China Public Hospital Innovation Roadmap

Improve Financial Performance, Achieve Sustainable Growth
THE BIG 3

MAJOR CHALLENGES AHEAD
Along with the progression of the healthcare reform and promotion of health insurance spend control, public hospitals are going to face significant fiscal challenges
Page 4

INNOVATE NEW MODELS
Increase revenue through innovations in customer base and business model, specialty, medical service quality and client service. More importantly, by leverage own brand and expert resources to establish new service income source and service model
Page 6

REDUCE COSTS AND IMPROVE EFFICIENCY
By implementing clinical pathway, innovating treatment and operation and improving resource utilization
Page 9
In the context of national healthcare reform, public hospital’s financial performance is facing enormous challenges. First is revenue decrease. Primarily due to the impact of three aspects: cancellation of drug price mark-up; ending balance erosion of public health insurance fund and increasing demand to control health expenses; and increasing risk of the sustainability of government subsidies. As the “SDFH - separation of drug sales from hospital” reform gets continuously implemented, public hospital’s revenue will decrease further. Second is the rising of operation cost. Healthcare reform requires reform of physicians’ compensation and improvement of hospital IT system, which will increase hospital operation cost. Meanwhile the low standardization of service processes and low treatment efficiency also increase operation cost indirectly. Roland Berger believes that, in the context of healthcare reform, public hospitals could increase revenue through customer base and business model innovation (mining high-end needs, cooperating with private insurance and developing PPP model), and specialty innovation (screening and building star departments, developing differentiated specialties), medical service quality innovation (application of clinical pathways, medical service quality evaluation system, resource sharing mechanism, academic exchange and key specialty cooperation), client service model innovation (developing patient-centric treatment model, developing preventive & rehabilitation services). In the perspective of cost reduction, public hospital could reduce operation cost through operational cost control (optimizing purchasing model and procurement processes, streamlining back-end management, improving bed turnover), and operation efficiency improvement (using clinical pathway standardization, innovating treatment model to improve resource utilization). The purpose of this paper is to discuss how public hospital could improve financial performance and achieve sustainable growth.
Financial Performance Dilemma of Public Hospitals.

INCOME DECREASE
Public hospitals’ income mainly comes from drug sales, medical services and government subsidies. Taking Beijing as example, when Beijing Government started to implement the SDFH\textsuperscript{1} initiative and required all public hospitals to cancel the 15% drug price mark-up, it directly affects about 5.9% of hospital income (on average, 39.9% of Beijing public hospitals’ income is from drug sales); Meanwhile, with the continuous erosion of the ending balance percentage in public health insurance fund (22.9% in 2005, and 18.8% in 2013), the available health insurance fund in the longer term will surely decrease, which means stronger demand on public health insurance fund control. In fact, health insurance payment scheme reform (such as Total Amount Prepayment and DRGs, etc. implemented in Beijing) was designed for regulating hospitals’ service behaviours and avoiding additional over-treatment cost. From government subsidies perspective, government healthcare expenditure has been rising continuously over the past decade, the expenditure as % of fiscal expenditure has risen from 4.47% in 2000 to 6.66% in 2012, and % of GDP has risen from 0.72% in 2000 to 1.61% in 2012, so the sustainability of government subsidies is at risk. In the 13th Five Year Plan period, under “new economic norm”, government subsidies will not become a sustainable income source to all public hospitals. As we can see from the lessons in developed markets, the German health care reform had also applied government subsidy model. However, starting from 1990s, all levels of German government

\textsuperscript{1}SDFH refers to Separation of Drug Sales From Hospital
suffered fiscal deficit, so the government subsidies to hospitals decreased from 3.8 billion euro in 1992 to 2.7 billion euro in 2008. Overall, in the context of China healthcare reform, traditional income sources are no longer sustainable, public hospitals are now facing challenges on how to transform income structure and innovate income model. → A

With the gradual and deeper implementation of SDFH, income from drug sales in public hospitals will be further reduced. Roland Berger believes that “separation of drug sales from hospital” will be substantively and broadly implemented during the 13th 5-Year Plan. The anticipated outcomes will be: Outpatient pharmacies will be fully separated from medical service organizations, while only inpatient and emergency pharmacies will be retained in hospital; Patients themselves will decide the channel (online or retail pharmacies) at their convenience to fill the prescriptions from physicians and pay. Therefore, for public hospitals, income from drug sales will be further reduced.

COST RISE
Public Hospital Reform requires physicians compensation reform by introducing performance-based pay system, and so to increase compensation level of care providers. (China hospitals’ Human Resources cost only consists 26% of hospitals’ total cost, while it is 53% for HCA in US, and 56% in Germany for Rhoen Klinikum). In the situation that other costs (purchasing cost, equipment depreciation and amortization cost and other administrative cost) remain the same, compensation increase will drive up public hospitals’ total cost. Also, the requirement of improving hospitals’ operational efficiency and IT build-up requirement from healthcare reform (the IT cost in international leading hospitals accounted for 5% of hospital revenue, while in China, it only accounted for less than 2%) to support sharing patient information among city hospitals and community hospitals will also increase hospitals’ cost base. For treatment efficiency, current treatment efficiency and medical resource utilization rate are quite low compared to that of developed countries. Less-optimal resource utilization also leads to cost rise indirectly. According to a market research, the average inpatient days in developed countries is only 3.8 days, while in China it is 9.3 days (2013). → B

ANALYSIS OF IMPACT ON PUBLIC HOSPITALS’ FINANCIAL SITUATION
According to the 2015 Healthcare Statistic Yearbook, the average revenue of per public hospital in China is RMB146.1 million in 2014, with an average total expense of RMB139.4 million, and the average operating ending balance is RMB 6.7 million per hospital, with a positive balance ratio of only 5%. If 15% drug price mark-up was taken out, the average ending balance will become negative RMB1.622 million, with a balance ratio of negative 1%. If government subsidies were excluded from hospital income source, the balance will decrease to negative RMB4.56 million, with an ending balance ratio of negative 3%. If drug price mark-up and government subsidies were both taken out at the same time, then the ending balance will decrease to negative RMB12.88 million, with a balance ratio of -9%. As we can see, in the context of public hospital reform, assuming we keep medical service cost unchanged, only consider cancelling 15% drug price mark-up, the ending balance of hospitals will drop dramatically even operation cost stays the same. If we consider further operation cost rise, then public hospitals’ financial performance will encounter very severe challenges.

COST RISE

INCREASE COMPENSATION LEVEL OF CARE PROVIDERS

LOW MEDICAL RESOURCE UTILIZATION RATE

IT BUILD-UP
Strategic Innovation Initiatives to improve public hospitals' financial situation

INNOVATE REVENUE MODEL

Patient group and business model innovation: Proactively explore PPP model, uncover high-end medical needs and cooperate with commercial insurance

Based on the non-for-profit principle established by government, public hospitals could consider to adopt differentiated patient positioning strategy, providing high-end medical services to high-end customers. In fact, well-known hospitals, such as Beijing Union Medical College Hospital, Shanghai Ruijin Hospital and Guangzhou Zhongshan Hospital etc., all have set up VIP department. But healthcare reform policies require controlling the scale of VIP services in public hospitals (no more than 10% of medical service revenue in public hospital). In this case, hospitals’ international department and joint venture/ cooperation types of high-end medical institutions could become the main approach for public hospitals to provide high-end services.

Public-private partnership (PPP) will become the main way for public hospital business model innovation. Localized character of medical brand and high recognition on large public hospitals by Chinese society have led to the difficulty for private medical institutions to build a competitive and sustainable medical brand in the short team. Gaining access to key physician resources and the opening-up of physician market are going to be a longer-term process for private medical institutions. Public hospital can cooperate with private medical institutions through PPP model, to extend advantageous brand, human resource and professional skills, and in return, to gain brand license fee, service charges on human resource and professional skill provided and revenue sharing. Public hospitals can also further improve own brand influence and reputation by gaining critical patient-service skills that private medical institutions are good at. By doing so, public hospitals can circumvent the "VIP revenue limitation" policy, and maximize the utilization of core brand value and output of key physician resources. Among high-end medical institution brands in Beijing, Shanghai and Guangzhou, 90% of the institutions are joint venture/cooperation between public and foreign institutions. For example, Shanghai International Hospital is a cooperation between Shanghai Huashan Hospital and United Family.

Under the situation that "increasing government subsidies and medical service income" fails to effectively compensate for the dramatically-dropping pharmacy income, public medical institutions (especially for large public hospitals) can review and plan “how to effectively leverage own brand and expert resources” to establish new income source and service models. High-end medical service will bring new revenue for public hospitals, including income from premium pricing.
and membership management fees. According to Samsung Economic Research Institute report, general registration fee of VIP department is between RMB 100 to 500, other treatment and pharmacy prices are 2-3 times that of basic healthcare services. Registration fee of for-profit high-end medical institution could reach between RMB 200 to 700, treatment and pharmacy prices are also several times higher than that of typical public and private hospitals. High-end medical institution could demand considerable premiums on service charges. From membership management fee perspectives, annual membership fee for adult member (above 12 years old) in Beijing United Family is RMB1035. Beijing Women and Children Hospital VIP membership fee runs from RMB10,000 to 200,000. The New Century Children’s Hospital Panda Doctor Club annual membership fee is RMB 6,000. When membership goes up, membership fees plus residual financial benefit would create another income stream.

Given the increasing coverage provided by commercial insurance on high-end medical services, cooperation with commercial insurance will be an important way to attract high-end customers. In 2010, 53.7% of HCA’s revenue came from commercial insurance. In China, 60% of critical illness insurance is provided by three insurance companies under PICC group. Critical illness insurance has about RMB 100 billion potential. Currently, China’s high-end medical insurances are mainly provided by Bupa Insurance, AXA, Aetna, CIGNA, MSH China, AIU, China Pingan, Winterthur, Allianz and other insurance companies, which covers outpatient, inpatient, female fertility, dentistry, ophthalmology, emergency, special clinics, comprehensive health management and etc. Now the coverage of insurance is still increasing with government’s strong incentive to complement basic healthcare insurance schemes. Public hospitals should consider to cooperate with commercial insurance companies to attract high-end population.

Specialty Innovation: build star departments and develop differentiated expertise

Large public hospitals should thoroughly evaluate their own capability advantages, comprehensively review market demand, potential size and value of specialty area, medical technician availability, equipment requirements, capital requirements, regulatory constraints and other factors, and leverage all available resources to build star departments, establish differentiated specialty expertise in key disease areas and departments, and leverage brand influence to attract and retain customers in the longer term. MD Anderson Cancer Center in U.S., by focusing on cancer research and treatment, is well received as the best oncology hospital by media and society. It admits more than 100,000 patients every year around the world and many patients are well known politicians and
Quality and Technology Innovation: ensure the controllability and continuous improvement of treatment quality, improve technical professional capability

Improving care quality and technical professional standards can help to improve patient satisfaction, enhance patient viscosity, and retain repetitive patients. This can be achieved in three ways. First is to establish clinical pathways. Clinical pathways can pave a foundation for care quality evaluation and performance assessment through optimizing diagnosis and treatment scheme and improving service efficiency. From 2004 to 2005, United States and Singapore had 21%-40% patients who were treated by applying clinical pathways. Australia, Canada and England had 11%-15% patients treated with clinical pathways. China has a late start on clinical pathways. From 2008 to 2009, there were only 3%-4% patients who were treated by using clinical pathways even in Class III hospitals in China, far below the levels of developed countries. Second is to establish care quality indicators, monitor and improve clinical procedure and clinical outcomes. The dimensions of care quality assessment indicators include efficacy, safety, technical, timeliness, service and economics. Wuhan Asia Heart Hospital developed 22 quality assessment indicators around the surgical procedure, and adjusts indicators based on disease type and surgery to improve the overall surgery quality. Third is to explore resource sharing mechanism, academic exchange and key specialties cooperation to improve professional skills and standards based on existing advantages. Nanjing Tongren Hospital and Beijing Tongren Hospital established cooperation mechanism. At the early stage of Nanjing Tongren’s establishment, Beijing Tongren Hospital sent more than 20 experts, in rotation, to provide care and treatment in Nanjing Tongren Hospital. For key departments, Beijing Tongren Hospital sent experts to support Nanjing Tongren for longer period of time. In order to train attending physicians, Nanjing Tongren sent graduates every year to Beijing Tongren to participate in training for two years. Based on the deep cooperation mechanism, Nanjing Tongren Hospital quickly established superiority in key departments.

Patient Service Model Innovation: become patient-centric and explore and serve unmet needs

The care model in China’s public hospital is “disease-centric”, which mainly focus on disease treatment and less on patient experience and patient care. Based on a 2012 physician-patient relationship survey in 2012, public hospitals had very serious problems on patient service. Considering China’s current situation of physician shortage, public hospitals could optimize hospital environment design, patient treatment process, establish & monitor patient satisfaction indicator etc., so to improve service quality and lift up patient satisfaction. For example, being more service-oriented & function-oriented in hospital space design; optimizing the layout of departments by patient treatment processes analysis, outpatient amount analysis, and patient moving pattern analysis; reducing inefficient waiting time through optimizing outpatient, emergency, and inpatient processes; Improving cross-department cooperation through effectively allocating doctor resources by triage and technology innovation. Beijing Anzhen Hospital redesigned first floor lobby into different function areas and established patient diverting system, which successfully reduced payment and waiting time, and so patient satisfaction got improved. Kennestone Hospital in Atlanta U.S. built family-ward in order to sufficiently collecting and analyzing patient (including patient family) information, satisfying patients’ various needs such as education, entertainment and religion. Singapore hospitals have receptions in each medicine consulting area to help patients in registration, consulting, payment and filing inpatient requests. They also provide patients with a special pager in order to alert patients with next step changes. Japanese Hospitals pay a lot of attention to signs. They set signs at every intersection, including ground, walls and ceiling. Different departments will be labeled by different signs and colors.

China’s medical service system has been focusing on wealthy people from different countries. Korea CHA group started with obstetrics and gynecology clinic. By accurately positioning itself as expert in obstetrics and gynecology and reproductive medicine, CHA group has developed itself into a world leading hospital in those areas. Its CHAUM life center provides high-end anti-aging stem cell therapy and individualized treatment programs. It attracts international celebrities and royal family, and 40% of its patients are from overseas. Shanghai Zhongshan Hospital has been focusing on building its internal cardiac and cardiac surgery departments and brand influence consistently for many years, which has helped to establish Zhongshan as the national leading general teaching hospital in China.
In addition, by streamlining logistics personnel, improving bed turnover rate and utilization rate, public hospitals can further reduce costs. Shanghai Renji Hospital has implemented logistics outsourcing from 2002 and logistics personnel was gradually reduced every year. In 2008, logistics personnel decreased by 30% compared to that of 2002. Tiantan Hospital reduced number of pharmacists, in hospital pharmacy, from 11 to 4 through the automation of drug management system and let the extra number of pharmacists went back to more value-adding clinical work, which decreased labor costs. In 2011, Second Affiliated Hospital of Zhejiang University set up a designated management center to provide unified bed management, which can deploy total 2,000 hospital beds under one management. This dramatically increased bed utilization rate, shortened average length of stay by 1.75 days, and also shortened surgery waiting time by 1.01 days.

**ACHIEVE COST EFFICIENCY ADVANTAGE BY COST CONTROL AND HIGHLY-EFFICIENT OPERATION**

**Control operational cost**

Hospital costs include labor cost, procurement cost (drugs, supplies, equipment, etc.), depreciation and amortization of fixed assets and other costs. In China 26% of urban public hospitals’ overall cost is labor cost, 59% is procurement cost, 8% is depreciation and amortization of fixed asset and 8% is other cost. In U.S. HCA, 53% is labor cost, 20% is procurement cost, 6% is depreciation and amortization of fixed asset, remaining 21% is other cost. Procurement cost in China is approximately 3 times that of U.S hospitals. Apparently, reducing procurement cost through optimizing procurement would be one practical choice to control cost. In 2009, West China Hospital optimized procurement processes and supplier base. West China reduced the number of suppliers and supply varieties in order to achieve centralized, volume discount and large scale procurement. Since then, procurement cost had been dramatically reduced, where the high-value consumables cost decreased by RMB 12 million. Hong Kong Hospital Authority took three different procurement methods in order to control drug expenses: small amount drugs under 50,000 HKD of annual expense level was purchased directly by hospitals; for considerable amount drugs of between 50,000 – 1,000,000 HKD annual expense level competitive negotiation procurement process would be applied; huge amount drugs of more than 1 million HKD annual expense level would apply centralized bidding process.

**Establish clinical pathways to standardize treatment method, reduce wasteful length of stay, enhance treatment efficiency and hospital bed turnover rate, and establish price advantages compared to other same level public hospitals.** The implementation of clinical pathways can reduce treatment cost. In U.S., after implemented clinical pathways on hemodialysis arteriovenous fistula formation surgery, the treatment cost decreased from USD 10,000-20,000 to USD 4,000-5,000 per surgery, dramatically reduced the treatment cost. Through research on clinical pathways on acute appendicitis treatment, researcher Yan Hong found that drug expense decreased by 5.25%, examination fee decreased by 7.87%, surgery fee decreased by 12.3%, length of stay in hospital decreased from 8 days to 7 days after implementing clinical pathways on acute appendicitis treatment.

Innovate and reform treatment model, improve utilization rate of medical resources. Zhejiang Xiaoshan Hospital launched “four-day cured model” for certain diseases. It has achieved four days cured model by setting up clear admitting standard, standard inpatient processes and cooperation among supporting departments. This action help Xiaoshan Hospital improved bed turnover rate and utilization rate of medical resource. Wuhan Asia Heart Hospital improved surgery efficiency by standardizing surgery processes. And in Asia Heart a surgeon could conduct, on average, 4 operations per day, while a typical surgeon in public Class III hospital can only do 2.
Summary

From 1970 to 2012, under the government cost-control environment, U.S. HCA improved its profitability through a series of approaches: market repositioning, unified procurement to reduce cost, enhanced its negotiation & pricing power with commercial insurance, improving service quality to build strong brand and customer loyalty, optimize hospital operational processes, upgrade hospital IT systems to improve operational efficiency, and bind outstanding physicians through stock incentives. Today, HCA has become the largest listed healthcare group. Compared with $11.7 billion revenue and $120 million net profit in 1991, HCA achieved $33 billion revenue and $1.6 billion net profit in 2012, net profit margin increased from 1% to 4.8% (US non-for-profit hospitals’ profit margin before tax is typically only 3.65%).

"China could now leverage the lessons and experiences in developed countries. In 13th Five-year-plan period, public hospital reform will be a breaking point for China healthcare reform. And income reform is one of the most important initiatives in public hospitals reform. How to improve public hospital service quality and standard, innovate public hospital income model, while complying with healthcare reform policy, and thus improve financial situation, achieve sustainable development have become hot study topics.

Under the current situation, "increasing government subsidies and medical service income" fail to effectively compensate public hospitals for dramatically dropping pharmacy income, public medical institutions (especially large public hospitals) could review and plan "how to effectively leverage own brand and expert resources" to establish new service income source and service model. The gradual formation and implementation of "Health China" National strategy will provide huge development potential in "preventive care" and "rehabilitation care".

Roland Berger believes that, in the context of healthcare reform, public hospitals should innovate patient base and business model, enhance specialty capability, improve medical service quality, innovate patient service model to expand revenue, while reduce operational cost by optimizing procurement processes, streamlining the logistics management, improving bed turnover rate, and improving overall operational efficiency, and thus to improve financial situation and achieve sustainable development.

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FURTHER READING

CANCELLATION OF DRUG SALE SUBSIDIZATION FOR MEDICAL SERVICES AND SEPARATION OF DRUG SALES FROM HOSPITALS, 2015

“Cancellation of drug sale subsidization for medical services and separation of drug sales from hospitals,” China’s policy of separating drug sales from hospitals will finally be substantially and widely implemented over the course of its 13th Five Year Plan.

MAJOR CHALLENGES FOR THE 13TH FIVE YEAR PLAN FOR HEALTH CARE

“Opinions From The State Council on promoting the development of health services” suggested the development goal of health service industry: increasing market size to 8 trillion yuan before 2020. Provincial governments accordingly introduced their suggestions regarding development of health service industry, establishing their own development direction. In order to satisfy public’s diversified demands, market scale and service level of health sector have to be promoted by enlarging supplies, innovating business model, perfecting the system and improving professional level.
WE WELCOME YOUR QUESTIONS, COMMENTS AND SUGGESTIONS

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