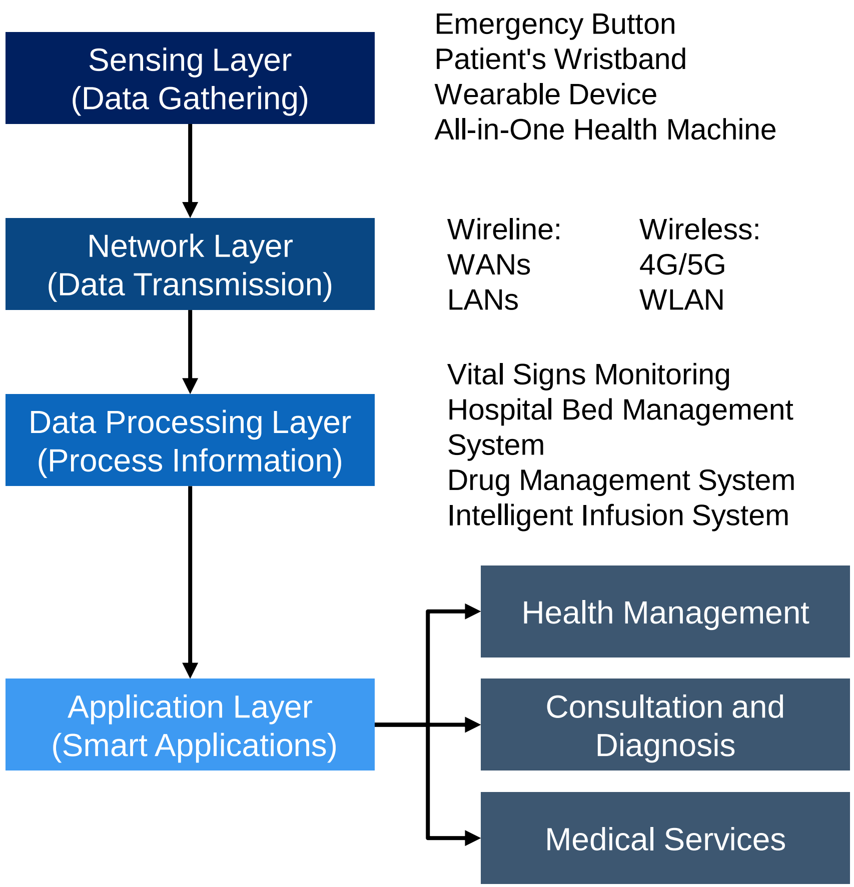
Ranking	Company	Principal Business	2023 Digital Health Corporate Service Revenue (Million RMB)	Market Share
1		Company was committed to building a health management platform that takes medicine and health product supply chain as the core, also concentrated on digital-driven medical services; listed in Hong Kong	~1,150	2.0%
2		Company operated as one-stop chronic disease management and smart medical platform, principal business covers hospital/pharmacy/medicine/individual solution; listed in Hong Kong	658.6	1.1%
3		Company mainly concentrated on the fields of pharmaceutical e-commerce, medical services and digital healthcare; listed in Hong Kong	~500	0.8%
4		Company offers out-of-hospital patient services, provider-enabling services and healthcare value chain services	~415	0.7%
5		Company operates as an online professional physician platform and provides professional medical information including clinical guidelines, frontier information; listed in Hong Kong	372.7	0.6%
6		Company operates as an online professional physician platform and is committed to promoting the development of biopharmaceutical; listed in Hong Kong	349.2	0.6%
7		Company offers healthcare solutions built on big data and artificial intelligence technologies; listed in Hong Kong	~330	0.6%

Source: Annual Reports, Prospectus, Frost & Sullivan analysis

Overview of Hospital SaaS and Advantage Analysis

- Software as a Service (SaaS) in healthcare is a service model in cloud providing applications include clinical information systems (PACS, EMR, CDSS, etc.) and nonclinical information systems (billing, RCM, supply chain, etc.) replaces traditional software usage by reducing the need to own and host hardware.

Basic structure of Hospital SaaS



Advantages of SaaS

<u>Data Sharing and Data Communication</u>

✓ To solve the data isolation problem, SaaS realizes data sharing among different HIS sub-systems including the mobile workstation and the management platform based on cloud technology. Also, with the embedded cloud technology, SaaS can implement dynamic resource scheduling and facilitate data communication and the ease of use. SaaS model involving the internet of Things (IoT) prevents the isolation and dispersion of health data.

<u>Automatic Data Collection</u>

✓ To solve problems associated with manual data entry, SaaS automatically collects data produced in and out of the hospital. Automatic data upload functions of SaaS can save clinicians' time and improve work efficiency as well as reduce data input error.

<u>Lower Instalment and Maintenance Cost</u>

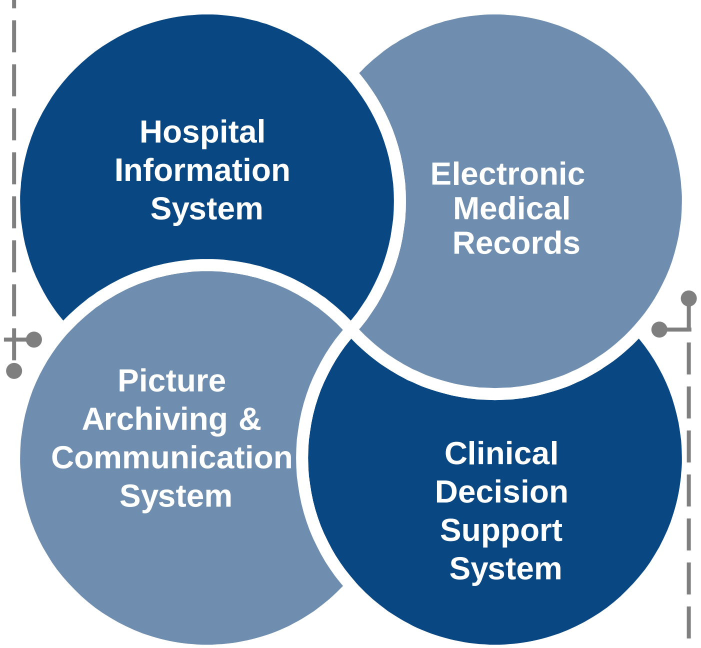
✓ SaaS can significantly reduce the instalment cost and maintenance cost for hospitals. SaaS service provider normally builds system infrastructure and operation platform and is responsible for the further implementation and maintenance services, which would improve hospitals' willingness to adopt SaaS solutions. Therefore, SaaS can greatly reduce the cost of building and maintaining information system for hospitals as compared to the circumstance of HIS.

Source: Government Websites, Frost & Sullivan Analysis

Applicable Scenarios of Hospital SaaS

- In healthcare, hospital SaaS can provide numerous benefits like cost-saving, security, scalability, easy and quick back-ups, increased accessibility and real-time updates as it can have multiple applications. Hospital information system(HIS), electronic medical records(EMR), picture archiving & communication system(PACS) and clinical decision support system(CDSS) are the most common application of the hospital SaaS.

- HIS is an integrated and comprehensive information system developed for cost-effective management, controlling the data in most healthcare departments, namely financial, inpatient, Operation Theater, nursing, radiology, clinical, laboratory, outpatient, materials, pharmaceutical, and pathology.



- EMR is an electronic record of health-related information on an individual that can be created, gathered, managed, and consulted by authorized clinicians and staff within one health care organization, with large potential to provide substantial benefits to physicians, clinic practices, and health care organizations, which can facilitate workflow and improve the quality of patient care and patient safety.

- PACS is a medical imaging technology which provides economical storage and convenient access to images from multiple sources, eliminating the need to manually file, retrieve, or transport film jackets, the folders used to store and protect X-ray film.

- CDSS is intended to improve healthcare delivery by enhancing medical decisions with targeted clinical knowledge, patient information, and other health information. CDSSs today are primarily used at the point-of-care, for the clinician to combine their knowledge with information or suggestions provided by the CDSS.

Source: Frost & Sullivan Analysis

Growth Drivers of China Digital Health Corporate Service Market

Improved Efficiency

- Unlike traditional marketing that is time-consuming, Digital Health corporate service services gives a cheaper and more efficient option. Professional platforms use their networks to support pharmaceutical corporates with their digital marketing strategies. With the data and resources platforms have, medical or pharmaceutical corporates could promote their products more efficiently, thus achieving higher returns and better marketing results. Specifically, marketing campaigns can be performed more quickly compared to traditional ones that require face-to-face interactions; and the digital feedbacks regarding the campaign could be instantly gathered and studied.

Superior Marketing Analytics and Insights

- Digital Health corporate service can boost the efficacy of marketing activities for pharmaceutical and medical companies. Supported by big data analytics tool, pharmaceutical and medical companies are enabled to specifically target patients with particular demographics, interests, and behaviors. Additionally, data gathered from digital marketing contributes to the analysis of customers' behavior, age, preferences, spending habits and other attributes. This, in turn, enables pharmaceutical and medical companies to refine their marketing strategies and enhance their overall marketing effectiveness.

Growing Patient Needs for Novel Therapeutics

- Increasing challenges of human health problems are driving patients to seek better treatment. On the digital platforms, patients can access to a large variety of drug and device advertisements posted by healthcare companies and learn about the most recent therapeutics. With the continuously growing patient needs for novel therapeutics, the demand for digital health marketing services will grow.

Source: Frost & Sullivan analysis

Future Trends of China Digital Health Corporate Service Market

Share of Domestic Enterprises Increased	• Foreign-invested healthcare companies are the first to try out strategies such as channel sinking and digital health marketing due to strict compliance, advanced concepts and the fact that their products are more affected by the volume purchasing policy. With the tightening of national regulations, frequent exchanges of talents within the industry and the launch of innovative domestic products, domestic healthcare companies have also started to realize the importance of digital health marketing and have started to actively layout and explore the path suitable for Chinese companies.
Big Data Driven	• Big data, AI algorithms and other technologies have made the dissemination of information more rapid, intelligent and efficient. The combination of more new technical means with traditional medical information has greatly broadened the application scenarios, making the dissemination of medical information break through the limitations of time and space. At the same time, the large amount of healthcare information accumulated by digital platforms can also be analyzed through big data to better filter and reach the potential customers.
Increased Industry Concentration	• At present, digital health platforms are in their infancy, and in recent years, digital platforms that have acquired a huge amount of doctor resources and provide professional medical contents and services. But in the future, with the standardization and specialization of services, leading companies in the industry will emerge, providing concentration in the digital health marketing service market.

Source: Frost & Sullivan Analysis

Entry Barriers of China Digital Health Corporate Service Market

Capabilities to serve multiple stakeholders	• Pharmaceutical companies, medical institutions and government are three key stakeholders of digital health corporate service, since the market covers marketing service for pharmaceutical companies, Hospital SaaS solutions and SaaS solutions to medical insurance. Emerging players have difficulties to connect stakeholders like government and large hospitals due to the existing cooperation and competitive market competition. Additionally, the emerging players have limited resources to develop multiple services for various stakeholders simultaneously. Thus, emerging players usually lack the capabilities to serve all key stakeholders of the digital health corporate service market.
High Technical Requirements	• Technologies such as big data and artificial intelligence algorithms have made the dissemination of information faster, smarter and more efficient. The combination of more new technological tools with traditional medical information has greatly broadened the application scenarios, making the dissemination of medical information break through the limitations of time and space. From perspective of corporates, digital marketing is less costly compared to traditional marketing. With the rising price of pharmaceuticals and medical devices, pharmaceutical and healthcare corporates need to manage their marketing budgets more effectively. Digital marketing allows representatives to reach a wide range of potential customers quickly and also to execute less costly online meetings. Digital marketing is predicted to gradually replace traditional marketing due to its fast and inexpensive nature, but digital marketing is more technically demanding and requires companies to upgrade their software algorithms in a timely manner, thus creating certain barriers.

Source: Frost & Sullivan analysis

Opportunities and Challenges of China Digital Health Corporate Service Market

Centralized procurement requires efficient marketing models	• With the implementation of centralized procurement nationwide and the ‘‘two-invoice’’ system, average drug prices are on a downward trend. Pharmaceutical companies have an urging demand for controling marketing expense, so that desirable profitability can be maintained.
Innovative drugs and medical devices drive the overall marketing demand	• Powered by the advancement of biotechnology, the past two decades have witnessed the development of many innovative drugs and medical devices. In China, an increasing number of domestically developed innovative drugs and medical devices have commercialized, driven by a series of reforms by the PRC Government. Multi-national and domestic pharmaceutical companies are increasingly in need of cost-effective digital marketing services to promote innovative drugs and medical devices. Compared to traditional healthcare marketing channels, which usually rely on medical representatives to promote products to medical institutions and pharmacies, digital marketing services can reduce the marketing costs effectively. Digital marketing services help pharmaceutical companies reach a wider range of audience through the Internet. For example, patients in rural areas, who are hardly involved by the traditional marketing channels, are enabled to engage with pharmaceutical companies through digital marketing, in the same way as for those living in cities. Therefore, pharmaceutical companies could have more opportunities to introduce their drugs and medical devices to more potential customers in need, efficiently and effectively.
Increasing reliance on digital technologies and artificial intelligence	• The application of digital marketing solutions has gradually replaced the traditional offline marketing model. Digital marketing helps pharmaceutical companies reach target customers more precisely and accurately, by utilization of big data analytics, AI and other digital technologies.

Source: Frost & Sullivan analysis

Verification I

- HealthyWay is one of the pioneers in the digital health corporate service industry especially in maternity and childcare related field.
- HealthyWay operated one of the largest digital health and medical service platforms in China as of December 31, 2023, in terms of the number of registered individual users on its platform.
- Class I hospitals = primary hospitals and medical clinics that directly provide the community of a certain population with comprehensive services of medical treatment, prevention, rehabilitation, and health care; Class II hospitals = secondary hospitals that provide comprehensive medical services to a region, which are designated as Class II hospitals by the NHC hospital classification system; Class III hospitals = multi-regional hospitals with large capacity that provide high-quality professional medical services, undertake higher education and scientific research initiatives, which are designated as Class III hospitals by the NHC hospital classification system.
- Real-world studies or ‘‘RWS’’ = studies investigating health interventions whose design does not follow the design of a randomized controlled trial and aims to reflect health intervention effectiveness in routine clinical practice.
- The digital health and medical service market and the digital health corporate service market are relatively new and unproven, and it is uncertain whether they will achieve and sustain high levels of demand, user acceptance and market adoption.
- While the digital health and wellness market in China is at an early stage of development, it is, and is expected to be, increasingly competitive.
- The digital health and wellness market is an emerging and rapidly evolving one.
- The digital health and wellness industry is characterized by rapid technological change, evolving industry standards and regulatory requirements, introductions of new services and products as well as changing user demands.
- Currently the digital health and medical service market and the digital health corporate service market only represented 18.6% and 12.1%, respectively, of the total digital health and wellness market in 2021, indicating the market is still in its early stage of growth.
- The digital health and wellness industry in China accounted for 3.5% of the overall health and wellness market in 2021 in terms of market size, as compared to 1.3% in 2017 and an estimate of 7.0% in 2025. It is expected to further account for 11.1% of the overall health and wellness market in 2030, in terms of market size. The health and wellness market in China is undergoing a digital transformation, and the market share of digital health and wellness market is expected to expand.
- Digital health corporate services comprise three main categories: (i) integrated digital marketing services for pharmaceutical companies; (ii) software and system development services for medical institutions; and (iii) RWS support services for pharmaceutical companies.
- HealthyWay is also one of the first platforms that provide online appointment and registration services in China, and the first in the industry to launch membership based health management schemes or services of this kind in 2017.
- HealthyWay ranked 1st among digital health and medical service platforms in China in 2023, in terms of the number of individual users who paid for health membership schemes or similar digital services.
- HealthyWay ranked third among digital health and medical service platforms in China as of December 31, 2023, in terms of the number of Class I/II/III hospitals that its platform connected.

Source: Frost & Sullivan analysis

Verification II

- HealthyWay operated one of the largest digital health and medical service platforms in China as of December 31, 2023, in terms of the registered individual users on its platform.
- (i)石家庄四药有限公司; (ii) 江苏先声药业有限公司; (iii) 合肥华润三九医药有限公司; (iv) 石药集团欧意药业有限公司 ; (v)江苏恒瑞医药股份有限公司; (vi) 齐鲁制药有限公司 were among the 2023 Top 100 Pharmaceutical Companies in China in terms of Comprehensive Strengths in 2023.
- The COVID-19 pandemic has irreversibly driven the digital transformation of marketing service since traditional offline marketing channels were disrupted during the outbreak of the pandemic. The digital marketing was already on the rise before the pandemic, and the outbreak of COVID-19 has pushed up the demand in digital health corporate service market, and will shift this online-offline dynamic permanently.
- Because of the emergence of various new social media platforms, such as Douyin and Kauishou, the volume of Internet traffic on WeChat public accounts and mobile applications has been diverted to these new platforms.
- (a) It is commercially common to sell similar health management service packages to HealthyWay's health membership schemes and healthcare service packages in the digital health and medical service market in China; and (b) it is in line with the industry norm to incur breakage amount and recognize as revenue in the course of such business operations.
- As the laws and regulations on healthcare industry get tightened in China, pharmaceutical companies have shifted their marketing campaigns from market-oriented approaches to patient-oriented and academic-driven approaches, compelling pharmaceutical companies to weigh more on generation of evidence-based medical content to promote their drugs and medical products. Digital promotional campaigns on the Internet provide new channels for pharmaceutical companies to reach potential patients or people demanding quality medical content.
- As more patients became accustomed to online medical services in order to minimize potential exposure to the COVID-19 virus, customer habits have been cultivated.
- Because of the growing popularity of various short video social platforms, the online traffic and user attention on WeChat public accounts and other mobile applications has been diverted to those platforms.
- The industry average of repurchase rate for healthcare membership scheme customers is 20-50%.
- The digital health and medical service market and digital health corporate service market are new and rapidly developing, with a large number of market players focusing on different vertical markets. New market players have also entered into these two markets continuously.
- Industry expertise and insight is required to build a viable business model and workflow, as well as design products and services that suit the specific needs and context of healthcare users.
- The availability of experienced physicians may not grow in line with the increasing medical demand.
- Insurance companies and insurance brokerage companies usually sell such critical illness insurance products at a large volume to the general public.
- Insurance companies and insurance brokerage companies set critical illness insurance products in an affordable price range.

Source: Frost & Sullivan analysis

Verification III

- The average industry utilization rate of digital health management packages similar to health membership schemes ranged from 3% to 10% in 2023.
- (i) It is commercially common for Internet service platforms (including Internet healthcare platforms similar to HealthyWay) to introduce top-up function on their mobile applications in China; and (ii) it is in line with the industry norm to incur breakage and recognize as revenue in the course of such business operations.
- Due to the growing popularity of short video social platforms which divert online traffic and intensified the competition of digital marketing services.
- HealthyWay is one of the first companies that provide digital health and medical services in China.
- The average industry repurchase rate of digital health management packages similar to our health membership schemes directly sold to individual customers, typically ranges from approximately 20% to 40%. The average industry repurchase rate of digital health management packages similar to our health membership schemes sold to corporate customers, typically ranges from approximately 40% to 50%,
- The average industry utilization rate of digital health management packages similar to our health membership schemes directly sold to individual customers, typically ranges from approximately 80% to 95%. The average industry utilization rate of digital health management packages similar to our health membership schemes sold to corporate customers, is typically below 10%.
- In recent years, as mobile payment methods have gradually prevailed across industries, individual users are relying less upon top-up service of mobile applications to make further online payment.
- It is less convenient for patients to describe their symptoms online, while it is also more challenging for physicians to diagnose and treat. Such deficiency may compromise diagnosis quality and lead to misdiagnosis and ineffective treatment, affecting the overall quality of online medical service. Therefore, the availability of experienced and skilled physicians is indispensable for new players planning to provide online diagnosis and treatment services.
- As of June 30, 2023, 569 Class III Grade A hospitals represent over 30% of the total number of Class III Grade A hospitals in China. As of June 30, 2023, 1,471 Class III Grade A hospitals represent over 85% of the total number of Class III Grade A hospitals in China
- During the preparation of the Report, We performed both primary and secondary research, and obtained knowledge, statistics, information and industry insights on the trends of the health and wellness market in China. Primary research involved discussing the status of the industry with leading industry participants and experts. Secondary research involved reviewing annual reports of companies, independent research reports and Frost & Sullivan's proprietary database. The report was compiled based on the following assumptions: (i) China's social, economic and political environment is likely to remain stable in the forecast period; and (ii) the related industry key drivers are likely to drive the market in the forecast period.
- The projected number of annual medical consultations is expected to exceed 10 billion by 2030. This will result in a significant demand for healthcare, health management services. The digitization of these services is likely to be an inevitable trend, leading to rapid market expansion.

Source: Frost & Sullivan analysis

Verification IV

- In the future, Chinese residents are placing greater emphasis on health. Apart from disease diagnosis and treatment, there is also a growing focus on disease prevention, health management, consumer healthcare, as well as the overall experience and quality of medical services. Beyond basic medical services, the market for health management and consumer healthcare services is expected to grow rapidly.
- As of December 31, 2023, over 60% of physicians with associate chief physicians or higher titles, and 413.9 million patients in China had connected to digital health and medical service platforms.
- It is expected that a growing number of healthcare professionals and patients will connect to digital health and medical service platforms in the future. As a result, digital health and medical service platforms are becoming increasingly appealing to companies in the pharmaceutical industry, in order to reach potential customers efficiently. The market size of digital health corporate service market is expected to continue to grow.
- The demand for post-market research on real-world data in China has increased rapidly in recent year, mainly driven by the commercialization of an increasing number of new drugs into the pharmaceutical market. Since 2019, the CDE and the NMPA has promulgated various guidelines on the utilization of real-world data, in relation to the research and development of drug and medical devices, including ‘‘Basic Considerations for Real-World Evidence to Support Drug Development (Draft for Comments)’’ (《真實世界證據支持藥物研發的基本考慮（徵 求意見稿）》) and the ‘‘WE Guidelines’’《RWE指導原則》). Such favorable policies are expected to further drive the market expansion.
- The incidence rates of many diseases in China have increased over the past few decades, mainly because people get physical examinations more often, driven by the increasing health awareness and technological advances. For example, the number of diabetic patients in China increased from 125.7 million in 2018 to 143.4 million in 2023, and is expected to reach 157.6 million in 2030. The higher incidence rate of diseases will also drive the demand for disease prevention services and health management services, leading to rapid market expansion.
- For online medical consultation services business operators, regarding service fees paid by patients online, sharing 70.0% to 80.0% of such service fees to physicians while keeping 20.0% to 30.0% as revenue is in line with the industry norm.
- Most of pharmaceutical companies, that the Company collaborate with in terms of precision content services, are leading pharmaceutical companies accounting for a significant market share in their respective drug in China.
- Despite the intense competition in the specialty pharmacy industry, the operation of specialty pharmacy business is relatively less complicated, mainly including establishment of supply chain of specialty drugs in the upstream industry value-chain, and accessibility to patients in the downstream industry value-chain.

Source: Frost & Sullivan analysis

Verification V

- The drug that HealthyWay sells are typically non-refundable upon delivery except for quality reasons. Such return policy is in line with the industry practice.
- There were 5,496 chain pharmacies and 7,450 retail pharmacies operating in Fujian Province in 2023.
- Numerous digital health companies across China offer corporate and digital marketing services to help corporate customers establish corporate brands or enhance product recognition, by utilizing personal public accounts, web portal health channels and professional health platforms.
- The gross profit margin for pharmaceutical wholesale business generally ranges from 5% to 10%, and the gross profit margin for specialty pharmacies is generally around 10%, while that for community pharmacies generally ranges from 30% to 40%. Such discrepancy in gross profit margins between specialty pharmacies and community pharmacies is primarily because (i) besides medicines, community pharmacies also sell medical devices such as blood pressure monitors and facial masks, which have higher gross profit margin; and (ii) specialty pharmacies generally incur higher operating costs because they are usually located near hospitals.
- it is an industry norm for pharmaceutical sales agents to sell medicines to third-party pharmacies and pharmaceutical trading companies.
- Business arrangements with pharmaceutical trading companies that the pharmaceutical trading companies are not required to provide suppliers with, any information regarding their sales, inventory levels, whether they are reselling products to their customers, and if so, the identity of the end-users of the products, and their customers' demand for products, are in line with the industry norm.
- The business model HealthyWay adopted for transactions with pharmaceutical trading companies are not deemed as distributorship in the pharmaceutical sales industry, and it is line with the industry practice not to have control over such pharmaceutical sales companies.
- Pharmacies can be generally categorized into (i) specialty pharmacies and (ii) traditional pharmacies. Specialty pharmacies are pharmacies that sell specialty medicines for the treatment of specialty diseases, such as diabetes, hypertension and oncology. The term ``specialty pharmacy'' is commonly used in the pharmaceutical sales industry.
- Monthly active users refer to users who have viewed or used the services or products on the platform in one month. Such definition for the monthly active users on HealthyWay platform is in line with the industry practice.
- Utilization rate of health membership schemes is calculated by the number of utilized health membership schemes (i.e. at least one service has been used by individual customers) sold directly to individual customers in a year, divided by the total number of health membership schemes sold directly to individual customers in a year. Such calculation methodology of the utilization rate is fair, reasonable and in line with the industry norm.

Source: Frost & Sullivan analysis

Verification VI

- Companies in the digital health corporate service market usually incur the following costs in addition to typical employee costs and administrative expenses:

Corporate services:

For content services, the major costs primarily include the labor cost associated with the engagement of third-party content providers, primarily because companies typically collaborate with external medical experts or physicians in producing such content.

For information technology services, the major costs primarily include the labor cost associated with the engagement of technology specialists for software development.

Digital marketing services:

The major costs of digital marketing services primarily include (i) the labor cost associated with the engagement of third-party content providers; and (ii) the cost associated with the media channels for advertisements, such as the engagement with third-party advertising service providers for using their channels.

- Companies in the digital health and medical service market usually incur the following costs in addition to typical employee costs and administrative expenses:

Medical support services:

For health membership schemes, the major costs primarily include the procurement cost of medical services provided by third-party providers, primarily because a large portion of medical services included in health membership schemes are typically provided by third-party service providers. These services typically include both (i) online services such as medical consultation services and (ii) offline services such as physical examination.

For other medical support services such as medical consultation services, the major costs primarily include the labor cost of physicians given that such services are provided by physicians who collaborate with relevant companies. In addition, for supporting services to hospitals, the major costs primarily include the procurement cost of on-site health assistant, primarily because such services are typically performed by on-site health assistant employed by relevant companies.

Value-base medical services:

For healthcare service packages which include multiple health products, the major costs primarily include the procurement cost of the health products included in the healthcare service packages.

For pharmaceutical sales business, the major costs primarily include the procurement cost of medicines and medical devices procured and sold by relevant companies.

Source: Frost & Sullivan analysis

Verification VII

- The calculation methodology of repurchase rate of direct individual of HealthyWay, which is calculated by dividing the number of individual customers who purchase the health membership schemes more than once in the current year and/or the immediate preceding year, by the total number of individual customers of the health membership schemes in the current year, is in line with the industry standard.
- The calculation methodology of repurchase rate of corporate customers of HealthyWay, which is calculated by dividing the number of corporate customers who purchase the health membership schemes more than once in the current year and/or the immediate preceding year, by the total number of corporate customers of the health membership schemes in the current year, is in line with the industry standard.
- The calculation methodology of repurchase rate of individual customers who purchase healthcare service packages, which is calculated by dividing the number of individual customers who purchase the healthcare services packages more than once in the current year and/or the immediate preceding year, by the total number of individual customers of the healthcare services packages in the current year, is in line with the industry standard.
- It is an industry norm for pharmaceutical sales agents to sell medicines to third-party pharmacies and pharmaceutical trading companies.
- Business arrangements with pharmaceutical trading companies that the pharmaceutical trading companies are not required to provide suppliers with, any information regarding their sales, inventory levels, whether they are reselling products to their customers, and if so, the identity of the end-users of the products, and their customers' demand for products, are in line with the industry norm.
- The business model HealthyWay adopted for transactions with pharmaceutical trading companies are not deemed as distributorship in the pharmaceutical sales industry, and it is line with the industry practice not to have control over such pharmaceutical sales companies.
- Pharmacies can be generally categorized into (i) specialty pharmacies and (ii) traditional pharmacies. Specialty pharmacies are pharmacies that sell specialty medicines for the treatment of specialty diseases, such as diabetes, hypertension and oncology. The term “specialty pharmacy” is commonly used in the pharmaceutical sales industry.
- Monthly active users refer to users who have viewed or used the services or products on the platform in one month. Such definition for the monthly active users on HealthyWay platform is in line with the industry practice.
- Utilization rate of health membership schemes is calculated by the number of utilized health membership schemes (i.e. at least one service has been used by individual customers) sold directly to individual customers in a year, divided by the total number of health membership schemes sold directly to individual customers in a year. Such calculation methodology of the utilization rate is fair, reasonable and in line with the industry norm.
- In 2023, HealthyWay recorded an energy intensity of 0.62 MWh per capita, which was generally at average level compared with industry peers.
- In 2023, HealthyWay recorded a combined energy intensity of 0.66 MWh per capita, which was generally lower than industry peers.
- In 2023, HealthyWay recorded a water intensity of 5.81t per capita, which was generally at average level compared with industry peers.
- In 2023, HealthyWay recorded a non-hazardous waste intensity of 0.1t per capita, which was generally lower than industry peers.
- In 2023, HealthyWay recorded a hazardous waste intensity of 0.12 kg per capita, which was generally lower than industry peers.
- In 2023, HealthyWay`s GHG emissions intensity was 0.37 tCO2e/person, which was relatively low compared with industry peers.

Source: Frost & Sullivan analysis