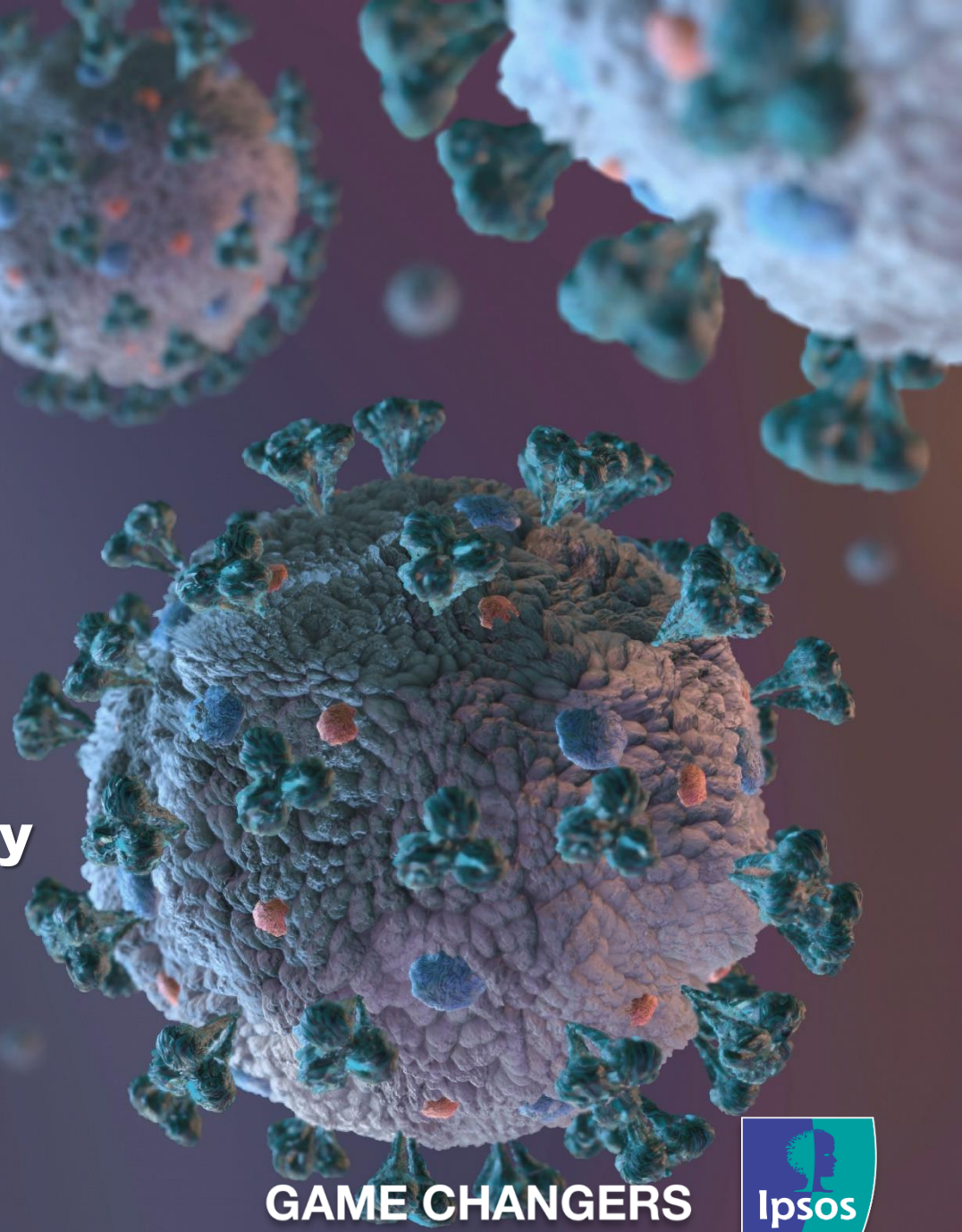
# CONFRONTING COVID-19

## An Ipsos perspective on the impact of COVID-19 on the economy & MedTech industry in China

## Part 1





GAME CHANGERS

Ipsos

# Our views

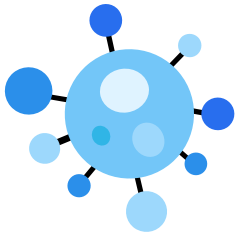
Two months into the COVID-19 outbreak, China is gradually stepping out of a nationwide lockdown, back to the hustle and bustle of restaurants and steaming chimneys of factories, with a steep drop in the volume of patients in the majority of hospitals.

This dramatic turnaround and front-line battle made by the public health workers has demonstrated that China's healthcare system is more mature and resilient than in the 2003 SARS outbreak.

Technological advancement has supported the optimal diagnosis and treatment of COVID-19 patients, as well as day-to-day public health needs. This has ranged from government-led COVID-19 clinical trials to the inclusion of 'Internet+' medical service in health insurance.

We hope this report can shed some light on the questions that have arisen regarding the domestic economy, healthcare industry and specifically, the medical devices sector.

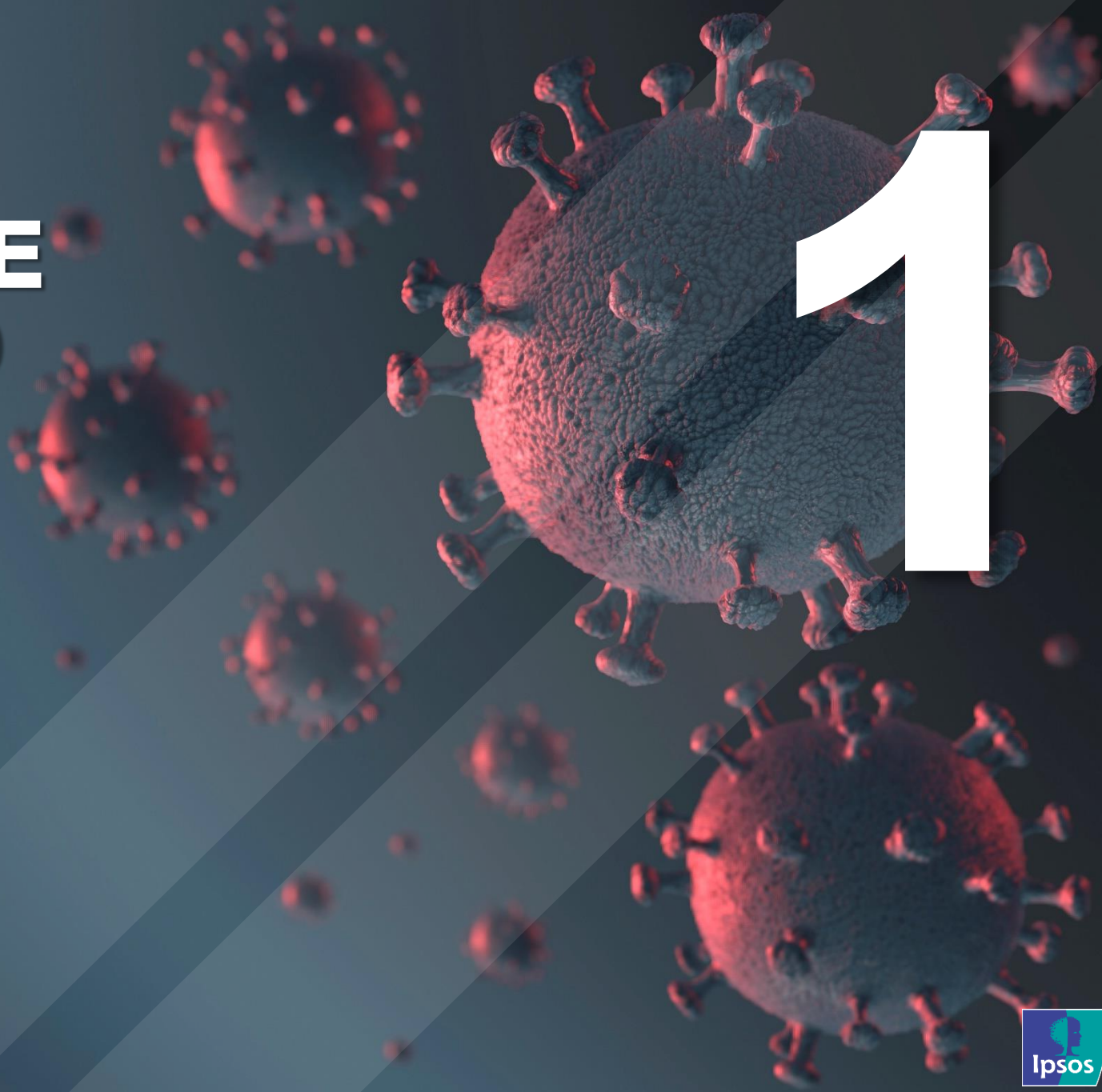
# Our thinking



- How does the macroeconomic performance compare to that during SARS in 2003?
- What is the implication of the COVID-19 outbreak for public health development and expenditure in the long run?
- What are the expected changes to how healthcare entities operate in response to an outbreak?
- How, if at all, are the clinical pathways and methods adopted during the outbreak going to be sustained?
- What will be the impact of newly implemented health insurance and payment method policies on businesses?
- To what extent is each category of medical devices impacted by the outbreak?
- What are some likely changes on volume-based procurement (VoBP) caused by this outbreak?

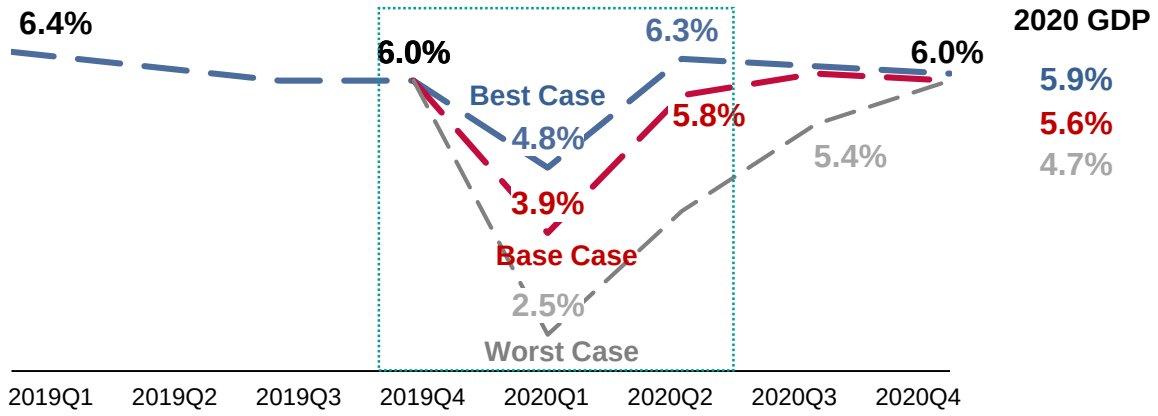
# COVID-19: IMPACT ON THE ECONOMY AND MEDICAL INDUSTRY

1

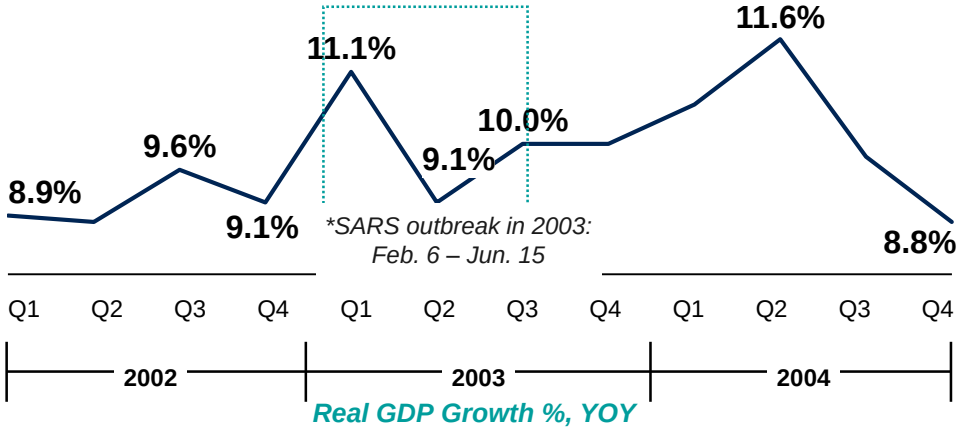


# China's economy has been impacted negatively since the outbreak of COVID-19 in late 2019, but is expected to rebound by mid-2020

## COVID-19's economic impact is more serious than that of SARS




## During SARS in 2003, the economy was heavily hit, but annual GDP was less impacted than with COVID-19




Source: Economist Think Tank, Guotai Junan Securities, NBS, Ipsos analysis

Source: Economist Think Tank, Guotai Junan Securities, NBS, Ipsos analysis

# Minimizing economic loss has been the main priority of central and local governments since February 2020

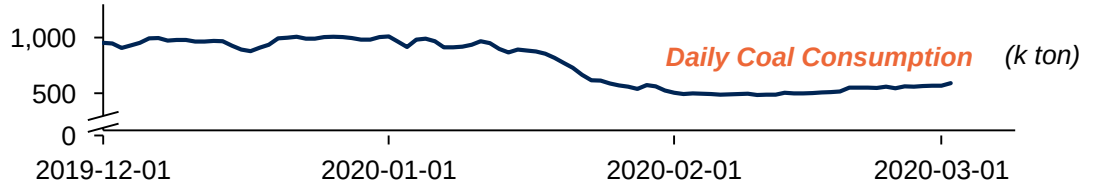
## The outbreak had the heaviest impact on the service sector

- **Fixed investment:** manufacturing is continuing to re-stock; **i**nfrastructure is expected to bounce back in Q2 & Q3 2020
- **Consumption:** negative GDP contribution from the service sector e.g. transportation, food service; this is expected to gradually recover in Q2 & Q3 2020
- **Trade:** negatively impacted in Q1, but quick recovery expected once the outbreak stabilizes

| GDP Growth | Growth Drivers, ppt. | | | Contribution Level | | |
|---|---|---|---|---|---|---|
| | C[1)] | I | NX | C | I | NX |
| 2002 9.1% | 5.1 | 3.6 | 0.4 | 55.6% | 39.8% | 4.6% |
| 2003 10.0% | 3.6 | 7.0 | -0.6 | 35.4% | 70.0% | -5.4% |
| 2004 10.1% | 4.3 | 6.2 | -0.4 | 42.6% | 61.6% | -4.2% |
| 2017 6.9% | 3.9 | 2.3 | 0.6 | 57.6% | 33.8% | 8.6% |
| 2018 6.7% | 5.0 | 2.2 | -0.6 | 76.2% | 32.4% | -8.6% |
| 2019 6.1% | 3.5 | 1.9 | 0.7 | 57.8% | 31.2% | 11.0% |

*Key Components' Contribution to GDP Growth*

## Daily electricity consumption after the 2020 Chinese New Year dropped by 25% compared to the same period last year. This has been slowly returning to normal since mid-February



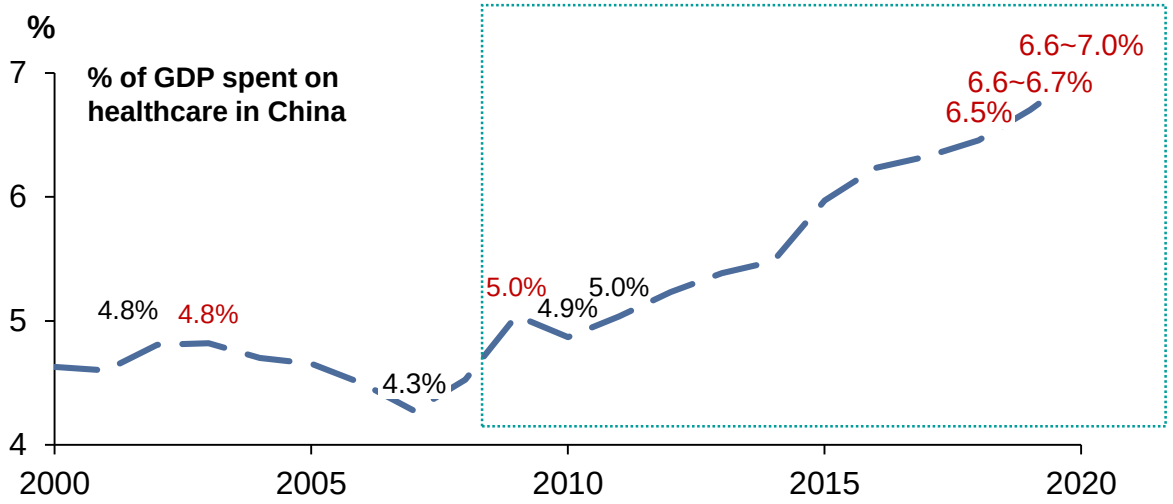

## Senior staff in central government emphasized i) the positive trend in economic growth and ii) that the impact of COVID-19 will be controllable and short lived

- Feb. 23, 2020, Chairman Xi Jinping put emphasis on **continuously tight measures for controlling COVID-19, as well as offering fiscal support for economic development**
- Feb. 18, 2020, Chinese Ministry of Commerce issued a notification highlighting the requirement to **minimize the negative impact of the epidemic on business development, including foreign investment**
- According to SASAC[2)] , up until Feb. 19, **>95% companies in oil & gas, telecom, power grid and transportation had returned to work**

*Note: 1) C = consumption, I = investment, NX = Net Exports 2) State own assets supervision and administration commission*
*Source: Economist Think Tank, Guotai Junan Securities, NBS, Ipsos analysis;*

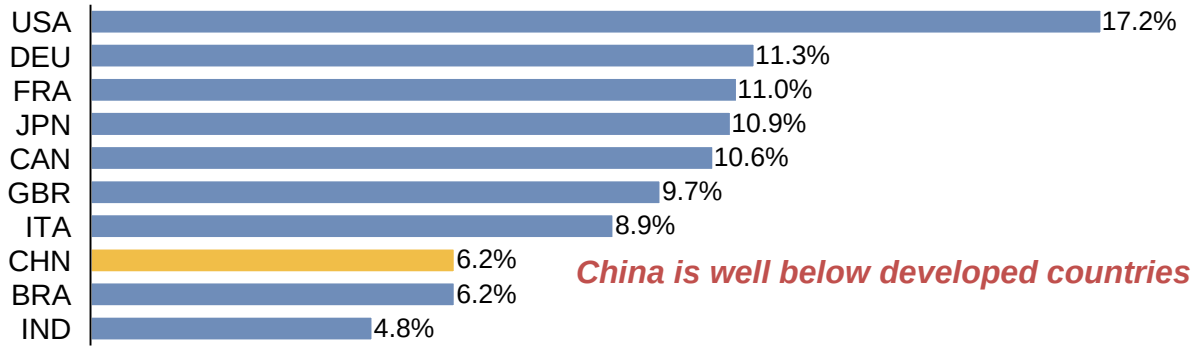
# COVID-19 may catalyze further healthcare reform, by both government and social institutions

## Since 2009, China's heath expenditure as a % of GDP has been continuously rising

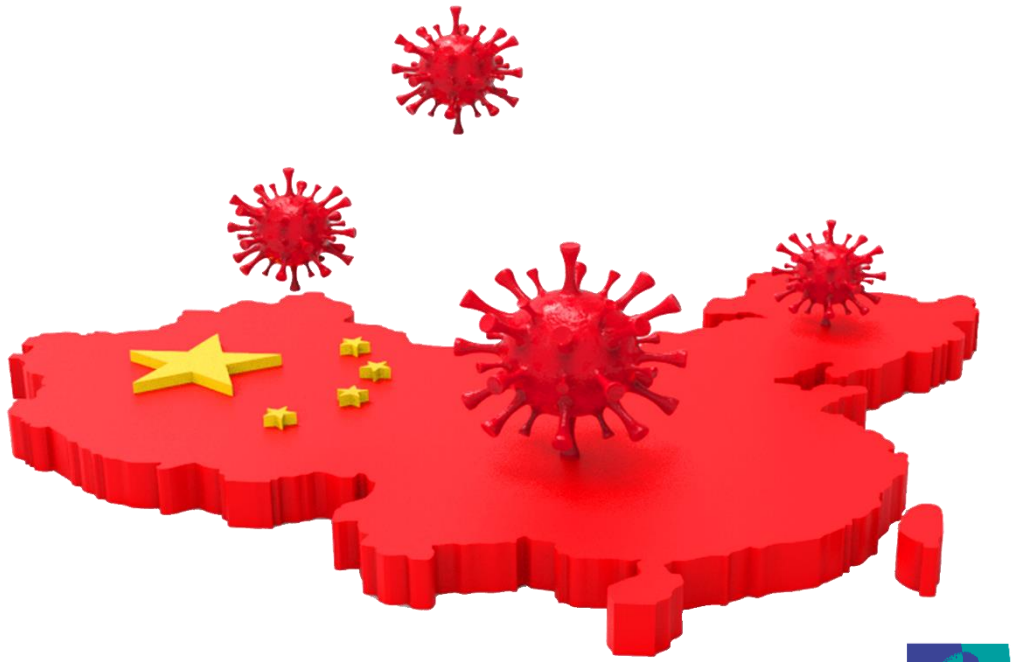



*NB: Chinese Ministry of Health mandated in 2012 that "by 2020, major health indicators should reach the level of moderately developed countries, in which total health expenditure (% of GDP) should reach 6.5% - 7.0%"*

**Health Expenditure (as % of GDP) of the 10 Largest Economies in 2016**




***China is well below developed countries***

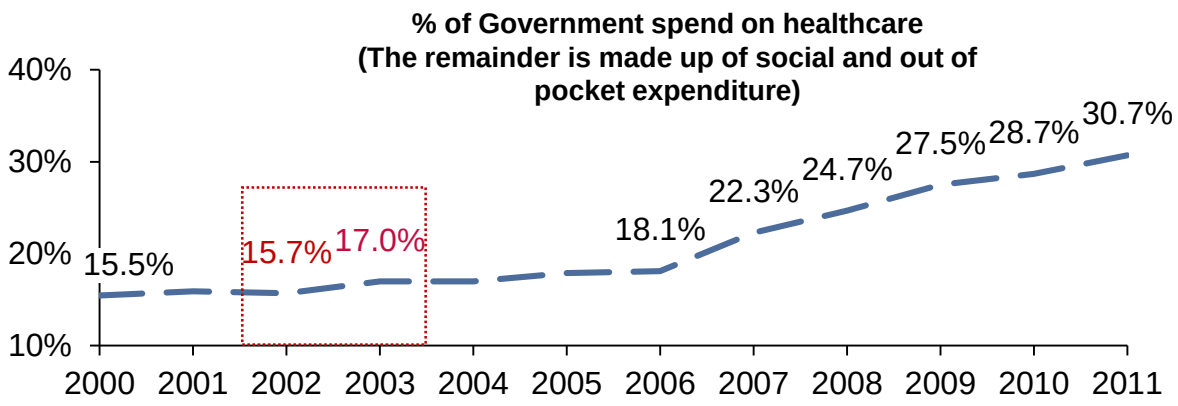


*Source: NBS, Ipsos Analysis*

*Source: NBS, Ipsos analysis*

# Additional resources will be dedicated to optimize primary care provision and improve digital health uptake

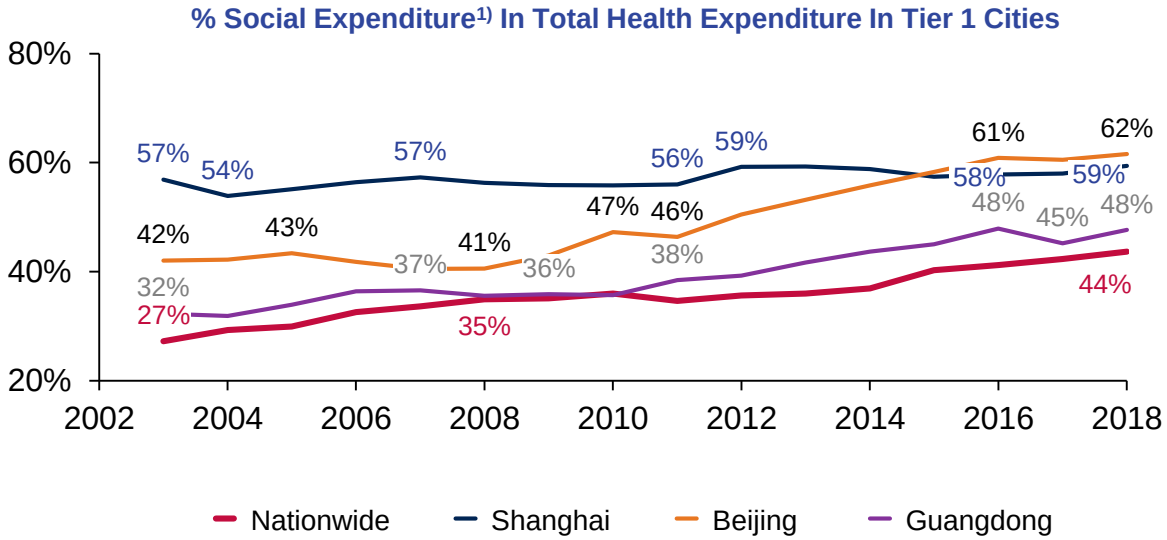
## Government health expenditure as a percentage of the total has been increasing since SARS[1]




### Feb. 14, 2020, Chairman Xi Jinping put clear emphasis on:

- Optimization of medical resources by strengthening the capability of general practitioners and implementing a tiered care model
- Unification of basic medical insurance fund and a public health service fund to improve provider payment and establishment of an exemption system for special groups and diseases
- Integration of big data, AI, cloud computing to improve access to healthcare

## Long-term potential for social health expenditure to take a larger share of the total spend




*Note: 1) China's health expenditure consists of 3 funding sources: government budgets, social expenditures (incl. individual & employer contributions to social health insurance, private health insurance contributions, and social donations), and private out-of-pocket spending*

*Source: NBS, Ipsos analysis*

# COVID-19 is expected to expedite healthcare innovation, improve primary care delivery and increase digital health uptake

| HEALTHCARE VALUE CHAIN | | EXPECTED IMPACT FROM COVID-19 | FUTURE IMPACT | POINT OF IMPACT/POLICY |
|---|---|---|---|---|
| **Pharma/MedTech R&D** | | • Stronger support is expected for innovation in medicine, vaccine, bio-tech, MedTech & IIOT<br>• Temporarily slower pace of R&D affected by tightened medical resource and constraint on patient enrollment |  | • **Short Term: R&D affected**<br>• **Mid/Long Term: stronger support for innovation** |
| **Manufacturing** | | • The SARS epidemic only brought 3-6 months of phased growth for pharma manufacturing therefore a short-term demand is expected post Covid-19 outbreak for antiviral drugs (esp. OTC), medical hygiene & disinfection materials, IVD etc. |  | **Rising demand for some drugs while drop in others may counteract each other** |
| **Distribution** | Pharmaceutical Distributor | • The logistics of medicine & consumables will further concentrate, with better information regarding consumables<br>• Distributors will continue augmenting service levels e.g. strengthening pharmaceutical services |  | **Government expected to continue building a unified & functioning emergency supplies** |
| | Pharmacy on- & off-line | • Short-term increase of sales expected for over the counter and traditional Chinese medicine cold/antiviral drugs due to stockpiling & attempts to prevent Covid-19 infection;<br>• Longer term service enhancements expected e.g. electronic prescription, hospital prescription outflow |  | **Facilitated by the "Prescription Outflow" policy, large chained pharmacy will expand & concentrate** |
| | Internet Health Platform | • Quick launch & scale-up of e-commerce pharmacy, online diagnosis, epidemic tracking and psychological counseling<br>• Better e-commerce integration expected between pharma. logistics and hospitals for online diagnosis |  | **E-commerce platform's richness in category, SKU, and warehousing & logistics will expedite its growth** |
| **Healthcare Service** | Hospital | • Due to the outbreak, volume of out and in-patients is expected to drop by 50-70% in Q1; hospital income in 2020 may suffer a decline of 25-30% |  | • **Acceleration of 'Internet+'; more investment in primary healthcare, and infectious disease hospital**<br>• **Growth of ICU constrained by lack of qualified staff** |
| | Physical Exam - ination Center | • Volume of physical examinations dropped by 60-70% in Q1<br>• General trend of higher health awareness will keep the market growing at +15% p.a. in 2021 and next 3 years |  | **Physical examination penetration & frequency will steadily increase with higher health awareness** |
| | ICL | • In 2020, a huge increase in COVID-19 nucleate & CT testing has been experienced, while other tests suffered from a drop in demand; optimistic outlook for the market is purported by investment in primary healthcare |  | **Limited impact** |
| **Patient/Payer** | Social Health Insurance | • In Feb 2020 NHSA pushed for nationwide implementation of a digital insurance card<br>• Since establishment of NHSA, health insurance fund has been kept steadily, unified UEBMI[2)] could cover 23 months |  | **Since Feb. 2020, corporate payment to UEBMI could be reduced by half, a max. relief of 150 Bn RMB** |
| | Private insurance | • Pressure on certain health insurance funds demonstrates the importance of diversified sources of medical payment<br>• Complementary effect of private insurance in this epidemic is recognized, and its coverage will be encouraged |  | **Feb. 3, CBIRC supported insurance providers to include COVID-19 in accident/illness insurance coverage** |
| | Self-Paying | • Up until 2018, personal health expenditure as a % of the total was at 28.6%: Beijing c. 16%, Shanghai c. 20%<br>• The Government is expected to continuously push for slowly lowering the share of personal health expenditure |  | **'Healthy China 2030' mandated to lower personal health expenditure (% total) to c. 25%** |

*Level of Impact: low → high*  *Positive* *Negative*

*Source: Ipsos Analysis; Note: 1) NHSA=National Health Security Administration 2) UEBMI=Urban Employee Basic Medical Insurance 2) China Banking and Insurance Regulatory Commission*

# IMPLICATIONS FOR THE MEDICAL INDUSTRY

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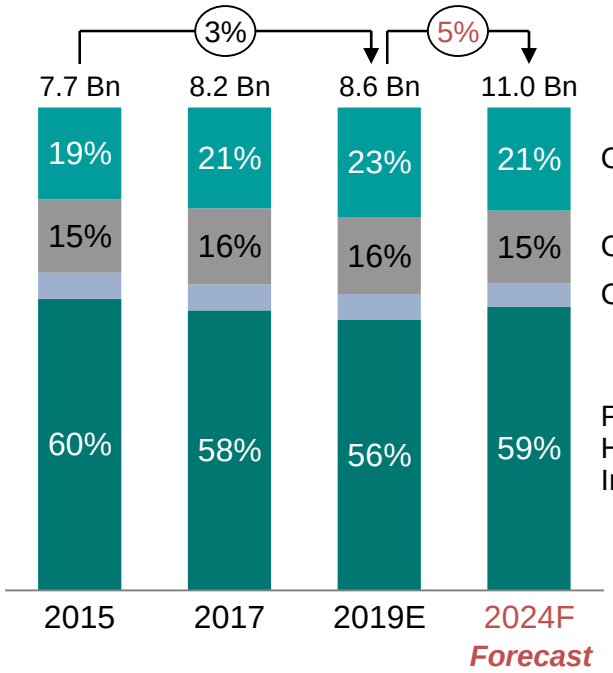
# COVID-19 is seen to catalyze the accelerated implementation of the tiered care model, after its proven role in outbreak containment

## The effects of the COVID-19 outbreak is likely to push for better implementation of tiered diagnosis

- **Tiered care model is still at an early stage:** Up until 2019, the share of patient visits to class III & II hospitals had been increasing every year as family doctor services are still lacking
- **The tiered care model has proved effective in COVID-19 control**
  - Family doctors were in charge of identifying, screening and transferring suspected patients, effectively reducing traffic at hospitals and risk of cross-infection
  - Community hospitals were also essential in the screening & transferring of COVID-19 patients, as well as the treatment of mild cases. This did however expose a lack of infectious disease control experience, supplies & equipment
- **The government is expected to increase investment in primary healthcare to optimize medical service's efficiency and effectiveness**
  - Feb. 16, 2020 the national health committee was ordered to further improve the tiered diagnosis and GP system
  - While working on strengthening cross-hospital class liaison, family doctors should play a bigger role in providing continuous health management services

**Volume of Patient Medical Visits (Nationwide)**




| | CAGR 15-19 | CAGR 19-24F |
|---|---|---|
| Class III | 8% | 4% |
| Class II | 3% | 4% |
| Class I | 2% | 3% |
| Primary Healthcare Institution | 1% | 6% |

*Source: NBS, National Health Committee (NHC), Ipsos Analysis*

# Online diagnosis is gaining momentum, which in turn, is expected to further expedite the implementation of the tiered care model

## Online diagnosis is gradually becoming more mainstream

- Extremely stretched medical resources and cross-infection concerns during the COVID-19 outbreak persuaded lots of patients to use **online diagnosis platforms**
- **Online diagnosis platforms have taken this opportunity to educate users,** to further accelerate public acceptance of seeing doctors online for common and chronic diseases

*Growth experienced by a leading online diagnosis platform in China, in the 1st month of outbreak:*

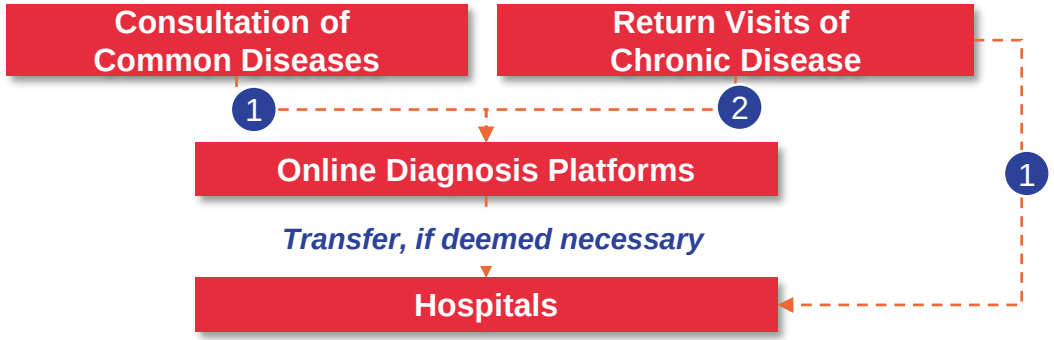
平安好医生

| | |
|---|---|
| Newly Registered Users | x10 |
| # Diagnostic Inquiries | x9 |

## Government policy is also starting to further encourage a wider roll-out of online diagnosis

- Shanghai and Wuhan joined the pilot regions of Yinchuan & Fujian, **in including 'Internet+' medical service in health insurance coverage,** pointing to the governments recognition of its role in facilitating tiered diagnosis and optimizing limited medical resources

ROLE OF ONLINE DIAGNOSIS IN DIVERTING TRAFFIC FROM HOSPITALS OFFLINE




Source: NBS, National Health Committee (NHC), Ipsos Analysis

# Long-term policy will likely encourage healthcare innovations

## The 2016 medical innovation policy had resulted in significant growth in the number of medical device & pharma R&D projects…

**2016** 《Drug MAH Mechanism Piloting Program》

**Marketing Authorization Holder (MAH)**

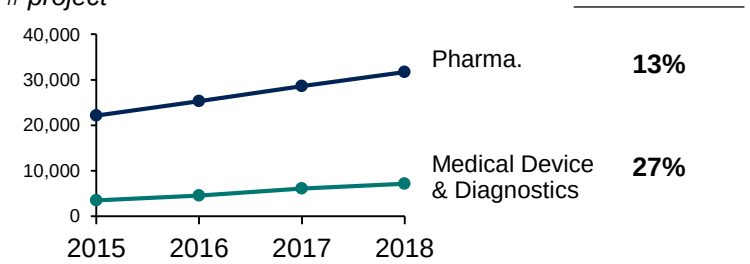
**2017** 《Official Opinions on Deepening the Review & Approval Policies Reform and Encouraging Drug and Medical Device Innovations》

**2018** 《Special Review and Approval Procedure for Innovative Medical Devices》

**Priority Revie Path to Speed Approval of Novel Drugs & Devices or Necessary of Emergencies**

**Acceptance of Overseas Clinical Data**

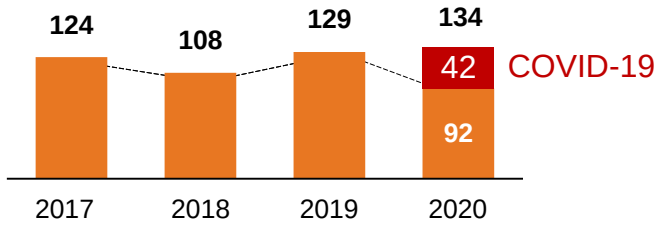
**# New Product R&D Projects by High-Tech Medical Industry**




| | CAGR 15-18 |
|---|---|
| Pharma. | 13% |
| Medical Device & Diagnostics | 27% |

## …However clinical trial progress has been impeded by the COVID-19 outbreak, causing short-term R&D delays…

- According to Reuters, 20% of clinical trials worldwide took place in China
- However, during the outbreak, almost all hospitals focused on COVID-19 containment with limits on CRA/CRCs in-hospital visit, discouragement of unstarted/collective programs, so many **clinical trials have been delayed**
- Dropouts, missing data, scheme deviation etc. also pose threats to trial effectiveness




**# non-COVID-19 related clinical trials with starting date in Feb. 2020 has dropped by 29% compared to Feb. 2019**

## Capability of medical innovation has proved essential in battling COVID-19; further push for innovation is expected from the government

- Companies and research institutions, both domestic and abroad, quickly launched R&D for drugs and devices that will aid COVID-19 containment
- NMPA activated **fast-track special approval** for drugs & devices necessary for COVID-19
- Chairman Xi Jinping pointed out the necessity of **"tighter collaboration between scientific research and clinical application, for more efficient drug & vaccine launch"**

*Source: NBS, clinicaltrials.gov, NMPA medical device registration database, Ipsos Analysis*

# Digital health and “smart medical systems” will significantly change the healthcare delivery pathway

***Information interconnection between family, community health center, hospital, health administration department and medical insurance under one smart medical system***

Patients

EMR

◆ Medical information integration platform

◆ Regional medical information

| Diagnosis treatment | Inquiry | First visit | Treatment | subsequent visit | Follow up |
|---|---|---|---|---|---|
| Internet hospital | ◆ *Online inquiry* | | | | ◆ *Patient education* |
| Family doctor | ◆ *Home visit* | | | | ◆ *APP reservation* |
| Community hospital | ◆ *Community preventive education* | | | | ◆ *Follow-up & chronic disease management* |
| Third-party physical examination center | | ◆ *Laboratory outsourcing* | ◆ *Surgical robotic surgery* | | |
| Hospital | | ◆ *AI Diagnosis* | ◆ *AI robot ward management* | ◆ *Telemedicine* | |

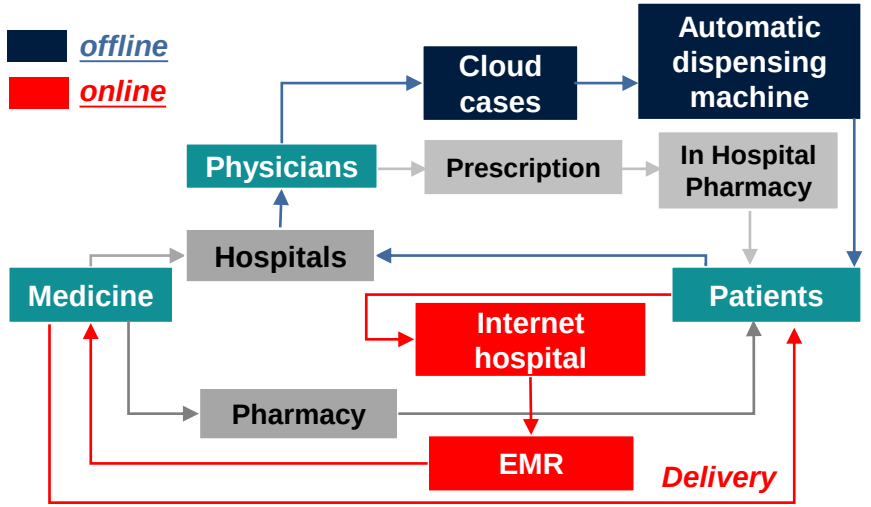
| | | | |
|---|---|---|---|
| Pharmacy | Online pharmacy | DTP pharmacy | ◆ **Online pharmacy prescription circulation and medical insurance reimbursement**<br>- 2020/02/23 Shanghai supports Internet + medical services to be included in the pilot medical insurance policy |
| Government | CDC | Health committee | ◆ **Hospitals and government departments in the reporting system and health insurance**<br>- Establish a preventive clinical system<br>- Medical insurance IT |

**TIPS**

✓ ***Small portable household equipment will flow into the home medical equipment standing army***

✓ ***Emergency management and centralized procurement of medical equipment and consumables***

## MARKETING UPGRADE IS UNDER WAY

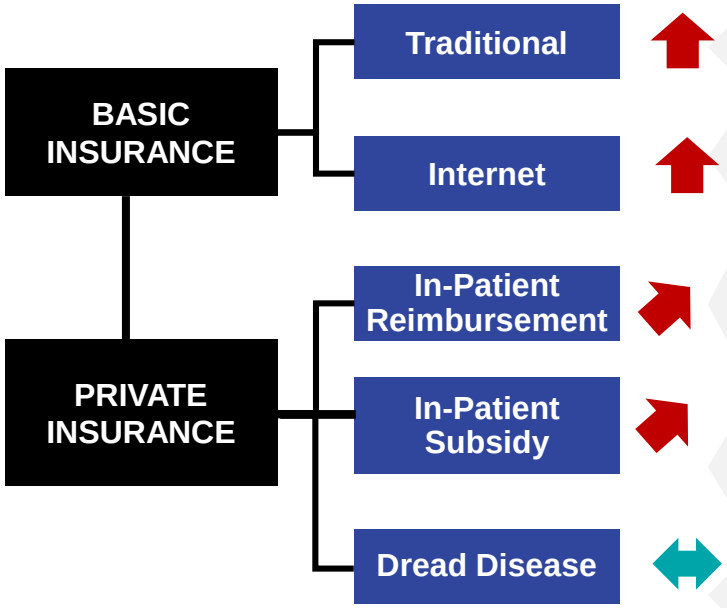



- **To take more initiative in digital health**
  - Leverage online platforms to improve patient compliance and longer prescription validity and DOT
  - Pay close attention to the progress regarding extension of health insurance coverage to e-pharmacies
- **To develop online and offline hardware support**
  - Lower-level hospitals to focus on diagnosis. Upper- level hospitals to focus on treatment
  - Construction of platforms and equipment to better support a cloud case system
- **To utilize national & regional KOL influence**
  - Diagnosis and treatment are carried out separately, and the outpatient flow of Grade A hospitals is diverted
  - Multidisciplinary team consultation & lateral medical records/ big data sharing

Source: National healthcare security official website, Ipsos analysis

# Private insurance may experience a short-term increase in demand, which will require long term government support

## China's current private insurance market still requires government support to improve the reimbursement model and optimize crisis responses




◆ **Basic medical insurance**
- Almost universal coverage, but still far from being sufficient in level of medical security provided

◆ **Internet insurance:** Feb. 26, 2020 policy on 'Internet+' Medical Service Billing & Reimbursement
- 'Internet+' Medical Service to be covered by health insurance, and fee to be under the same billing code as regular health care service

◆ **Health insurance regulation during COVID-19 Outbreak**
- **All drugs & medical service items listed in <COVID-19 Treatment Plan>,** are temporarily covered by medical insurance fund
- NHSA draws medical bills in advance to **relieve financial pressure** of designated hospitals treating COVID-19

◆ **Private insurance status quo**
- Currently, reimbursement limit (paid from unified account) = (total expense – out of pocket– co-payment – deductibles) * reimbursement rate, with all invoices for **individual settlement with insurance companies**
- **CBIRC issued a notification in 2020 to stimulate development of private insurance**

◆ **Post-epidemic demand for private insurance**
- **In May – August ensuing the SARS outbreak in 2003, health insurance sales grew at 309%, 265%, 158%, 131%**

- ***Promoting private insurance is essential, in order to complement basic medical insurance for a more comprehensive medical reimbursement system***
- *Private insurance and basic medical insurance connected to an intelligent hospital system for direct**, one-time settlement with hospitals** on- and offline*
- ***Insurance covering contagious disease outbreak is still a white space**, current reimbursement is done by government funding and coverage adjustment*
- ***After the outbreak, private insurance may experience retaliatory growth, and regulatory intensity is expected to step up***
- *A more clear and defined development roadmap for private insurance may emerge*
- *Government will encourage better products and services to create a closed-loop ecology of **"health insurance + health management + medical service"***

*Source: CBIRC (China Banking and Insurance Regulatory Commission, Ipsos Analysis*

# IMPLICATIONS FOR THE MEDICAL DEVICES SECTOR

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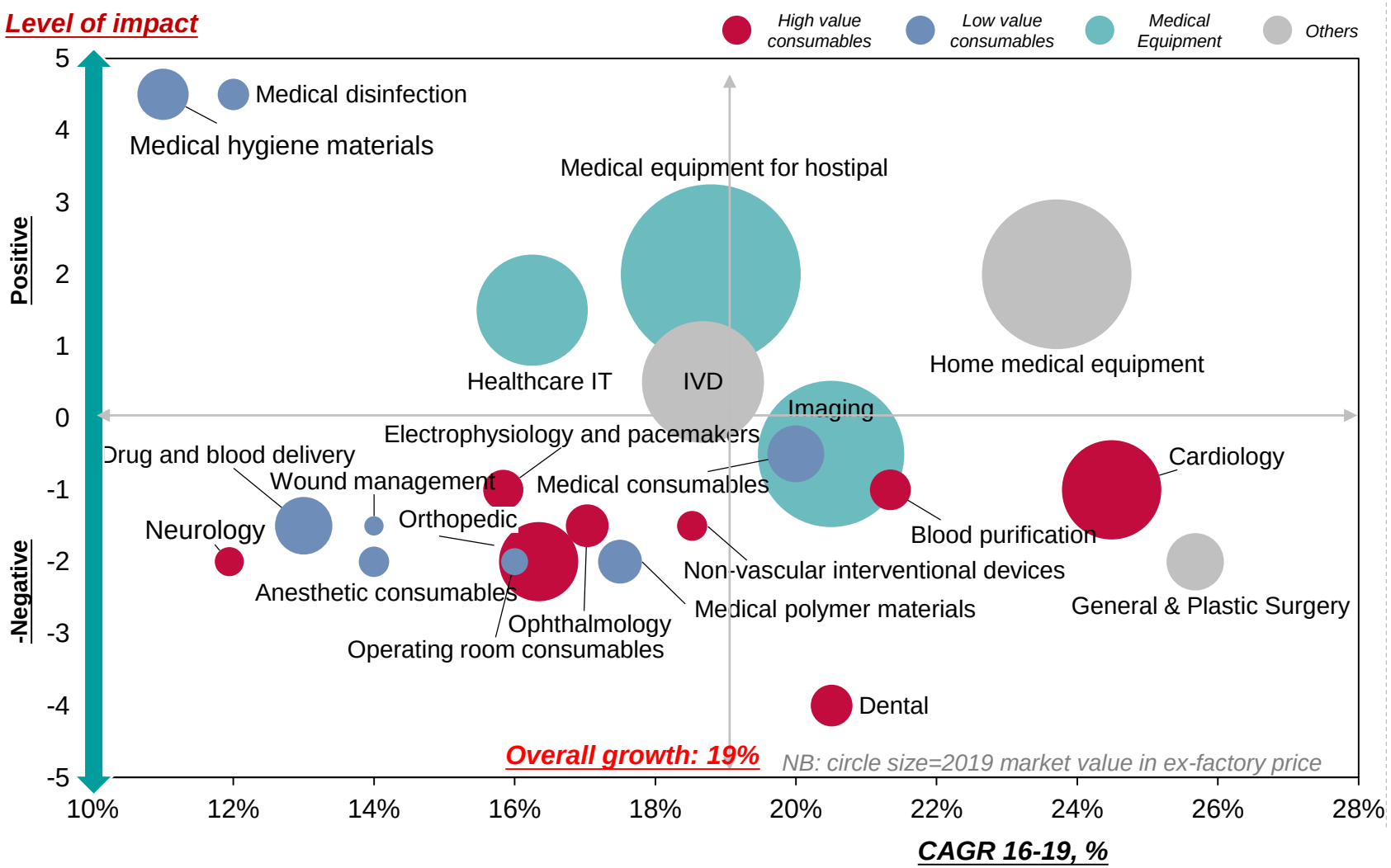
# Growth of high-value consumables are expected to decrease, whereas hospital & in-home medical equipment, imaging & IT are likely to increase

## MedTech growth and level of impact by COVID-19, by category




## POINT OF IMPACT

**Nationwide construction of COVID-19 dedicated hospitals and field hospitals, generating short-term demand for diagnostic equipment**

- COVID-19 testing kit & reagents
- Patient monitor, oximeters, IVD equipment, respirator & ICU related equipment and consumables

**Spiking demand for infection control & protection gear carries a risk of over-stocking post- COVID-19 epidemic**

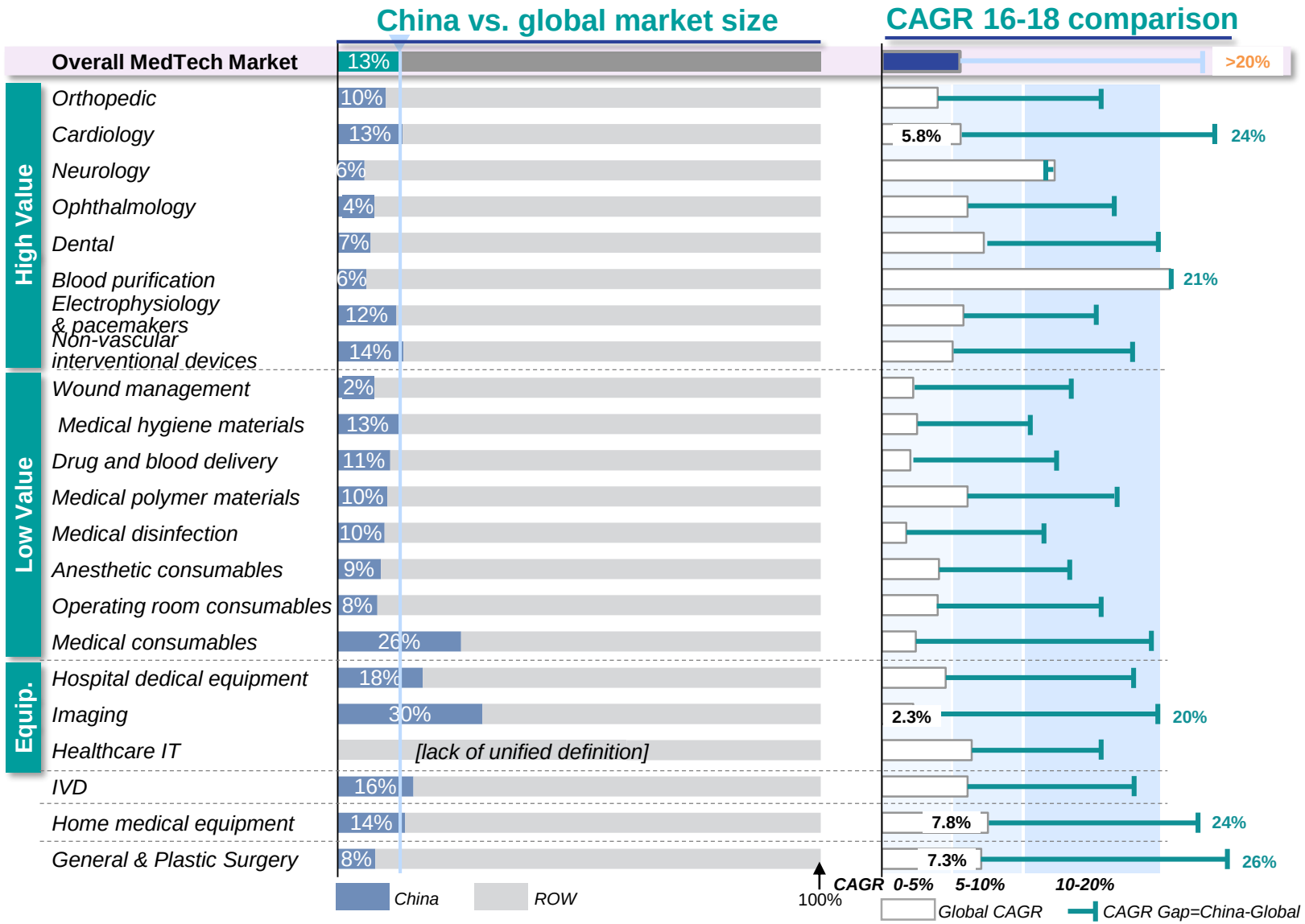
- Masks, protective suit & disinfectants may become a regular household item, and now part of strategic national stockpile
- Rising clinical demand for infection control devices, e.g. needle-free concept

**In the long term, the MedTech industry will see a premiumization among domestic players as they innovate to upgrade offerings**

- IVD equipment & reagents e.g. POCT, molecular diagnosis
- High end medical equipment e.g. CT
- Ortho prosthesis, interventional etc.
- Would management & home devices

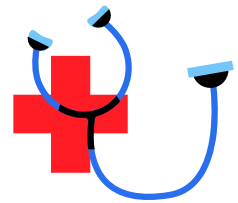
*Source: <China Medical Device Blue Book 2019>, EvaluateMedTech: World Preview 2018, Outlook to 2024, Ipsos MedTech Sales Monitoring Database*

# China has demonstrated an impressive growth momentum, compared to the global MD&D market




## HUGE GROWTH POTENTIAL OF CHINA MARKET

- China makes up about **13%** of the global MedTech market
- Specific segment analysis:
  - ✓ **Higher global share in medical equipment, IVD and medical consumables**
  - ✓ China still lagging behind in high-value consumables and wound management



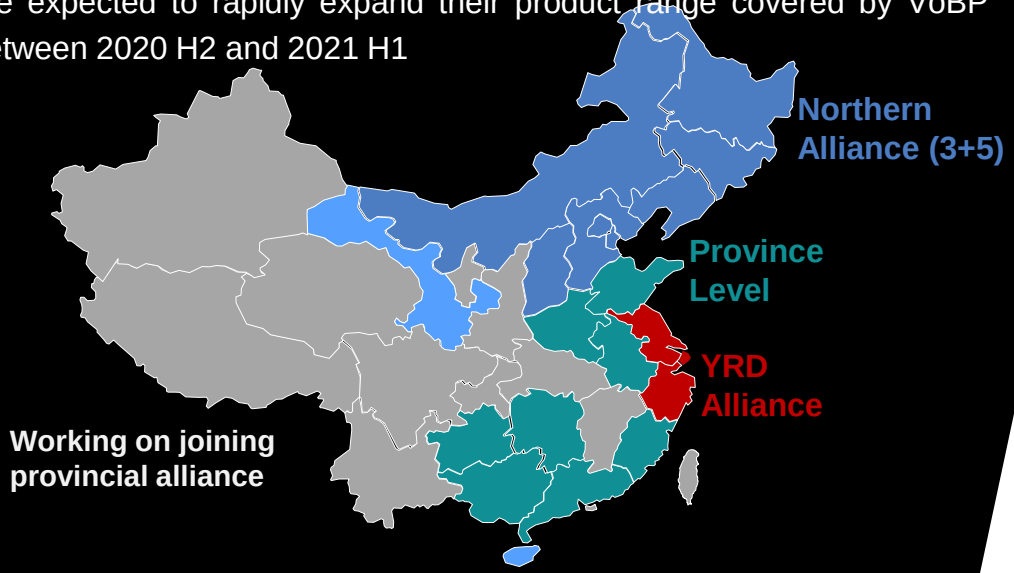
- **China market has grown significantly faster than the global market** including rapid growth of almost all segments
- Growth is seen in yet underdeveloped **high-value consumables and plastic surgery, demonstrating strong momentum**
- Growth of Neurology high-value consumables slightly behind global, yet to catch up

Source: <China Medical Device Blue Book 2019>, EvaluateMedTech: World Preview 2018, Outlook to 2024, Ipsos MedTech Sales Monitoring Database

# Volume-based procurement (VoBP) is likely to face a 3-6 month delay; 2020 H2 will focus on high-value consumables

**Due to COVID-19, VoBP in 2020 is expected to face a 3-6 month delay; in 2020 H2, VoBP is most likely to take place at the province or provincial alliance level. Building of the Sunshine Platform and online trading platform will be expedited**

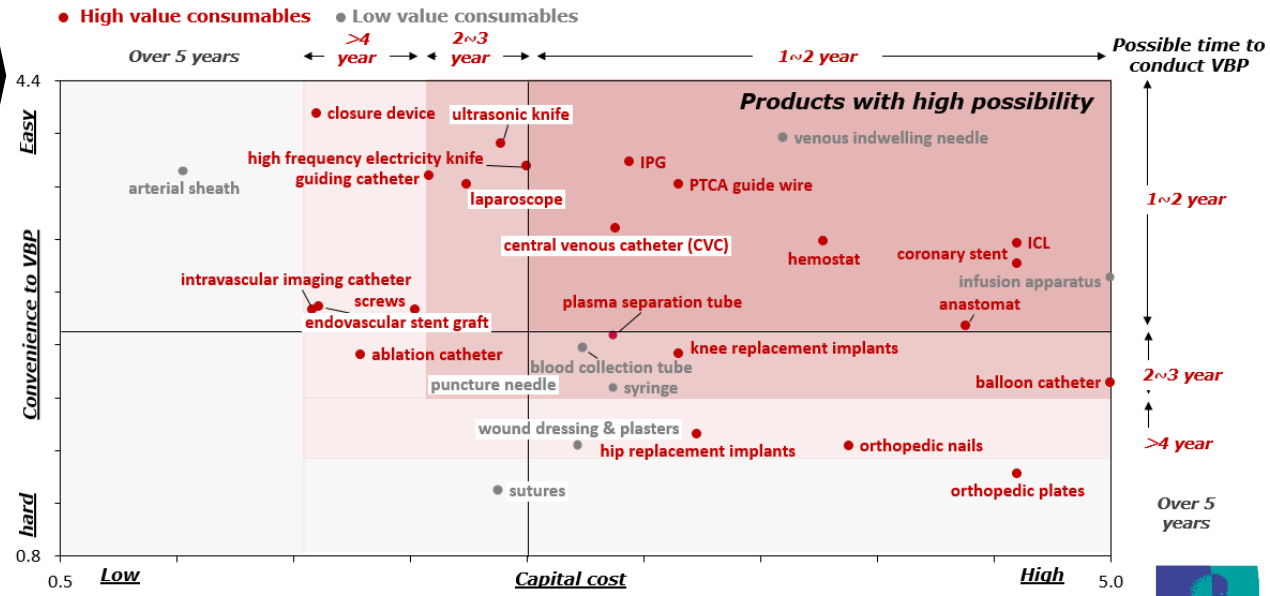
- The National Health Committee plans to set up a nationwide price sharing platform step by step over the next 3+ years, to eventually realize 'universal access to each province's prices'
- The North Alliance (8 provinces in Northern China) as well as Guangdong Province, Henan Province and Yantze River Delta Alliance are expected to rapidly expand their product range covered by VoBP between 2020 H2 and 2021 H1




**In 2020, the province-level VoBP of high-value consumables is going to be carried out. Reagents will be sold on the Sunshine Platform but low-value consumables are on hold**

- Within high-value consumables considered for VoBP, ophthalmology, vascular interventional device, electrophysiology & pacemakers and blood purification will be prioritized
- Policies such as raising medical service fee, regulating health insurance directory of medical consumables, DRG billing are to be implemented in parallel

**VoBP Coverage Trend by MedTech Category, 2020-2024**




*Source: Ipsos MedTech Market Access Monitoring Database, Ipsos Analysis; Note: VoBP = volume based procurement*

# Takeaways and responses for MD&D companies in the light of the COVID-19 experience

***Impact***

***High*** ——————————————————— ***Low***

## Facilitate business normality with customers, backed by effective distribution & clinical support

**1**

- Make reasonable arrangements to ensure safe work resumption in manufacturing, warehousing, logistics, sales, digital marketing and medical service team
- Coordinate with suppliers for business continuity and to overcome barriers to get back to work promptly
- Adjust interactions with customers to better suit their needs post outbreak (remote/online)
- Help clinical, R&D and industrial customers alike tackle barriers to return to work promptly and smoothly

## Seize opportunities in the coming 1-2 years from government health expenditure & infrastructure

**2**

- Identify key MedTech products that will be purchased to strengthen the public health system including a strengthened primary healthcare and outbreak response
- Investigate the requirement for IT & equipment & infrastructure for 'Internet+' medical service
- Leverage the patient/doctors changing demand for medicine, devices and private insurance triggered by the outbreak
- Be ready to maximize the potential positive changes and opportunities from a 34 Tn RMB government investment in 2020

## Optimize corporate resource allocation for more efficient sales and operation

**3**

- Enable better collaboration between Regulatory Affairs & Sales depart to respond to policy changes e.g. VoBP
- Build IT and Big Data capability for clinical product registrations to become more agile & innovative
- Step up automation in manufacturing to be less reliant on human labor
- Improve supply stability and efficiency for better resilience

## Make group-level strategies to fully prepare for and ride the wave of a digitization trend

**4**

- Accelerated growth of 'Internet+' medical service means MedTech supply chain and auxiliary support should also adapt to the new online model
- Offline sales & marketing constrained by epidemic outbreak also points to urgency of digitization
- Closely monitor any potential change on prescription, patient behavior and consequential impact on MedTech industry, pursuant to any new health insurance policy, online diagnosis & drug retail
- Keep tracking emerging demand from primary healthcare

*Source: Ipsos Analysis*

# THANK YOU!

## Please contact us!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