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Basic Medical Insurance Impact on Medical Services in Guangdong Province

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Master in Business Administration

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ISCTE Business School - University Institute of Lisbon

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BUSINESS
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Department of Marketing, Strategy and Operations

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Acknowledgment

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Sumário

Os cuidados médicos têm sido uma preocupação principal da subsistência das pessoas nos países modernos, em particular na Província de Guangdong, que tem uma população residente de mais de 100 milhões de pessoas. O contexto histórico desta tese é a reforma do sistema médico da província de Guangdong de 2009, com um foco principal no efeito do sistema de seguro médico nos serviços médicos após a fusão dos dois tipos de seguro médico básico em 2018 num único seguro médico básico para residentes urbanos e rurais.

Esta tese começa por apresentar o sistema de seguro médico básico em Guangdong. Após a descrição da metodologia, examina os efeitos dos dois planos de seguro médico básico sobre uso dos serviços médicos. Inclui a utilização de serviços ambulatórios e de internamento, a satisfação do cliente, e as causas das necessidades médicas não satisfeitas. Terceiro, esta tese examina os efeitos de seguro médico a partir da perspectiva dos prestadores de serviço médico, prestando atenção particular às alterações no número de facilidades médicas designadas e no número dos seus empregados. Quarto, examina as funções de supervisão e controlo de despesas do seguro médico, bem como as funções de supervisão do sistema de serviço médico por níveis. Além disso, também examina o jogo dos interessados na implementação do seguro médico básico, a fim de fornecer como guia para melhorar a política.

O resultado demonstra que o seguro médico básico tem encorajado objectivamente a utilização dos serviços médicos enquanto baixa o custo daqueles que utilizam serviços médicos em Guangdong. A utilização do seguro está a ser monitorada. Embora a parte auto-paga dos custos médicos seja mantida em cerca de 25%, os custos médicos auto-pagos estão a aumentar como resultado do aumento dos custos médicos totais.

Palavras-chaves: seguro médico básico, serviço médico

Abstract

Medical care has long been the main concern of people's livelihood in modern countries, particularly in Guangdong Province, which has a resident population of more than 100 million. This dissertation's historical context is the Guangdong Province medical system reform of 2009, with a primary focus on the effect of the medical insurance system on medical services following the 2018 merger of the two types of basic medical insurance into a single basic medical insurance for urban and rural residents.

This dissertation begins by outlining the basic medical insurance system in Guangdong. Following a descriptive methodology, it examines the effects of two basic medical insurance plans on the use of medical services. This includes the use of outpatient and inpatient services, customer satisfaction, and the causes of unmet medical requirements. Third, this dissertation examines the effects of medical insurance from the perspective of medical service providers, paying particular attention to changes in the number of designated medical facilities and the number of their employees. Forth, it examines the supervision and expense control functions of medical insurance, as well as the oversight functions for the system of tiered medical service. In addition, it also examines the game of stakeholders in the implementation of basic medical insurance, in order to provide as a guide for bettering policy.

The result demonstrate that basic medical insurance has objectively encouraged the use of medical services while lowering the cost of those utilizing medical services in Guangdong. The use of insurance is being monitored. Although the self-paid component of medical costs is kept at around 25%, self-paid medical costs are nevertheless rising as a result of the rise in total medical costs.

Keywords: basic medical insurance, medical service

JEL Classification System:

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Chapter 1: Introduction

1.1 Introduction to the topic

The provision of medical care has always been critical to maintaining people's livelihoods and safeguarding their vital interests. The growth and effectiveness of medical services have a direct impact on the social cohesion and stability of the entire nation. In the previous 73 years, China's economy and society have seen numerous significant transformations. The Chinese government has implemented a number of medical reforms in an effort to adapt the medical system to the population and lower the cost of health care for the general public. Medical reform's central role is played by the reform of medical insurance, which acts as a direct consumer of medical services and a means of payment. Medical insurance reform is acting as the catalyst for a positive feedback loop in China's medical reform.（Yang Yansui, Li Chaofan，2019）

The Communist Party of China’s 19th National Congress noted in 2017 that enhancing people's health and wellbeing is inherently dependent upon equal and appropriate medical security. We need to improve the medical insurance and assistance systems for serious diseases, develop a comprehensive plan for the high-quality development of all types of medical insurance, and steadily raise the level of medical insurance in accordance with economic development and the availability of funds. The statutory medical insurance system also needs to be improved.

By the end of 2020, China has formed a basic medical insurance system covering over 95% of the whole population. (National healthcare security administration Statistics) The medical insurance system has initially achieved full coverage throughout the country, and the actual scope of security is approaching the direction of "universal medical insurance". According to the data from China Banking and Insurance Regulatory Commission, there were only 13% of the population who have commercial medical insurance in China, which indicates that most of people rely on basic medical insurance to reduce medical expenses. Therefore, in the reform and development of medical insurance system, improving the basic medical insurance system becomes a very important part.

The first province in China to reform the medical insurance system was Guangdong. Shenzhen took the initiative in implementing the pilot program for employee health insurance in 1992. A new rural cooperative medical insurance system was formed in 2002 after the province launched urban employee basic medical insurance in 2001. Guangdong implemented a medical insurance program for urban residents in 2004. In 2008, it took the lead in ensuring that the administrative region's medical insurance system was fully implemented. (Zhu Xiaofeng, Li Xiuting, 2019)

Guangdong was the first province in China to integrate basic health insurance for people of both urban and rural areas in 2012. Guangdong province has long been at the forefront of China's reform and development of social medical security systems, and the province's success in a number of reform pilot projects has encouraged reform of the nation's medical insurance system as a whole. The issue of "difficult and expensive medical care" also arises as a result of the medical marketization revolution. In 2005, the National Health Commission of the People's Republic of China conducted the Third National Health Service Survey, which found that 29.6% of patients who should be hospitalized do not choose to be hospitalized and that nearly half of Chinese people avoid hospitals when they are uncomfortable. One of the root reasons of this issue was the lack of medical resources and overpopulation of hospitals in large cities, as well as the narrow spectrum of diseases that medical insurance covered and the low reimbursement rate. Many rural residents are "afraid of seeing a doctor," and poverty brought on by illnesses frequently happens as a result of the absence of medical resources in rural regions and the high expense of medical care at secondary and tertiary hospitals in cities. Guangdong Province has repeatedly changed the medical system to solve this issue, reinforced the tiered medical service system, and directed tertiary hospitals in cities to support primary healthcare facilities. The route has benefitted rural populations and improved basic resources in those locations.

The cost and accessibility of medical services in society continue to draw criticism, despite the success of several pilot initiatives and reform efforts. Medical insurance may have a significant influence on medical care since it is the direct payer. Studying the influence of medical services on the implementation of medical insurance in Guangdong Province allows one to assess the

success of the adopted policies as well as identify their flaws and offer recommendations for improvement.

1.2Contextualization of the study

"Health risks" have been the subject of automated processes and related social conflicts and research. (Ulrich Beck, 1992) Health risks have always existed as societies have developed, despite variations in the social and environmental elements that affect health and give rise to insurance systems between countries.

The "Labor Sickness Insurance Act," established by Germany in 1883, gave birth to the initial social security system, which was the Bismarck's system. Sir William Beverage offered the framework for constructing a "welfare state" social security system in 1942. This allowed for the establishment of the NHS by the British government in 1948. The majority of nations in the world have built their medical security systems on these two systems, and China is no exception. Many years of historical evidence demonstrates the effectiveness of social medical insurance systems in lowering medical costs and advancing health fairness. The People's Republic of China (PRC) has an insurance system in place very early on. Almost at the same time as the PRC, labor insurance was developed to protect worker rights. In Guangdong Province's history, the social medical insurance system experienced two key periods of development that were nearly simultaneous with those of the entire nation. Free healthcare and a labor insurance system from the planned economy era were split apart by reform and opening up in the 1980s, evolving into a contemporary social insurance system.

Stage 1: from the 1950s until the 1980s, In the era of planned economy, there was free healthcare, workers insurance, and a rural cooperative medical care system. The growth of the country as a whole and the medical insurance system in Guangdong were coordinated.

The Chinese labor medical insurance system was legally formed in 1951 with the promulgation of the "Byelaw of Labor Insurance of People's Republic of China." In the years that followed, starting in 1952, the nation created a system of free medical care for national workers. These

two types of insurance were crucial for workers since they reimbursed all expenses and covered insurance expenditures, which was similar to "free medical care" in the welfare system. China developed a rigid urban-rural dual system, creating household registration barriers between urban and rural areas, under the background of a planned economy. In urban areas, workers were registered, whereas in rural regions, farmers were registered. Practically no transformation between the two was permitted. Therefore, the medical rights of workers in the city were protected by the labor medical insurance system and the free medical treatment system. The third type of insurance system, rural cooperative medical insurance, provided protection for farmers' rights.

During the time of the planned economy, the rural collective economic organization known as the Village collectives provided assistance for the rural cooperative medical service. Village collectives[1] gave "barefoot doctors"[2] a place to work, medical supplies, and salary. People in the village is responsible for covering a tiny portion of the cost of healthcare and prescription medicines. During this time, the rural cooperative medical insurance system was financed by withdrawing funds from the village collectives' public welfare account at the end of each year and transferring it to the cooperative medical institution as a special fund.

In the remote area of Shanxi Province, the first rural cooperative medical institution was founded in 1955. By 1976, 90% of the nation's rural residents had signed up for the rural cooperative medical insurance system. There were about 1.5 million "barefoot doctors" in the nation during its height in the 1970s. The rural cooperative medical insurance system played a significant role during this time, when Chinese farmers' average life expectancy increased from 34 years in the 1930s to 68 years in the late 1970s, according to the National Bureau of Statistics.

[1] Village collectives are economic organizations recognized by law in the era of China's planned economy. They own all the land within the scope of the village. People conduct production and operation activities under the organization of village collectives. After the reform and opening up, such organizations evolved into the present villagers' committees.

[2] Barefoot doctors are a group of informal medical workers who appeared in China in the 1960s and 1970s. After receiving short-term medical training, they were sent by the government to rural health centers to provide simple medical services, and popularize medical knowledge and infectious disease prevention knowledge, which improved the health condition of rural people.

Because most medical resources were concentrated in cities at this time, the national medical insurance system mostly covered urban employees, which led to a lack of social fairness between urban and rural medical security. This medical insurance system was replaced by a fairer social insurance system with the reform and opening up in the 1980s and the shift to a socialist market economy.

Stage 2: from 1980 to the present, medical service marketization and exploration of a more equitable medical insurance system.

The marketization of China's healthcare system is a result of reform and opening-up. Government spending on public health as a share of total health spending has been declining. The ratio was 36% in 1980 and declined to 16% in 1988, which is consistent with the residents' expenditures on personal health spending rapidly increasing. The amount of money spent by the government on public health was inadequate. Public hospitals that once only relied on subsidies for funding must now cover the majority of their expenses. Numerous rural health institutes suffered financial difficulties and were left unable to function independently.

The rural health network's rapid decline as a result had a negative impact on people's health security. However, the positive effect of this reform has helped China's social medical insurance system to advance medical equity to some extent. The first province in China to reform its medical insurance system was Guangdong. Shenzhen took the lead in implementing a program of medical insurance for urban workers in 1992. For workers in metropolitan areas, a comprehensive medical insurance program was implemented across the entire province in 2001. The new rural cooperative medical insurance program was established in 2002. The reform and development of social medical insurance system in Guangdong province has always been in the forefront of the country.

Although the new insurance created as a result of the reform of medical insurance has filled the gap left in the insurance market by the marketization of the industry, it has not yet been able to address many issues with medical services. For instance, "difficult and expensive to see a doctor" were the most often mentioned issues. Due to a lack of medical resources, the term

"difficulty in visiting a doctor" initially appeared in the 1980s. Other typical methods included expanding the number of hospital beds and opening hospitals in former state-owned factories to the public. These actions supported the public health system. Some were enacting supportive laws for private medical facilities and allowing retired physicians to continue practicing. Some were huge hospitals providing technology and expert training to small institutions. These methods could help with the issue of "difficulty in visiting a doctor", but given China's vast population, they haven't had the expected effect. In China, there were 0.47 nurses and 1.17 licensed (assistant) doctors for every 1000 residents in the 1980s. By 2009, there were 1.39 nurses and 1.75 licensed (assistant) doctors for every 1000 residents (National Health Commission of the People's Republic of China Statistics）

According to the third National Health Service Survey (2003), when people were in discomfort, 48.9% of them should visit a doctor, and 29.6% of them should be admitted to the hospital. However, they choose not to use these services. 56% of urban and 76% of rural patients who did not choose to be hospitalized for financial reasons. (GE Yanfeng, Wang Xiaoming, 2005)

In 2005, the Statistics Bureau of Guangdong Provincial conducted a survey on the medical services of residents in Zhanjiang, Shantou, Meizhou and Zhuhai. The results showed that the financial burden of medical consumption on families: 42.7% of respondents believed it to be a very severe burden, and 50.9% believed it to be a minor economic hardship. These statistics illustrated the widespread issue of "expensive medical treatment." In the meantime, from 2003 to 2011, national public hospitals' medical and health income climbed by around 20% annually. The expansion of medical insurance coverage, as noted by Qiu Yulin and Zhai Shaoguo (2016), is one of the factors contributing to the rapid rise in medical costs. Due to the system's faults, medical resources would be wasted excessively, and medical costs would rise quickly.

China's efforts to modernize its healthcare system now mostly unsuccessful (Ge Yanfeng , 2005). The marketization and commercialization of medicine that had started in April 1979 came to an end with this phrase. China has concentrated on economic development and created a socialist market economy since the reform and opening up. Simultaneously, several concepts

and methods of the economic system reform were just applied to the reform of the social sphere, leading to severe inconsistencies and issues including increased social security inequity and a polarization of the affluent and poor. The same is true of the medical system's reform, which has long been one of the top goals in the area of improving people's quality of life. Medical and health services are no longer equally accessible or equitable, which has had a negative impact on the growth of the medical insurance system.

At the beginning of 2005, the World Health Organization and the social development research department of the State Council's development research center collaborated to do research on "China's medical and health system reform." The study report made clear that certain present reform techniques had serious issues. Its negative implications were most apparent in a decrease in the equity of medical services and the macro efficiency of health investment. The medical and health systems' tendency for marketization and commercialization was wholly incorrect and went against the fundamental rule governing such endeavors. The system in China required further revision.

A new phase of medical and health system reform was launched nationally in January 2009 after the State Council approved the implementation plan for the recent main work of the reform (2009–2011).

Many of Guangdong's projects have been particularly inventive throughout the nation since the start of the new medical reform in 2009. For instance, Guangdong has looked into a number of effective and practical implementations to support the reform of the compensation system for employees, the development of a system of graded diagnosis and treatment, and the improvement of the primary medical institution service capacity.

Financial medical and health spending in Guangdong has expanded over the last ten years from 25.3 billion yuan to 140.7 billion yuan in 2019, and the per-capita financial subsidy for basic medical insurance has climbed from 90 to 490 yuan (Healthy County Media,2019). The primary medical institutions' facilities have been upgraded, medical staff have received higher pay,

primary institutions are better able to divert patients from secondary and tertiary hospitals, and patients now have easier access to care.

Guangdong is of the opinion that implementing a system of tiered medical services will be the key to resolving the issue of "difficult and expensive medical care," and that this would mostly entail building medical facilities at or below the county level. Guangdong Province has actively fostered the development of a small county-level medical community since 2019 and has now fully covered all the counties. In the province's 70 counties, 104 compact county-level medical communities have been created, and the medical community now operates under one management. Guangdong has innovatively used the county's hospitalization rate as one of the key indicators to evaluate the success of county-level medical reform. Gradually forming a tiered County-Town-Village medical services pattern based on functional positioning and division.

Another crucial exploration in Guangdong is the reform of medical insurance. The "total amount management and balance retention" medical insurance payment reform was tested in Shenzhen's Luohu hospital group in 2016. The goal of this strategy was to shift the medical community's emphasis from "focus on illness treatment" to "focus on resident health," encouraging them to pay attention to disease prevention. The Diagnosis-Intervention Packet (DIP) medical insurance payment mechanism reform was introduced in China in 2017, with Guangzhou leading the charge.

In 2020, a unified DIP Grouping Database was established in the whole province, and the number of diseases has reached 7981 (He Xuehua, 2022). More than 900 basic diseases that meet the functional positioning and service capacity of primary medical institutions have been formulated. In order to promote the treatment of common diseases, often occurring diseases, and chronic diseases to be treated in the primary medical institutions, the same disease type has been applied in different level medical institutions in the same scoring standard. In 2022, the number of diseases in the DIP Grouping Database has reached 8150. Further alleviated the

economic burden of hospitalized patients, maintained the stable operation of medical insurance funds, and promoted the development of medical institutions.

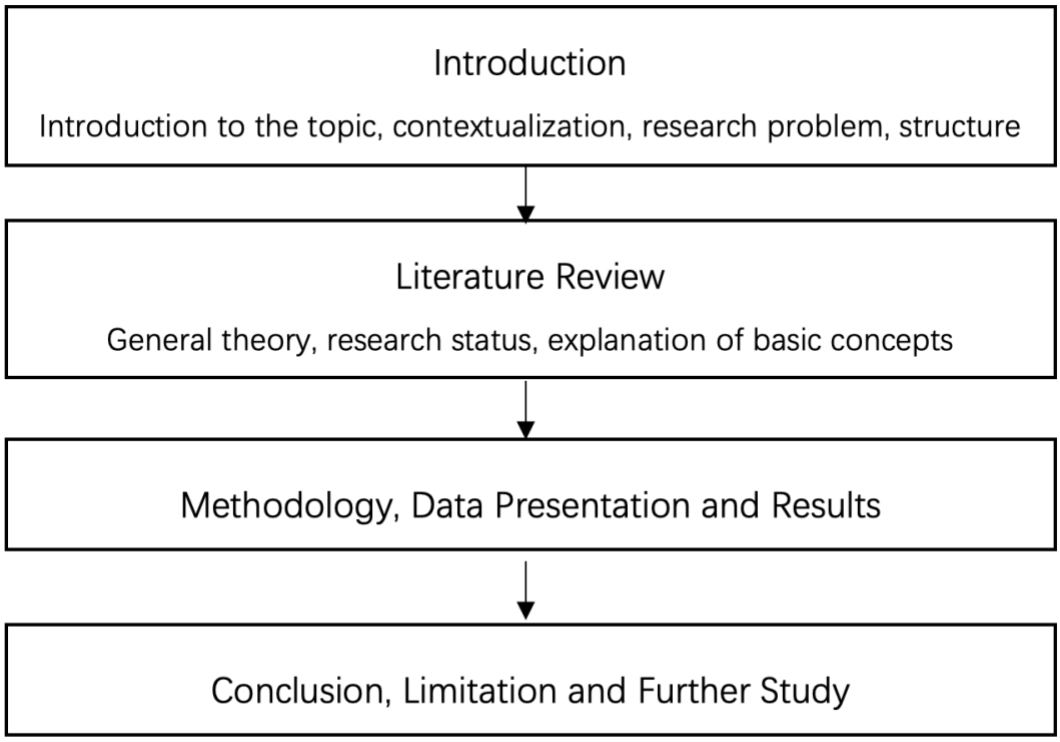
1.3 Research Objectives

Guangdong Province has put up a lot of effort since the new medical reform in 2009. Guangdong Province's finance medical and health spending increased at an average yearly growth rate of 17.01% from 25.3 billion yuan in 2009 to 195.2 billion yuan in 2021. (data from Health Commission of Guangdong Provincial) The number of medical facilities, physicians, and nurses has expanded significantly, as has the availability of medical resources.

This dissertation will examine the two crucial elements of medical insurance and medical service against the background of the new medical reform in order to comprehend the impacts the new medical reform has brought about. In particular, to determine if the Guangdong medical insurance system might enhance medical services and to investigate both its benefits and room for development.

Finally, this dissertation will offer some recommendations for the future reform of the Guangdong medical insurance system.

1.4 Structure of the dissertation



Chapter 2: Literature Review

2.1Medical insurance system in China

2.1.1 A multi-level medical insurance system

Medical insurance can be used both narrowly and broadly. In the strictest sense, insurance premiums are collected in order to cover financial losses brought on by illness risk and to safeguard people's health through formal legal regulations. The insured will be compensated for the medical costs incurred throughout the duration of the medical treatment through the insurance fund formed on this basis. In its broad definition, health insurance provides coverage for both direct and indirect financial losses, as well as support services like disease prevention and health maintenance. This dissertation studies a medical insurance system that belongs to the more restrictive definition of medical insurance.

The four levels below make up China's multi-tiered healthcare security system, according to Xu Feiqiong (2020).

The first level is comprised of the government-responsible legal medical security system, which also includes the basic health insurance system and the government-run medical aid program. According to the law, the system relies on employer, employee, and governmental financial contributions and operates under the principle of mutual aid. Despite the government's intention for basic medical insurance, which is voluntary, to be used by everyone, the current participation rate remains at above 95%.

The second level is that businesses and other employers put up supplemental health insurance under the direction of policies. It is based on the combined effort of the employing organizations and their staff. It can improve employee welfare and is comparatively fair and equal to the incentive function.

The third level is commercial health insurance, which is established by a contract between a person and an insurance company. It follows the free-market principles of commerce and

attempts to satisfy growing public demand for disease insurance by providing a larger variety of compensation.

The goal of the fourth level, which is social charity and medical mutual aid, is to assist underprivileged groups in overcoming the problem of disease. It is based on social contribution and mutual aid.

Basic medical insurance at the first level of China's multi-level medical insurance system aims to offer universal basic medical insurance and cover the entire population, making up the majority of China's social medical insurance system.

2.1.2 Evolution of Basic medical insurance

China has established a basic medical insurance system that consists of "three basic medical insurances," including basic medical insurance for urban residents, basic medical insurance for employees in urban areas, and the new rural cooperative medical insurance, following years of medical marketization reform since the 1980s. All provinces started integrating the new rural cooperative medical insurance and the basic medical insurance for urban residents into a single basic medical insurance system for urban and rural residents in January 2016, after the State Council's Opinions on the Integration of the Basic Medical Insurance System for Urban and Rural Residents were published.

Urban employee basic medical insurance system. This type of insurance is mandated by the government, the insurance cost is divided equally by employers and workers, the implemented right, and the insurance concept of duty equivalence. In accordance with the society insurance fund and individual accounts formed by this type of system, the insured is required to designate a particular primary, secondary, and tertiary hospital and pharmacy in the covered city to carry out treatment and pay accounts. It is important to note that this insurance program includes retired employees, who are exempt from paying insurance premiums after retirement. This system was developed from free healthcare and labor insurance, but it allowed employees of both government and state-owned firms as well as private businesses to participate. It was a

worthwhile attempt to address the market's development demands after the reform and opening up.

New Rural Cooperative Medical System. The rural cooperative medical system that operated against the background of a planned economy also vanished with the collapse of collective economy in China's rural areas brought on by reform and opening up. In 2002, the PRC's National Health Commission created the Outline for the Development of Primary Health Care in rural China (2001-2010). The same year, Guangdong took the lead in implementing a new program of cooperative rural medical care that was funded by government grants and backed by both village collectives and private individuals. In Guangdong Province, a new rural cooperative medical insurance system that basically covers the whole rural population was launched in 2006. The new rural cooperative medical care system encompasses 123 counties and 20,173 administrative villages, accounting for 96.08% of the total population. The insured population is around 30.48 million, representing for 61% of the province's registered rural population. At this point, nearly all of Guangdong province's rural residents may take advantage of the new rural cooperative medical services.

Basic medical insurance for urban residents. The Guangdong provincial government committed in 2007 to furthering social fairness by providing each person with basic health insurance. In the same year, Guangdong conducted trials of basic medical insurance for urban residents in six cities. These trials covered additional urban residents, excluding those who had previously signed up for the urban employee basic medical insurance, such as those who had been laid off and temporary migrant workers in rural regions. The majority of this insurance expense is covered by residents (or families), and government spending lowers the personal insurance premium. In order to better serve students' medical requirements, this insurance coverage was subsequently expanded in 2009 to include students attending universities and vocational schools in the cities of Guangdong Province.

Basic medical insurance system for urban and rural residents. In response to the needs of shifting citizen identities brought on by the growing integration of urban and rural regions, the

city of Shunde, Guangdong province, developed a basic medical insurance system for urban and rural residents in 2004. Guangdong's basic medical insurance program for residents of both urban and rural areas was formally unified in 2018 and created as a single system. All participants in the new rural cooperative medical system as well as the basic medical insurance for urban residents are covered by this system. Together with the urban employee basic medical insurance system, they already offered coverage for the entire province, regardless of a person's position, as long as they met the requirements for obtaining a full participation in the insurance. The anti-risk capacity of the fund pool has been improved, and the situation of repeated insurance participation and subsidies in the past has been avoided as a result of the implementation of unified financing, insurance benefits, medical insurance catalog, and fund management measures for urban and rural residents. It encourages medical insurance system financial equity.

2.2 Medical service

According to Wang Kui (2020), medical services are those that are given by qualified health technicians in line with accepted standards of practice for the diagnosis and treatment of illnesses. Inpatient services, outpatient services, and emergency services might all be subdivided within it. In accordance with the legislation on basic medical and health care and health promotion, which was implemented in June 2020, "the medical and health service system is a continuous and coordinated system formed of primary medical institutions, hospitals, and professional public health institutions, spanning urban and rural regions, with complementary roles."

The medical information controlled by both sides is asymmetrical as a result of the professional and intangible aspects of medical services. According to the asymmetric information theory, which was first forward in the 1970s by G. Akerlof, M. Spence, and J.E. Stigliz, sellers with more knowledge can profit in the market by providing trustworthy information to purchasers with little information. The seller or buyer who lacks certain information will attempt to obtain

it from the other. In the market, those who are knowledgeable often have an advantage over those who are less knowledgeable. Medical services, where the information between supply and demand is particularly asymmetrical, can also be subject to this theory. In order to generate large profits, service providers may encourage clients to utilize their services excessively, which would result in inflated prices.

According to Li Ying (2019), the consumption of medical services by inhabitants under certain environmental circumstances is referred to as medical service use. It consists of inpatient and outpatient services, health screenings, medical services, and other multi-level service processes. The combination of supply and demand produces the creation of medical services. (Sun Ni, 2018) Existing study findings indicate that personal characteristics such as age, gender, education level, and health condition, as well as external environmental determinants of medical service supply, influence medical care consumption.

According to Hu Xiaobo (2019), there are two categories of medical service use: outpatient service use and inpatient service use. The two-week rate of patient visits, the number of visits, and the year total of visits were used to evaluate the utilization of outpatient services. Hospitalization rate, bed usage rate, turnover rate, per capita hospitalization cost, and length of stay are the primary measures of inpatient care consumption.

2.3 An overview of Stakeholder theory

Stakeholder theory was initially developed in 1963 by Stanford Research Center (SRI Company). An individual or entity with shares in or other relevant interests in a company or commercial activity is what it originally meant. R. Edward Freeman introduced the "Stakeholder theory" and described it as "the individuals who may influence the achievement of an organization's goals or are affected by the process of achieving the goals" in Strategic Management: A Stakeholder Approach (1984). Stakeholder theory was first used as an enterprise management methodology in the domains of management and economics. In order to address different issues with governmental decision-making and policy formulation in public

administration, modern scholars have also extended this theory to the field of public service management.

Stakeholder theory and research methodologies were first introduced to the field of health by Blair and Whitehead in 1988, and they subsequently found widespread use in the administration of healthcare institutions and the evaluation of health policy.

The idea of stakeholders was initially introduced to the field of public policy assessment by E Vedung in 1997. He initially discussed the policy evaluation model from the viewpoint of stakeholders in the context of public policy and program assessment.

This dissertation will apply the stakeholder theory to explore the role of stakeholders in the process of determining the impact of the basic medical insurance system on medical services.

2.4 Research status of the impact of medical insurance on medical service

2.4.1 Impact of medical insurance on medical service utilization

Currently, the majority of research on the effect of medical insurance on medical services now concentrate on the effect of medical service utilization. The behavioral model of medical service utilization, which Andersen R.M. established in 1968 as the framework for analysis, was used to research the variables influencing medical services. The Andersen Behavior Model of Health Service Utilization tries to describe and quantify equal access to health care as well as explain why families utilize them. The model demonstrates that predisposing, enabling, and necessity are the three key elements that affect a person's decision to use health services. Social traits (education, occupation, ethnicity, social connections, and culture), health views (attitudes, values, and people's familiarity with the healthcare system), and demographic features (age, gender) are all predisposing factors. A person's community's health resources, household income, and access to medical care are all examples of enabling factors. The primary driver of a person's usage of health services is need, which includes both the subjective need for health examination and the person's cognitive requirement for care and treatment. According to the

Andersen Behavior Model, these three factors may be used to improve health service utilization behavior and change the health service system.

Based on this theory, there are two points of view in the study on how medical insurance affects the use of medical services. By decreasing the threshold and total cost of medical care, medical insurance on the one hand makes medical care more widely available. This encourages the prudent utilization of medical services, ultimately advancing public health (Yip et al, 2012). However, because medical insurance covers a portion of the costs, moral hazard can easily arise, resulting in the overuse of medical services and the waste of medical resources (Huang Feng, Gan Li, 2010)

In terms of health care accessibility, Zhong(2011) investigated the effect of medical insurance settlement method on medical service consumption and discovered that real-time medical insurance settlement saves patients' time and money, which promotes the convenience of medical service utilization.

Zhou Qin and Liu Guoen (2015) found that under the medical insurance advance payment system[3], individuals have large credit and budget constraints and cannot obtain the optimal utilization of medical services, and their actual utilization of medical services is lower than that of real-time settlement[4] groups. People with low financial resources are constrained in their demand for medical services by the medical insurance advance payment system.

Among other studies, Liu Guoen et al. (2011) found that medical insurance not only increases the likelihood that elderly patients will receive immediate medical attention, but also significantly decreases the cost of care for their families. However, it has no appreciable effect on patients' decisions regarding medical treatment. Zhang Li and Tong Xing (2014) discovered

[3] Medical insurance advance payment appears in the patient to go to a doctor in the field commonly (below the circumstance of emergency and be in hospital), if did not protect ground to put on record in ginseng, need individual advance payment. On the other hand, some medical expenses need to be paid by individuals before hospitalization or surgery, and the final settlement is made according to the reimbursement rate of medical insurance after discharge.

[4] Real-time settlement means that the details of medical expenses incurred during the period when an individual uses medical insurance will be sent to the medical insurance center in real time. The center can immediately grasp the information of the insured in the hospital medication and examination, determine the scope and amount of reimbursement. When the insured is discharged from the hospital, the policy would settle immediately.

that medical insurance significantly affects the probability that elderly rural residents will be admitted to the hospital. Even for patients with serious illnesses, Baker et al. (2001) discovered that insured individuals were more likely than uninsured patients to accept the treatment that their doctors suggested.

2.4.2 The game between medical insurance and medical service provider

Although the majority of the study to date has concentrated on the effect on the utilization of medical services, the impact of medical insurance on medical services actually extends beyond this. Medical insurance, which is used as a third-party payment method, continuously engages in informational asymmetry games with medical service providers and shapes their behavior by implementing cost-cutting measures. From this point of view, medical insurance has a restricting influence on how people use medical services.

Asymmetric knowledge between buyers and sellers, according to David M. Cutler and Richard J. Zeckhauser (1999), can easily cause moral hazard and increase transaction costs. Public health should be prioritized in the design of the medical insurance system. Pauly (2001) outlined how changing the way medical insurance is paid for and taking administrative action can limit the use of excessive medical procedures and regulate out-of-control medical costs. J.B. Christianson and D. Conrad (2011) argue that by playing the game with medical facilities as the agency of patients, medical insurance can reduce the waste of medical resources caused by information asymmetry.

By establishing a minimum and maximum level of reimbursement, the medical insurance payment mechanism can control how medical service consumers behave. A cost-sharing mechanism was suggested by Newhouse(1977) to manage the behavior of the demander. According to Barley David (2005), selecting proper payment mechanisms, such as establishing the threshold and top for reimbursement of medical insurance, and payment proportion, could be used to control the behavior of medical service providers.

The threshold is the amount that medical insurance will begin to pay as a starting payment to cover the insured's medical expenses for treating illnesses. Under the threshold, all costs must be paid by the insured, and any costs in excess may be reimbursed by the medical insurance fund proportionately. Depending on the type of insurance and the level of the hospital, the top reimbursement line and the percentage of health insurance vary.

The maximum amount of reimbursement that the insured can receive from the medical insurance in a year is known as the top reimbursement limit of the medical insurance fund. Through the serious illness health insurance system, the insured's medical expenses that exceed the medical insurance reimbursement cap may be covered. The reimbursement percentage ranges from 50% to 70%, and there is no threshold on medical costs for outpatient services, according to Guangdong Province's public medical insurance policy. In terms of inpatient services, the higher the hospital's level, the higher the threshold, and the lower the reimbursement percentage.

Studies in the literature nowadays frequently concentrate on the effect of health insurance on the use of medical services. These studies were narrowed by age, gender, and identity or by geography. Few studies can actually examine many effects of medical insurance on medical services at once, including the monitoring of medical institutions and the effects of a tiered medical service system. Medical services might be more significantly impacted by these changes. Guangdong Province has a developed economy, more permanent residents than 100 million as of 2009, and significant medical changes that have essentially led the country. The effect of medical insurance on medical care in Guangdong is yet unknown. This research is important in light of China's ambition to make people's lives better, close the wealth gap, and achieve common prosperity by 2050.

Chapter 3: Methodology

This dissertation employs theoretical and empirical research methodologies, as well as quantitative research methods. Theoretical study involves the evolution of China's basic medical insurance system, stakeholder theory, information asymmetry theory, and the theoretical research status of medical insurance on medical service utilization. The empirical study contains a descriptive analysis of data from Guangdong Province.

In terms of the theoretical approach, this dissertation studies the literature on the influencing elements of medical services and the evolution of medical insurance in academic databases such as CNKI, Wanfang Data, and PubMed, recognizes the research gaps in this area, establishes the research objectives, and develops the theoretical and literature review of this dissertation.

Regarding the descriptive method, this research examines the correlation and graphic trend of the assessment indicators of medical services impacted by medical insurance.

The comparative analysis approach is also used in this dissertation. This type of comparison is utilized in a variety of data analyses, including the trend analysis of data from different years, the difference analysis of two insurances, and the policy orientation analysis of the shifting distribution of designated hospitals at various levels.

Only secondary data would be gathered for this dissertation from external sources, including the Guangdong Provincial Health Commission, academic journals, books, and other relevant publications, scientific papers, and dissertations.

Chapter 4 Data presentation and results

4.1 A brief introduction to the operation of basic medical insurance

4.1.1 Participation of two basic medical insurance

In Guangdong Province, the basic medical insurance participation rate has been constant at above 95% since 2019. This demonstrates that, since the new rural cooperative medical insurance system and the basic medical insurance system for urban residents were integrated into the basic medical insurance system for urban and rural residents in Guangdong in 2018, urban employee basic medical insurance and the basic medical insurance system for urban and rural residents have almost covered all of those who should be insured. The number of persons who participated in both of the basic medical insurances increased from 2019 to 2021. Employee participation in medical insurance climbed at a 4.63% annual pace, while urban and rural residents participation increased at a 0.9% yearly rate.

	Participation of urban employee basic medical insurance	Participation of basic medical insurance system for urban and rural residents	Total participation
2019	43.56	64.02	107.58
2020	45.47	64.12	109.59
2021	47.69	65.17	112.86

Table 1: Basic medical insurance participation in Guangdong Province（unit: million people）

(Data source: Healthcare Security Administration of Guangdong Province)

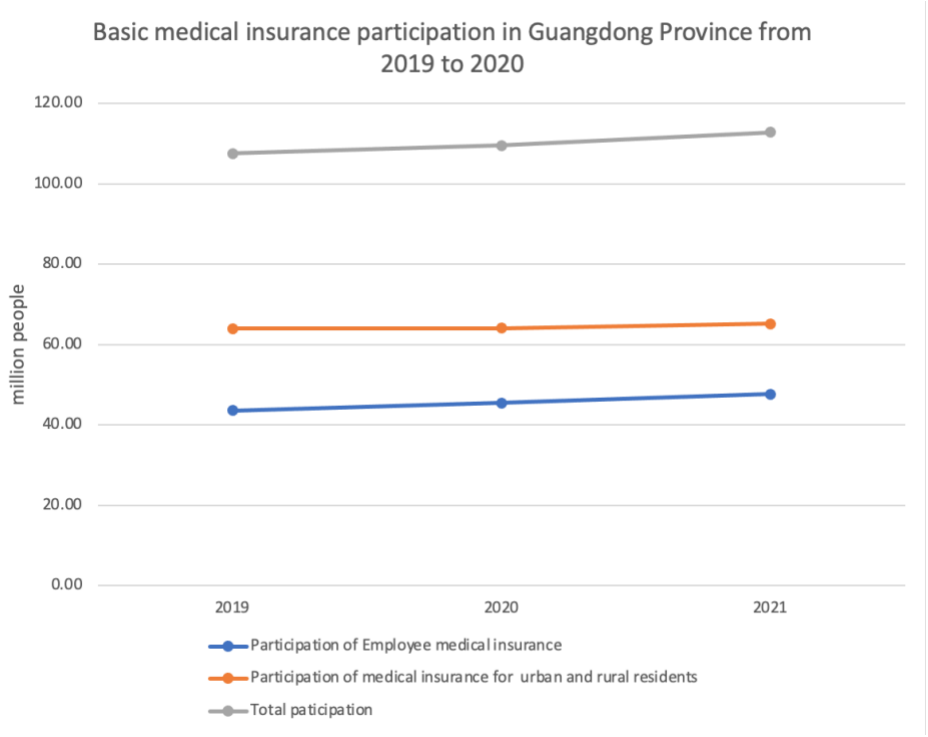


Figure 1: Basic medical insurance participation in Guangdong Province

4.1.2 Income and expenditure of employee medical insurance fund

The income of the employee medical insurance fund increased from 2019 to 2021, with an increasingly high growth rate. The employee medical insurance fund's expenditure is rising simultaneously, albeit at a slower rate than before. Every year, there is a decline in the medical insurance fund's current balance.

	Income	Growth rate (%)	Expenditure	Growth rate (%)	Current balance
2019	82.69	0	61.73	0	20.96
2020	93.91	13.57%	85.28	38.15%	8.63
2021	110.64	17.81%	102.92	20.68%	7.72

Table 2: Income and expenditure of employee medical insurance fund（unit: billion yuan）

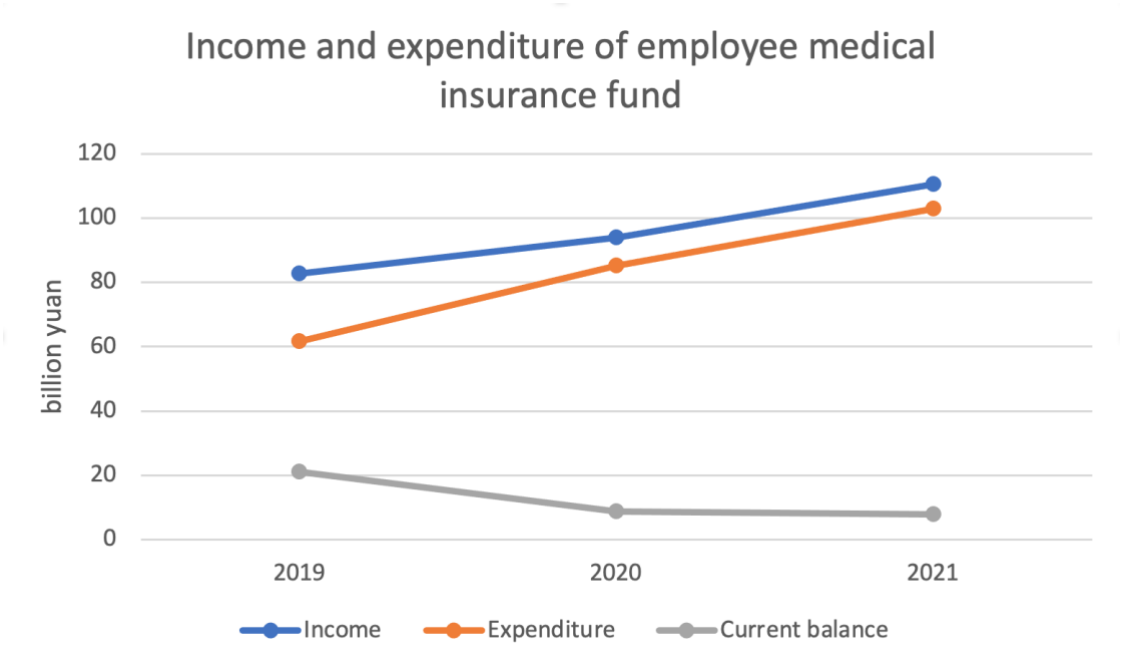


Figure 2: Income and expenditure of employee medical insurance fund
(Data source: Healthcare Security Administration of Guangdong Province)

4.1.3 Income and expenditure of basic medical insurance for urban and rural residents' fund

Urban and rural residents' basic medical insurance income increased from 2019 to 2021, while the rate of income growth itself was dropping. A rising tendency in both the spending and the expenditure growth rate was evident throughout the same period of time. Every year, the current balance rises.

	Income	Growth rate (%)	Expenditure	Growth rate (%)	Current balance
2019	44.75	0	43.82	0	0.93
2020	55.68	24.42%	48.88	11.55%	6.8
2021	63.35	13.78%	56.37	15.32%	6.98

Table 3: Income and expenditure of medical insurance for urban and rural residents' fund （unit: billion yuan）

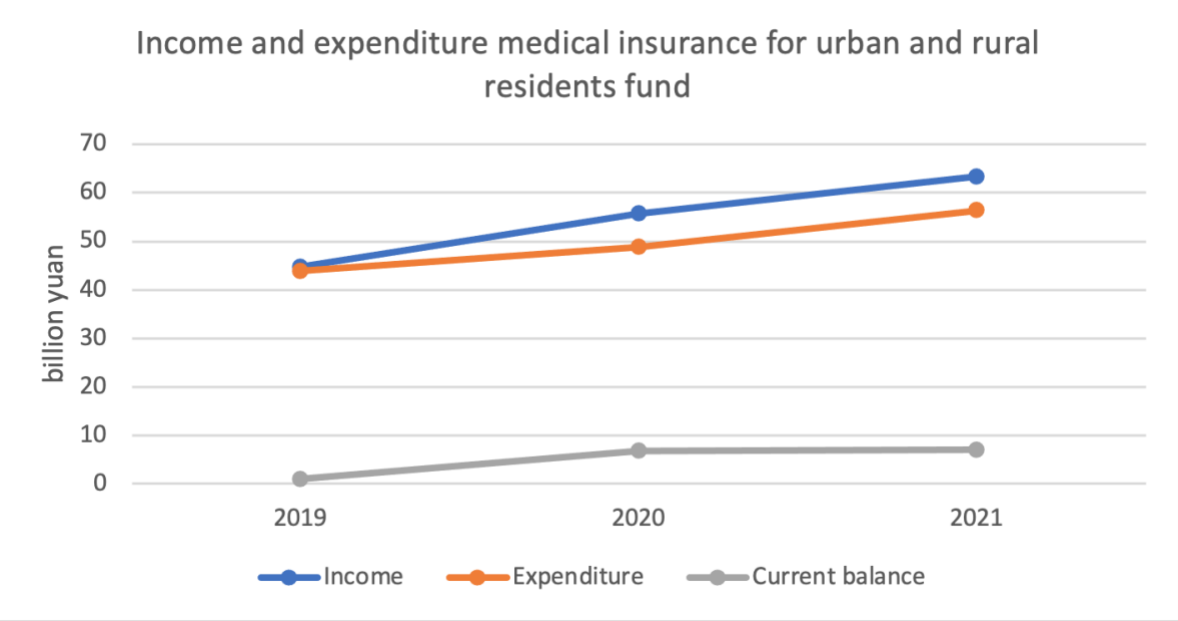


Figure 3: Income and expenditure of medical insurance for urban and rural residents' fund (Data source: Healthcare Security Administration of Guangdong Province)

4.2 Comparison of the effect of two kinds of basic medical insurance on medical service utilization in Guangdong Province

4.2.1 Comparison of outpatient service utilization in 2020

In terms of the utilization of outpatient services, the prevalence rate and outpatient visit rate of people participating in employee medical insurance were 34.6% and 25.0%, respectively, slightly higher than those of urban and rural residents. The prevalence rate and outpatient visit rate of those who did not participate in medical insurance were significantly lower than those who participated in any kind of insurance, especially the outpatient visit rate, which was close to half of those who participated in employee medical insurance.

Luo Weixiang (2019) investigated the status and variables impacting Chinese minors. The findings revealed that income, education level, if he had suffered from chronic conditions in the previous half year, and whether he had resided in a hospital in the previous year were the most influential factors. These criteria are strongly adversely linked with non-participation,

demonstrating that poor socioeconomic position and unfavorable selection are impediments to universal health insurance implementation. The low prevalence rate of uninsured individuals may be attributed to their low economic capacity and lack of medical understanding, which causes them not to seek medical treatment when they are feeling uncomfortable, resulting in the disparities in prevalence rate.

	People participating in employee medical insurance	People participating in medical insurance for urban and rural residents	Uninsured people
Prevalence rate	34.6%	31.3%	19.0%
Outpatient rate	25.0%	24.2%	13.4%

Table 4: Data on the utilization of outpatient services by different medical Insurances
（Data source: China Health Statistics Yearbook (2020)）

4.2.2 Comparison of hospitalization service utilization in 2020

In terms of inpatient treatment use, it is obvious that those with medical insurance have a much higher hospitalization rate than people without medical insurance. Medical insurance helps patients use hospitalized services more effectively.

	People participating in employee medical insurance	People participating in medical insurance for urban and rural residents	Uninsured people
Hospitalization rates	12.0%	10.6%	7.0%

Table 5: Data on the utilization of hospitalization services by different medical Insurance
（Data source: China Health Statistics Yearbook (2020)）

4.2.3 Service satisfaction

In 2020, overall satisfaction with medical services among insured patients was high, with satisfaction with outpatient care reaching 71.5%, which was higher than satisfaction with inpatient services.

The top three reasons for dissatisfaction with outpatient and inpatient care in Guangdong, according to survey data, were medical expenditures (44.4%), technical level (24.2%), and service attitude (7.9%).

	Satisfied	Average	Not satisfied
Outpatient services	71.5%	26.8%	1.7%
Inpatient services	62.7%	33.7%	3.6%

Table 6: Satisfaction of insured patients with outpatient and inpatient services
(Data source: The Sixth Chinese National Health Service Survey(2020))

4.2.4 The unmet medical needs and causes of insured patients

In terms of insured patients, the proportion of patients who were unwell and needed to visit a doctor but did not use outpatient services was 13.1%, a 9% reduction from the previous statistics (2013).

The major explanation, according to the cause investigation, was that the self-perceived disease was modest (63.9%). Other explanations included being unable to afford medical expenses (8.5%), a lack of practical solutions (7.3%), and difficulty getting an appointment with a doctor (4.7%).

The percentage of inpatients who should have been hospitalized but did not receive inpatient services was 12.6%, down 4.3% from the prior data (2013).

The results of the research revealed that the three primary causes were that the individuals felt hospitalization was not essential (38.8%), that they could not afford the costs (29.4%), and that they did not have enough time (9.7%).

4.3 Evaluation of the impact on medical institutions

4.3.1 Number of designated medical institutions of medical insurance[5]

Medical service providers are also affected by the effect of medical insurance on medical services. They are connected via the designated medical institution, the medical insurance agency. The number of designated community health centers grew from 2566 to 2736 between 2016 and 2021, a 6.63% increase. With a growth rate of 34.7%, the number of designated secondary hospitals climbed from 464 to 625. The number of designated tertiary hospitals rose from 162 to 254, representing a 56.79% increase. Township hospitals are the only ones with fewer beds at present time, mostly as a result of withdrawal and merger due to policy changes and administrative restructuring.

The expenditure of the medical insurance fund is mainly through the medical services provided by the designated medical institutions to the insured patients. It is clear from the rise in the total number of medical facilities that have been designated in the last six years that the current Guangdong basic medical insurance policy is advantageous to the operation of medical institutions. A rise in designated medical insurance institutions, on the other hand, encourages people to use their basic health coverage to the fullest, which increases the effectiveness of using medical insurance funds.

[5] Designated medical insurance hospitals refer to the list of hospitals with social insurance medical qualifications within the jurisdiction announced by the social security department. According to the published list, the insured selects the hospital for medical treatment, and goes to the designated hospital for medical treatment with the medical insurance card. Medical expenses can be reimbursed in a high proportion, otherwise medical expenses would be reimbursed in a low percentage.
The medical system is divided into three levels. Each insured person can choose 4 designated medical insurance hospitals, including 1 compulsory primary hospital.

	Township hospital	Community Health Center	Secondary hospital	Tertiary Hospital
2016	1201	2566	464	162
2017	1202	2543	452	171
2018	1193	2602	487	205
2019	1186	2625	516	217
2020	1175	2679	560	231
2021	1173	2736	625	254

Table 7: Number of designated medical institutions of medical insurance

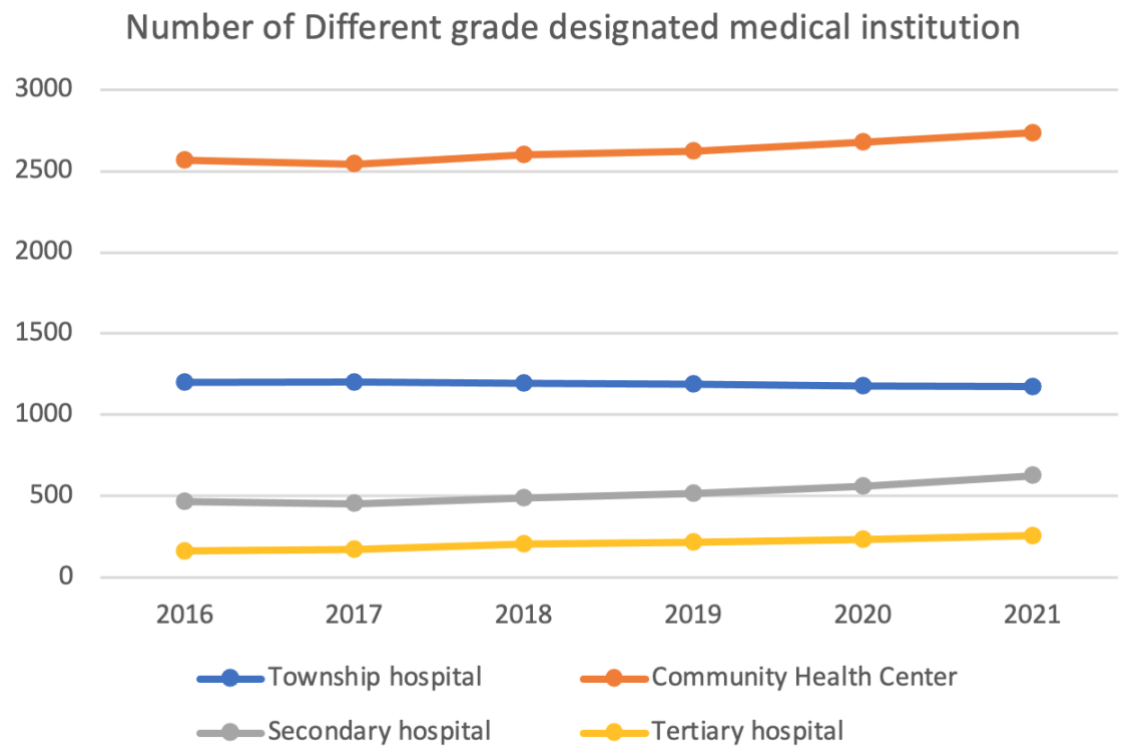


Figure 4: Number of Different grades designated medical institution

(Data source: Data sorting of Health Commission of Guangdong Provincial)

4.3.2 Changes in the number of employees in medical institutions

In terms of the annual total income of hospitals and health institutions in Guangdong Province, the financial income is lower than 20% and the medical service income is higher than 70%. Therefore, the primary source of hospital operational expenditures, wages, medications, and medical supplies comes from the medical service income. Employees in hospital are mainly divided into health technicians and managers. Health technicians include practicing (Assistant) doctors and registered nurses. According to the data shown in Figure 5, the number of practicing (Assistant) doctors and registered nurses has been rising from 2016 to 2021. Additionally, the number of registered nurses has always been higher than that of practicing (Assistant) doctors, and the annual average growth rate of the number of registered nurses is higher. In the past six years, the number of health service providers in health institutions has been increasing. According to the statistics of the resident population, there were 2.53 practicing (Assistant) doctors and 3.17 registered nurses per 1000 people in the province in 2021, an increase of 0.10 and 0.20 respectively over the previous year.

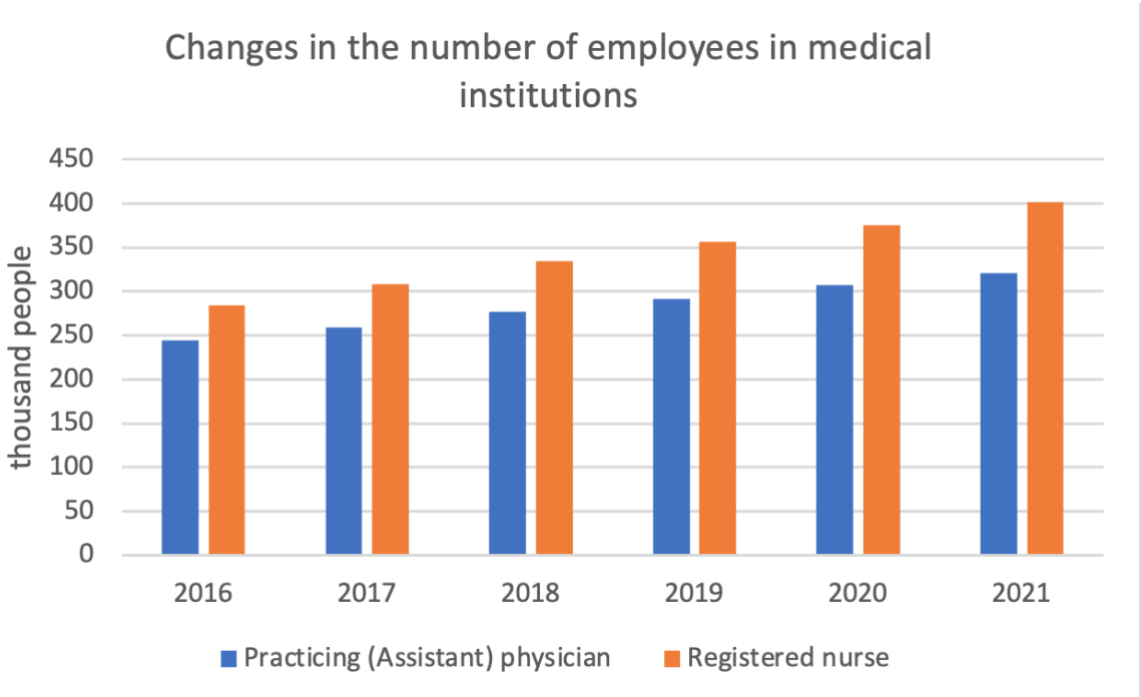


Figure 5: Changes in the number of employees in medical institutions
(Data source: Data sorting of Health Commission of Guangdong Provincial)

4.4 Functional orientation assessment of the role of medical insurance in medical services

4.4.1 Guiding role of the system of tiered medical service

The State Council of China released guiding opinions on the construction of a tiered medical service system in 2015, outlining the implementation process and highlighting the importance of establishing a tiered medical service system for promoting the equalization of basic medical and health services. On the one hand, it enables patients to get high-quality medical care in primary healthcare facilities and allows tertiary hospitals to properly distribute high-quality medical resources to them. To some extent, it can prevent overcrowding in tertiary institutions' medical services and reduce the phenomena of "difficulty in seeing a doctor." On the other hand, the leverage of medical insurance is primarily expressed in the establishment of various reimbursement thresholds and reimbursement ratios for different levels of medical institutions in order to standardize the medical behavior of the insured, guide patients to seek medical services rationally, and accomplish the objective of rational usage of medical resources and a tiered medical service system. (Zhao Yun, 2014).

This dissertation examines the relationship between the hospitalization rate and the employee basic medical insurance reimbursement percentage in 20 prefecture-level cities in the Guangdong Province for the year 2021. $R = 0.0628$, $P = 0.037$, Spearman correlation coefficient. The proportion of medical insurance reimbursement rate is thought to be positively correlated with the hospitalization rate at the test level of 0.05. The correlation analysis between the percentage of medical insurance reimbursement and the hospitalization rate of urban and rural people in Guangdong found no statistically significant difference ($P > 0.05$).

Figure 6 shows that the overall number of visits and hospitalizations decreases as the hospital's level rises. More than 60% of patients choose to get hospital care at primary healthcare centers, and more than 77% select these facilities for doctor visits. When comparing the distribution of visits with the distribution of hospitalizations in provincial and municipal hospitals, the distribution of hospitalizations is higher than that of outpatient visits. The distribution of visits

in primary medical facilities was higher than that of hospitalizations.

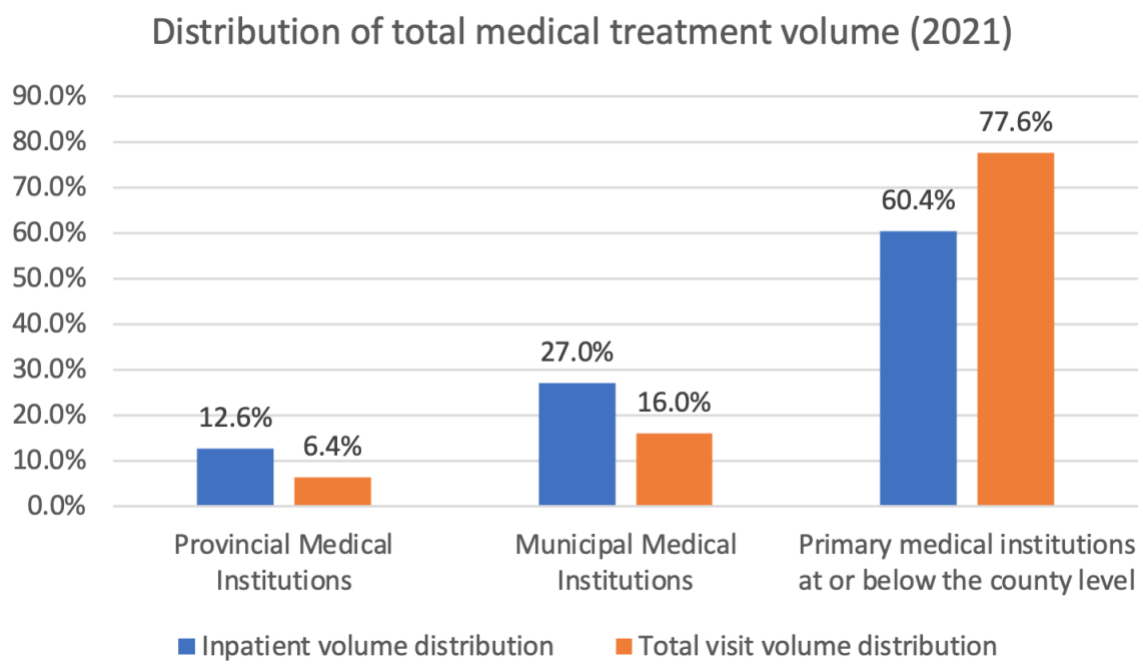


Figure 6: Distribution of total medical treatment volume (2021)
(Data from Health Commission of Guangdong Provincial: Briefing on medical and health resources and services)

4.4.2 Evaluation of supervision effect

Medical insurance's primary responsibility in the oversight of medical services is to monitor and regulate the appropriateness of the medical services that medical insurance agencies (designated medical institutions) give to medical service providers. The financial subsidies for medical institutions are severely inadequate, which encourages the profit-driven conduct of medical service providers due to the knowledge asymmetry between medical service providers and demanders and China's incomplete medical and health system. Unmoral behaviors, such as conducting excessive medical care, continue to occur.

In order to ensure the appropriate use of the medical insurance funds and protect the essential interests of the great majority of covered individuals, the medical insurance, which has the authority to acquire medical services on behalf of the insured, is accountable for supervising the medical institutions. Medical insurance frequently uses agreement supervision, daily

inspection, intelligent monitoring, and other methods to monitor medical facilities. In order to start the work of monitoring medical insurance and providing medical services, the National Healthcare Security Administration issued the interim measures for reporting and rewarding fraudulent medical security fund activities in 2018 and the Notice on the supervision of medical security fund in 2019.

Guangdong Province has implemented the following steps to regulate medical insurance funds and medical conduct. First, develop an appropriate wage structure, regulate the outpatient service process, the conduct of medical technicians during diagnosis and treatment, encourage reasonable prescription of medications, and unlink physicians' revenue from that of therapy and diagnostic services. Second, specify the medical technology service items to be offered, improve clinical management of high-risk, high-cost medical technology, and encourage mutual recognition of inspection findings across various medical institutions. Third, improve the standard of fine management while strengthening the budget review and cost accounting processes within medical institutions. Fourth, encourage the reform of medical insurance payment procedures: boost the medical insurance funds' budget for income and expenditure. Promote composite payment strategies including payment by disease type, payment by hospitalization day, and total amount prepayment under the management of the total amount, and progressively cutting down on payment by medical examination items. Guangdong will fully exploit the different forms of medical insurance in order to control, direct, monitor, and limit medical service behaviors and costs. (Health Commission of Guangdong Province)

Guangdong Province also developed anti-insurance fraud campaigns. In 2018, the province examined 3344 designated hospitals and 7104 designated pharmacies, representing for 55% and 30% of the total number of authorized facilities, respectively. A total of 38.9289 million yuan in funds were recovered, including 33.2717 million yuan in medical insurance payments, and 220175 instances of medical service breaches were implicated.

The focus of medical insurance supervision on medical services is currently shifting primarily from post-supervision to pre-process and in-process supervision as a result of the application

of big data in the field of medical insurance. Set thresholds and automatically evaluate a lot of medical insurance settlement data using Internet technologies. Determine inappropriate diagnostic and treatment information, such as excessive examination, excessive medicine prescribing, and repeated charges, and promptly feed it back to the medical insurance management center to ensure that the medical insurance is monitoring the whole process of providing medical services.

4.4.3 Evaluation of the effect on medical expenditure control

The coverage rate and compensation of medical insurance are always improving as the medical system develops. Medical insurance fund spending provides a considerable quantity of cash for medical institutions, and medical insurance fund expenditure accounts for 70% of medical institution income. Medical insurance, medical institutions, and the insured are all in a competitive position since they are the direct purchasers of medical services, and they all have their own interests to consider. The State Council's (2017) guiding opinions on further deepening the reform of fundamental medical insurance payment methods state that the medical insurance management department must be effective in keeping costs under control in order to ensure the cautious use of scarce medical insurance funds and provide the greatest possible service to participants. Medical service providers are urged to actively control fees through the reform of medical insurance payment methods. A diversified and composite payment method is gradually established on the basis of total prepayment, encouraging designated medical institutions to actively control fees and guaranteeing the wise use of medical insurance funds.

Figure 7 shows that from 2016 to 2020, the total health expenditure and the total health expenditure per capita have continued to increase. After the proportion of total health expenditure to GDP declined in 2017, the growth rate accelerated from 2018 to 2020. In the past two years, with the increase of health expenses, the effect on medical expenditure control was not satisfactory.

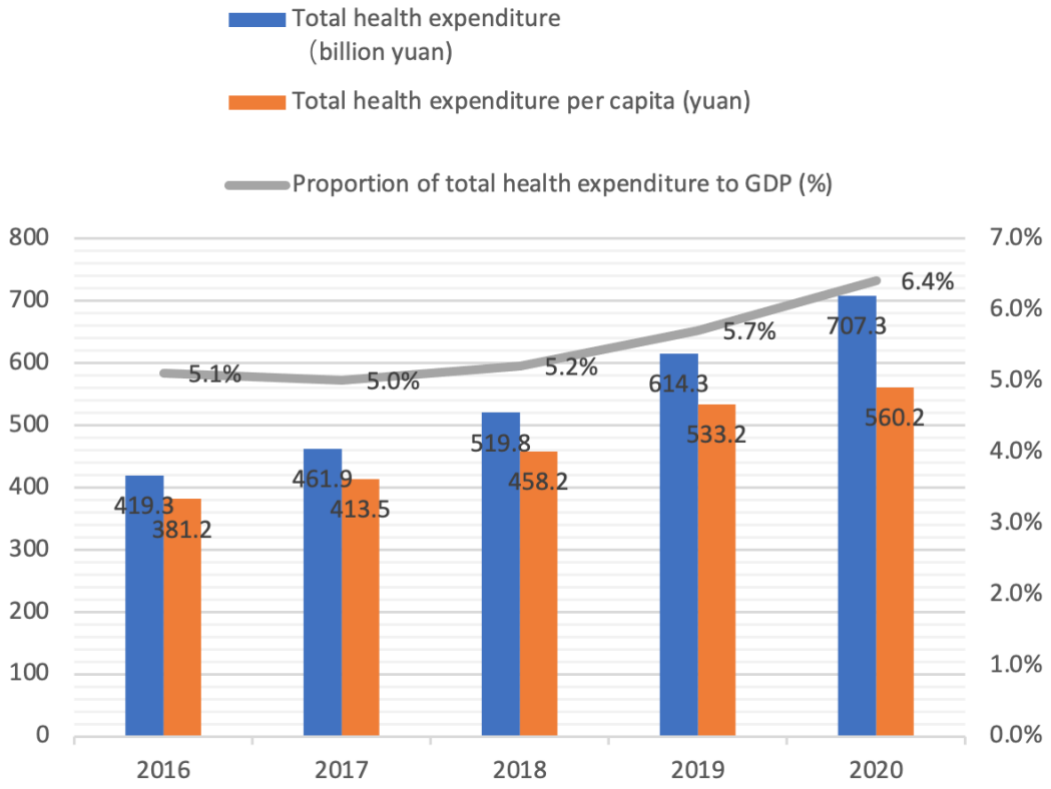


Figure 7:medical expenditure

Guangdong Province conducted a news conference in early 2022 to interpret "The 14th five-year plan for the development of health care in Guangdong Province." According to statistics, in the previous nine years, Guangdong Province's per capita total medical expenses have climbed by 202%, but the percentage of personal medical expenses has declined year after year. This shows that even while the total amount of funding for all health expenses is rising, the administration of medical services and the basic medical insurance system are always being improved, reducing the overall burden of people paying for medical care.

	2016	2017	2018	2019
Proportion of personal medical expenses in total health expenditure per capita	24.5%	26.2%	25.7%	25.5%

Table 8: Proportion of personal medical expenses in total health expenditure per capita

(Data from Health Commission of Guangdong Provincial: Briefing on medical and health resources and services)

4.5 The analysis of stakeholders in the process of basic medical insurance affecting medical services

The implementation of basic medical insurance involves a wide variety of stakeholders, each of whom can have a distinct impact on medical services and who have various interests in demands put on medical services from a variety of viewpoints. In order to prevent policy implementation stumbling blocks produced by unfulfilled stakeholders, we must pay attention to the various demands of stakeholders during the policy implementation process.

According to R. Edward Freeman's definition of stakeholders, they are the people who have the ability to influence how an organization's goals are realized or who are impacted by that process. In this dissertation, the phrase "stakeholders" refers to people or organizations that have an impact on or are impacted by the functioning and growth of public hospitals.

Zhao Chunxiang (2014) used the Delphi method with a 60% expert support rate as the selection criterion to identify 23 stakeholders in public hospitals and categorize them into 8 groups: employees, social organizations, third-party payment institutions, competitors, customers, partners, or competitors.

Guo Yuli (2015) classified the stakeholders into three categories: core stakeholders (the government, healthcare institutions, and insurance companies), dormant stakeholders (employees, patients and their families, and social organizations), and marginal stakeholders (medicine, equipment and material suppliers).

This dissertation adopts the stakeholders with the highest correlation for the research, which include medical institutions (public hospitals), government, patients, and employees.

Stakeholder	Role definition	Demands
Medical institutions	Providers and managers of medical services, executors of medical policies.	Well operation, increase health resources, economic and social benefits.
Government	Medical insurance policy maker and supervisor.	Improve the management and efficiency of medical services, and reduce the cost of obtaining them.
Patients	Demanders, consumers and evaluators of medical services.	High quality and convenience of medical service with low medical expenses.
Employees	The implementer of medical services.	Protection of labor rights and interests, improvement of salaries and professional titles, reduction of work and pressures.

Table 9: Roles and demands of stakeholders

Conflicts and games between numerous pairs of stakeholders may alter the eventual outcomes of the research while it is being implemented.

The first is a game between medical institutions and medical insurance department, with one of the causes being an unreasonable payment structure. The Guangdong Province is now using a complete amount prepayment method. The medical facilities should deal with the extra expenses associated with medical insurance reimbursement. The medical insurance department will specifically refer to the amount of medical insurance expenditures actually incurred by the medical institution in the previous year to establish the total prepayment amount of medical insurance reimbursable in the current year. This has caused the hospital's overall payment amount to rise every year, making the lack of money from medical insurance worse.

The second is the competition between medical institutions and the government. The government defines the medical care supplied by public hospitals as "public welfare" and prohibits its provision for financial gain. Public hospitals, on the other hand, have their independent economic benefits. Under market pressure, it is vital to upgrade equipment, hire professionals, and maintain a competitive advantage. However, the government has offered insufficient financial support in this area, and has launched medical reform to limit the extent of medical insurance usage and regulate medical spending, as well as monitored whether medical behavior is compliant. Their interaction will certainly have an impact on the outcomes of medical insurance implementation.

Additionally, hospital employees must control patient medical insurance reimbursement since patients frequently may pay for medical bills that exceed their own insurance coverage, which places additional financial burden on doctors. While patients require doctors to spend more time explaining and comforting them, medical institutions need doctors to improve the efficiency of visits. There will undoubtedly be a stakeholder in the game of stakeholders whose interests are not met, which will have an impact on the subjective judgment of the implementation of the medical insurance policy.

Chapter 5 Conclusion and recommendation

Health is inextricably related to human survival and quality of life. The fast advancement of modern medical technology has resulted in not only higher levels of medical technology, but also increased medical costs. There are still issues with high medical costs and inconvenient access to medical care under the management of the PRC government's basic medical insurance system. This dissertation focuses on the Guangdong Province and assesses the effect of medical insurance on medical services from a variety of perspectives, including the influence of medical insurance on medical service utilization, orientation, and medical institutions.

The results indicate that the rate of patients seeking medical care has increased as a result of basic medical insurance participation. Additionally, it encourages the general public to have a better understanding of their own physical health conditions and visit a doctor as soon as they experience any discomfort. This increases the effectiveness of medical service utilization and supports population health. However, due to high medical costs, many insured individuals still decide against receiving either outpatient or inpatient care.

In terms of the analysis of medical service providers, medical insurance appears to have a beneficial influence. The year-on-year rise in the total number of designated medical institutions, practicing (Assistant) physicians, and registered nurses demonstrates that medical insurance has supported in the growth of this industry.

In a broader sense, the medical insurance system improves the personnel diversion function of the tiered medical service system and promotes medical service utilization efficiency by establishing different reimbursement thresholds, top amounts, and reimbursement ratios for hospitals at various levels. Despite the fact that overall medical expenditures and their percentage of GDP have been growing year after year, the intervention of basic medical insurance has stabilized the proportion of medical expenses paid by insured individuals at around 25%, contributing to expense control. (China Health Statistics Yearbook (2020))

In Guangdong, basic medical insurance has generally decreased the cost of individuals utilizing medical services and has actively encouraged their usage. The behavior of those who are involved in medical services is restricted, allowing for better management of insurance use. However, we also observe that the high expense of healthcare remains a major obstacle for many people from using it. People continue to delay seeking medical care due to the rising cost of medical care overall and the medical insurance's insufficient payment options. In this regard, Guangdong Province should first keep pushing for changes in medical insurance payment procedures while also finding new ways to lower consumers' out-of-pocket medical expenditures. Second, Guangdong Province should encourage hospital management reform, cut down on wasteful spending on healthcare, lessen the performance-based salary of employees, encourage resource sharing among "medical associations," and lower overall healthcare costs. Third, the government has to create a system of interests, rights, and obligations as well as a more rational medical system while taking into account all the demands of stakeholders.

Chapter 6 Limitations and further study

This dissertation, like other studies, has some limitations that must be addressed.

The first limitation of this dissertation is that it studies from a macro perspective. Because of the vast number of individuals being studied, it is extremely difficult to collect samples in the form of questionnaires on a large scale. As a result, the data utilized in this work are secondary data from recent years, and the indicators of the study are limited due to limited access to statistical data.

The second limitation is that this research focuses on Guangdong's basic medical insurance system following the combination of the new rural cooperative medical insurance system and basic medical insurance for urban residents. Since the two forms of insurance were integrated in 2018, the majority of study data intelligence has been confined to data after 2018, resulting in an inadequate data time range.

More study data and a more extensive analysis are needed for future research on this issue. Another research aspect that might be included is the evolution of medical insurance funds and their influence on medical services in the context of population aging.

Reference

Baker & Sudano & Albert & Borawski & Dor. (2001). Lack of health insurance and decline in overall health in late middle age. *New England Journal of Medicine*, 345(15), 1106-1112.

Central Committee of the Communist Party of China. (2021). *Communique of the 19th congress of the Communist Party of China*, Beijing: Xinhua News Agency.

Christianson & Conrad. (2011). Provider Payment and Incentives, in Glied & Smith. (eds.) , *The Oxford Handbook of Health Economics*, Oxford: Oxford University Press, 624 - 648.

Cutler & Zeckhauser. (1999). The Anatomy of Health Insurance. *NBER Working Paper*, 01, 563-643.

Bardey & Lesur. (2005). Optimal health insurance contract: is a deductible useful. *Economics Letters*, 87(3):313-317.

Freeman.（2006）. *Strategic management: stakeholder approach*. Wang & Liang translated. Shanghai: Shanghai Translation Publishing House.

Ge & Wang. (2005). Reflections and suggestions on the construction of China's medical service system and related reforms. *China Development Review.*

Guo & Wu & Han & Shi & Chen. (2015). Stakeholder analysis of public hospital reform. *Soft science of health*, 09, 533-536.

He. (2022, August 27). Contribute Guangdong's plan and wisdom to the national medical reform. Guangzhou Daily. Retrieved from https://www.gzdaily.cn/amucsite/web/index.html#/detail/1913791

Health Commission of Guangdong Provincial. (2020). *Briefing on medical and health resources and services*. Retrieved from Health Commission of Guangdong Province Website, http://wsjkw.gd.gov.cn/zwgk_tjxx/

Healthy county media (2019, November 19). Ten Years of New Medical Reform in Guangdong

Province: Achievements of "Breaking Through". Retrieved from https://www.cn-healthcare.com/articlewm/20191119/content-1076082.html?appfrom=jkj

Hu. (2019). Study on the inequality of medical service utilization under the urban and rural medical insurance co-ordination. [Master dissertation, Zhejiang University of Finance and economics]. Retrieved from https://www.cnki.net/

Huang & Gan. (2010). Excessive demand or effective demand—— Empirical Analysis on health and medical insurance of urban elderly. *Economic research journal*, 06, 105-119.

Li & Zhu. (2022, August 26). Guangdong project and wisdom for the national medical reform. *Nanfang Daily*. p. 10.

Li. (2019). Study on the utilization of medical services for the mobile elderly. [Master dissertation, Hebei University of economics and trade]. Retrieved from https://www.cnki.net/

Li & Zhao. (2014). Equity evaluation of basic medical insurance for urban workers from the perspective of institutional change. *Social Science of Beijing*, 07, 31-37.

Liu & Cai & Li. (2001). The reality of medical security and medical service demand for the elderly in China Evidence analysis. *Economic research journal*, 3, 95-107.

Luo. (2019). The Medically Uninsured Chinese Adults: Trends and Determinants. *Chinese Social Security Review*, 01, 102-118.

National Health Commission of the People's Republic of China. (2020). *China Health Statistics Yearbook*. Beijing: Peking union medical college press.

National Health Commission of the People's Republic of China. (2020). *The Sixth Chinese National Health Service Survey*. Beijing: People's medical publishing house.

Newhouse & Joseph. (1977). Medical-care expenditure: a cross-national survey. *The Journal of Human Resources*, 12(1), 115-125.

Pauly. (2001). Health insurance and market failure in the medical economy. *Econ Literature*, 24(6):629-675.

Qiu & Zhai. (2016). The realization path of medical insurance playing a fundamental role in medical reform. *China Health Insurance*, 2016 , 12, 36-38.

Sun. (2018). Analysis on the utilization of medical and health services and the influencing factors in the inflow area of the Floating Elderly. [Master dissertation, Zhejiang University]. Retrieved from https://www.cnki.net/

Tang. (2005, August 22). Surveys show that 90% of the public are dissatisfied with changes in the health care system over the past 10 years. *China Youth Daily*. P. 5.

The State Council. (2017). *The guiding opinions on further deepening the reform of basic medical insurance payment mode*, Beijing: The State Council.

Wang. (2020). Introduction to hospital. *Press of University of Science and Technology of China (Hefei)*, 52-61.

Wang & Wang & Wang. (2012). Interest consideration in public policy -- Analysis Based on stakeholder theory. *Journal of management*, 25 (4), 5.

Wang & Wen & Ren. (2017). Andersen's Health Service Utilization Behavioral Model and Its Evolution. *Chinese Health Economics*, 36(1), 15-17.

Xu. (2020). The Construction of China's Multi-tiered Healthcare Security System: Status Quo and Policy Option. *Journal of Renmin University of China*, 34(5), 15-24.

Yang & Li. (2019, June 17). Medical insurance payment reform leads China's medical reform into a virtuous circle. *China Labor Security News*. P. 6.

Yip & Hsaio & Chen & Hu & Maand & Maynard. (2012). Early Appraisal of China's Huge and Complex Health-care Reforms. *The Lancet*, 379(9818), 833-842.

Zhang & Tong. (2014). Research on the utilization of inpatient services and its influencing factors of rural elderly residents -- Empirical Analysis Based on CHARLS. *Social Sciences in Nanjing*, 4, 67-73.

Zhang. (1992). A review of the early history of cooperative medical care. *Chinese Health*

Economics, 06, 21-23.

Zhao. (2014). A Study on the Ranking and Classification of Stakeholders in Public Hospitals. [Master dissertation, Qingdao University]. Retrieved from https://www.cnki.net/

Zhao. (2019). Research on the mechanism of medical insurance purchase and medical service after integration. *Chinese hospitals*,23 (11), 61-64.

Zheng. (2008). From the state unit security system to the state social security system -- China's social security reform and institutional changes in the past 30 years. *Social Security Studies (Beijing)*, 02, 21-30.

Zhong. (2011). Effect of Patient reimbursement Method on Healthcare Utilization: Evidence from China. *Health Economics*, 20, 1312-1329.

Zhou & Liu. (2015). The burden of "universal medical insurance" and "advance payment" -- the impact of medical insurance advance payment system on the utilization of residents' medical services. *Insurance Studies*, 07, 106- 119.

Zhu & Li. (2019). Over the past 70 years, Guangdong has made great efforts to improve the basic medical service capacity. Retrieved from https://news.southcn.com/node_95c7df7506/5a146c580f.shtml