

# Research on the Current Situation, Problems and Countermeasures of "Diagnosis Intervention Pack"--Take the Pilot Reform in Guangdong Province as an Example

Lifen Yang<sup>1</sup>, Xusheng Zhang<sup>2,a,\*</sup>

<sup>1</sup>Labor and Social Security, Guangdong Medical University, Dongguan, Guangdong, China

<sup>2</sup>Humanity and Management College, Guangdong Medical University, Dongguan, Guangdong, China

<sup>a</sup>zhangxusheng@gdmu.edu.cn

\*Corresponding author

**Abstract:** As a new payment method, Diagnosis Intervention Pack (DIP), originated from Huai' an, Jiangsu Province, effectively alleviates the problem of rapid growth of local medical expenses. Based on the experience of Guangdong Province, DIP pilot reform was carried out in all cities of Guangdong Province. In order to study the current situation and effect of implementing the policy of "diagnosis intervention packet" in Guangdong Province, and analyze the feasibility and applicability of DIP, this paper summarizes the experience of pilot cities in Guangdong Province by means of comparative analysis. It is found that the implementation of DIP in Guangdong Province has achieved initial results in cost control and cost reduction, sustained operation of medical insurance fund and promotion of clinical coding and quality management of medical records, But at the same time, there are also some problems, such as the policy management is not unified, the information supporting technology and the quality management of medical records, the lack of professional personnel team and other aspects are not perfect. Based on this, this paper puts forward some relevant suggestions, such as strengthening the management measures of hospitals at all levels, expanding the professional talent team, and improving the level of information technology, so as to provide theoretical and practical reference for other pilot reform areas in China.

**Keywords:** Diagnosis Intervention Pack, Medical insurance, Payment method

## 1. Introduction

### 1.1 Research Background and Significance

The reform of medical insurance payment mode has been regarded as an important means to control the substantial increase of medical expenses. In recent years, China has been exploring the ways of medical insurance payment reform. In 2016, " key tasks for deepening the reform of medical and health care system in 2016 " proposed that all parts of the country should speed up the reform of medical insurance payment methods, In 2020, we will promote the combination of multiple payment methods including capitation, bed day payment, disease type payment, total prepayment and diagnosis intervention packet ( DIP ), The " total number of pilot cities" and the notice on the total number of pilot cities and the number of medical insurance points in pilot cities have been printed and distributed, It is proposed that the pilot cities should be completed by the end of 2021 to realize the goal of DIP payment. DIP is a payment method with Chinese characteristics explored on the basis of China's national conditions. It is of great significance to control the excessive growth of medical insurance expenses and reduce the unreasonable expenditure of medical insurance service fees. It not only helps to relieve the pressure of medical insurance fund operation and reduce the medical expenses of patients, also helps to improve the service efficiency of health and medical institutions. As a big province of DIP pilot reform, Guangdong province began to try out DIP payment in the province at the end of 2017. This paper studies the situation and effect of payment by disease score in Guangdong province, and analyzes the characteristics, achievements and shortcomings of the mode of DIP, it is of great significance to provide the reform of medical insurance payment mode.

## 1.2 Literature Review

In 2003, Huai ' an City carried out the settlement according to the disease score, that is, diagnosis intervention packet (DIP), resulting in a new payment method which belongs to China ' s localization, and domestic scholars also carried out corresponding research on it. In terms of operation effect , DIP can be summarized as medical insurance department is responsible for "fixed work points", hospital side is responsible for earned work points ", in general , it guides medical institutions to standardize diagnosis and treatment , actively reduces cost control costs , and effectively reduces " big prescription" and "big examination" and other bad behaviors , which makes medical insurance related departments focus on Supervision [1](Jintang Li et al ,2018). At the same time, the implementation of " diagnosis intervention packet " in Guangzhou city shows that: the designated medical institutions can adapt to the development of the situation, continuously strengthen the implementation of policies, improve the cost management mechanism, improve the technical level of professionals in the hospital, effectively reduce the average length of stay of patients, and gradually control the growth of the total medical expenses per hospitalization. The total amount control of the whole city has reached the target, reducing the medical economic burden of the insured[ 2](Min Chen,2020). In terms of internal promotion mechanism, hospitals at all levels should take the initiative to adapt to the reform of payment method of DIP, accurately grasp the policy, pay attention to " disease type " management, and pay attention to the value, cost and quality of disease [3](Jifang Chen et al ,2022). To promote the smooth implementation of DIP , the cooperation and linkage among multiple departments in the hospital are needed first , the original profit - making operation concept of the hospital should be changed , the awareness of active cost control should be strengthened , and the hospital self - management awareness and credit mechanism should be established by simplifying the clinical pathway[4]( Lu Lu ,2020); Secondly , as the main body of DIP pilot reform , hospitals need to attach great importance to and actively participate in this work , especially in the initial stage , they should actively participate in the preparatory work of reform in pilot areas , actively open doors and windows and go out , introduce excellent technology , learn from the experience and lessons from the pilot and pilot areas , and refine their own programs , The hospital should also set up the leading person in charge , with the leader in charge , and the leading group of relevant departments such as medical treatment , medical record, medical insurance , finance and transportation management to form a clear organizational system, promote the reform of DIP as a whole, and ensure the smooth implementation of DIP pilot work from the system and organizational structure [5](Yi Huang ,2021). In the next step of the development of DIP, we still need to make clear the work direction of payment according to disease type, do a good job in the reference range of score based payment on disease type in grass - roots disease, improve the management level of medical insurance information technology, continuously deepen reform and constantly improve the payment system[6](Wei Wei,2020). Due to the different development levels, the scores of disease types in different cities are obviously different. Therefore, it is necessary to formulate the disease score database more scientifically and improve the supervision of hospital medical records and data[7](Huan Wang,2019). However, with the continuous promotion of local pilot projects in practice and the continuous improvement of theoretical system, a more scientific, systematic and long - term medical insurance payment method will be formed in the future[8](Baorong Yu,2021).

## 2. Overview of DIP

### 2.1 Meaning of DIP

DIP is a grouping method based on big data diagnosis intervention packet, According to the notice on comprehensively carrying out the diagnosis intervention packet of basic medical insurance ( Yue Ren she Han [2017] No .3457) issued by the Department of human resources and social security of Guangdong Province and the health and Family Planning commission , it is defined that DIP refers to the total amount of hospitalization medical expenses paid by the pooling fund of basic medical insurance , According to the proportion relationship between the average cost of each disease and a fixed value (or benchmark disease ) , determine the corresponding disease score , determine the hospital coefficient according to the service capacity and level of medical institutions , and the payment method of hospitalization expenses settlement by the medical insurance department at the end of the year according to the total score obtained by the hospital and the coefficient agreement rules .

## **2.2 Features and Advantages of DIP**

According to the diagnosis intervention packet (DIP), it adapts to the fund management principle of "determining expenditure by revenue, balancing revenue and expenditure, and having a slight balance". The main key point of DIP is the word "score". The disease type corresponds to the score value, not to the cost directly. The settlement price of each disease type is displayed by assigning the score to different diseases, which objectively reflects the level and amount of medical consumables cost. The unit price of the score is determined according to the total budget of the overall fund and the total score of each medical institution. If the total score is high, the unit price of the score is also high. If the total score is low, the unit price of the score is low, which is not directly related to the total budget of the fund, but also does not conflict with the fund management principles, so as to facilitate the smooth operation of the medical insurance fund; According to the severity of the disease and the amount of consumables needed to calculate the score of the disease, the refinement is scientific and fair, which effectively reduces the risk of medical institutions' diagnosis upgrading and high score, standardizes the service behavior of medical institutions, and reduces the social phenomenon of expensive and difficult medical treatment, so that the masses dare to seek medical treatment.

In operation, DIP can be used in medical fund monitoring, medical insurance payment, hospital management and other fields. Using the background advantages of big data to establish a complete payment and supervision system for medical insurance fund, find out the common characteristics of the mode of "disease diagnosis + treatment", and accurately classify the data related to medical records. At the same time, the precise positioning of each disease and treatment combination is formed in the sample cases and medical record data within a specific region, so as to objectively reflect the disease severity, the number of resource consumption levels, treatment complexity and clinical behavior norms[9](Guihong Tan et al,2013).

## **3. Analysis of DIP Implementation in Guangdong Province**

### **3.1 Analysis of DIP Implementation Policy in Guangdong Province**

Guangdong Province has formulated the "three-step" stage in combination with its own development, in the first step, Zhongshan, Qingyuan, Shantou and other cities were selected as the pilot of DIP reform. In order to speed up the use of medical insurance funds in other cities in 2020, a number of policies have been issued in Guangdong Province. Among them, medical insurance office (2020) No.45, No.49, No.50, No.51, No.54, No.60 and other documents put forward that Guangdong Province will initially realize the pilot goal of multiple mixed payment mode based on the score payment of disease type in two years. However, considering the overall development status of Guangdong Province and the planning of the future direction of medical insurance reform, Guangdong Province has set up a pilot project of multiple mixed payment mode based on the score payment of disease type. Guangdong Province first announced the list of pilot cities such as Guangzhou, Shenzhen, Zhuhai, Shantou and Heyuan, and implemented the supervision of DIP based on big data through the development of DIP technical specifications and disease type database, mainly through the mode training, information technology guidance, monitoring and evaluation of pilot cities. In order to make Diagnosis Related Groups (DRG), DIP and other medical insurance payment methods first applied in pilot reform areas, corresponding measures should be made for high set score, excessive diagnosis and treatment, punching points and other behaviors that may occur in the implementation process. In 2021, Guangdong Province's notice on the three-year action plan for DRG / DIP payment reform (medical insurance Fa [2021] No.48) puts forward the goal of "four full coverage" of "DRG / DIP payment mode covering all areas under overall planning, qualified medical institutions, and full coverage of diseases and medical insurance fund" in the next three years. At the same time, we should speed up the reform process of DIP in pilot cities such as Guangzhou and Shenzhen, and constantly consolidate the reform achievements; At present, DIP reform has entered the dynamic development stage on the original basis, and Guangdong Province is still in the process of continuous promotion.

### **3.2 Analysis of Several City Modes of DIP Implementation in Guangdong Province**

Zhongshan City is the first city in Guangdong Province to implement DIP, which plays a leading role in other pilot cities in Guangdong Province; Shenzhen and Guangzhou have integrated the regional characteristics into the DIP reform, accumulated their own different experience, and the effect of policy reform is obvious, it has a positive demonstration role in further promoting the reform of payment by

disease score in Guangdong Province.

### 3.2.1 Zhongshan Mode

Zhongshan, as a pilot city with early start of pilot reform, has started to implement DIP since 2010. In terms of operation mode, it first implemented in hospitals at all levels in accordance with the principle of "high score for major and serious diseases, low score for minor and light diseases", and preliminarily determine the weight coefficient according to the comprehensive service capacity of local hospitals, combined with the hospital coefficient and the total score obtained after the hospital treatment, the amount of fund can be determined (see Figure 1). After the implementation, 4654 kinds of diseases have been produced, and the growth rate of medical expenses has rapidly decreased from 26.8% to 6%. After effectively controlling the excessive growth of medical expenses, improving the management level of medical institutions and promoting the healthy competition among medical institutions, Zhongshan City has successively promoted the reform of pilot projects, and set up the incentive and punishment mechanism with dynamic adjustment of grade coefficient to promote the rational use of medical insurance funds. The benign operation mode of Zhongshan City has actively promoted other cities. For example, Qingyuan city implemented the DIP in 2014, resulting in 4725 kinds of diseases; Shantou City implemented DIP in 2017, resulting in 4806 kinds of diseases. In the process of promoting medical reform and upgrading and cost control, the burden of medical expenses of insured patients is gradually reduced.

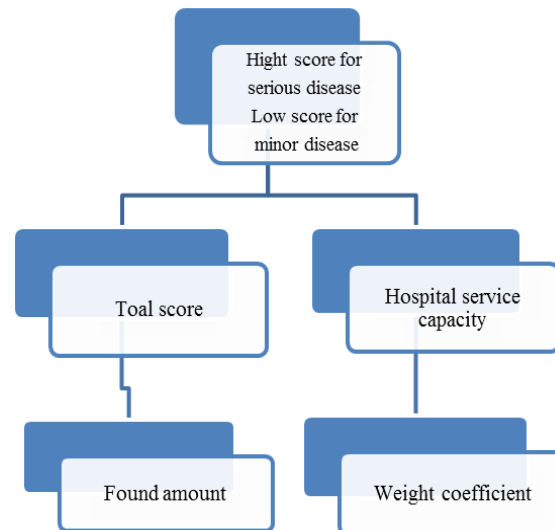


Figure 1: Implementation mode of Zhongshan DIP.

### 3.2.2 Shenzhen Mode

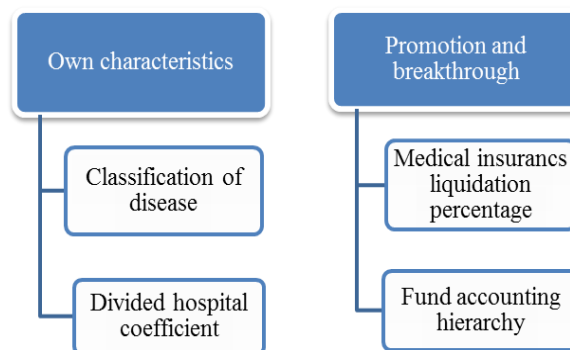


Figure 2: Implementation mode of DIP in Shenzhen.

After the pilot project, Shenzhen has effectively promoted the fine management of local medical insurance. Shenzhen officially implemented DIP in 2020. Although it started late, on the basis of the reform experience of Zhongshan, Qingyuan and other regions, it reformed and innovated the disease type setting, and had its own operation mode in the process of DIP pilot reform. In the initial implementation stage, Shenzhen classifies diseases into four categories: common diseases, grassroots diseases, traditional Chinese medicine diseases and special diseases. The hospital coefficient is divided

into two categories: basic and additive. The two types of coefficients are composed and determined by different factors (see Figure 2). Compared with Guangzhou's determination of addition coefficient, the emphasis of composition is different, which can obviously adapt to some difficult symptoms and introduce new technical projects. In the later stage of development, Shenzhen has made a breakthrough in medical insurance liquidation according to its own situation. By setting the percentage of total payment for pre settlement and applying the formula to carry out fund accounting at different levels [3]. At present, only 9 hospitals in Shenzhen are still implementing Diagnosis Related Groups (DRGs) pilot reform, and the remaining hospitals are implementing DIP payment reform. The fund settlement is more detailed than before, health care has been managed more efficiently.

### 3.2.3 Guangzhou Mode

After nearly four years of practical operation, Guangzhou DIP pilot has realized the integration of medical insurance payment supervision, payment refinement and intelligent management, and has been rated as the national DIP payment demonstration point [4]. Pay according to disease value was implemented in Guangzhou in 2018. In Guangzhou DIP pilot project, the name of the disease was determined through clinical diagnosis and operation specific operation. Then, the specific disease was selected by using the operation code and operation code, and the specific score of each disease under different treatment methods was calculated, and the disease score database was developed. Finally, the weight coefficient was determined, and the medical service cost was viewed by adjusting the change of the coefficient, Finally, reasonable settings are made in the monthly settlement and annual settlement to effectively achieve the goal of cost control, while leaving a balance. compared with the per capita quota settlement mode, single disease payment and total prepayment mode implemented before in Guangzhou, the sub value payment mode of disease type is more in line with the development direction of medical insurance payment reform. In 2020, through DIP pilot reform in Guangzhou, the enrollment rate of core diseases will be increased to 94%, and other cases will be included into comprehensive diseases, The diseases carried out by the hospital can achieve 100% settlement through the score of disease types, so as to realize accurate management under big data. (Note: unless otherwise specified, all data in this article are sorted out according to the data published by Guangzhou Medical Security Bureau in 2021. website: <http://rsj-gz.gov.cn/>).

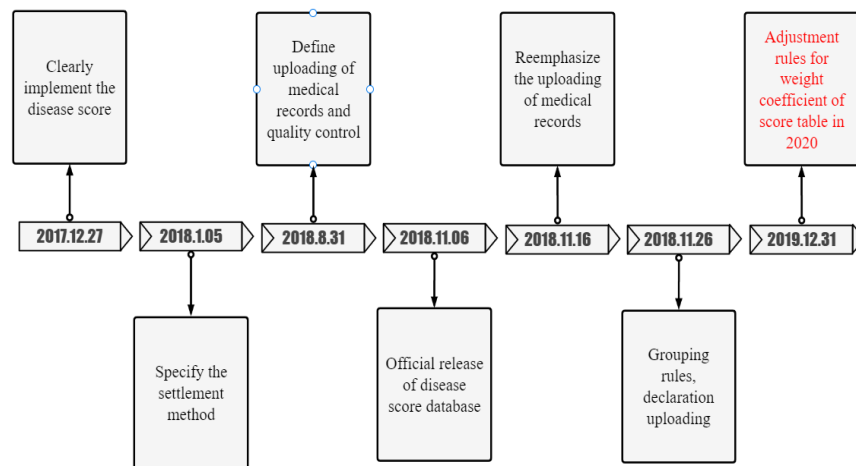


Figure 3: Implementation process of DIP in Guangzhou.

## 3.3 Effectiveness Analysis of DIP Implementation in Guangdong Province

### 3.3.1 Improve the Ability of Hospital Cost Accounting and Cost Control

The implementation of DIP, in the case of fixed total amount, the disease type is assigned, the same score disease, the hospital with relatively low treatment cost can get more expenses. Under this mode, if the hospital wants to obtain more income, it must reasonably control the cost by reducing the cost of inspection, drug consumables, reasonable adjustment of the price of medical services, et al we should promote the standardization of diagnosis and treatment, strive to improve the control of "three rationality (reasonable diagnosis and treatment, rational drug use and reasonable inspection), and strive to "earn work points"[10](Manli Chen et al,2017). At the same time, the implementation of DIP will

also strengthen the supervision of tertiary hospitals in terms of performance evaluation, medical service behavior and quality, and medical cost control, so as to reflect the role of strategic purchase of medical insurance. In essence, it is conducive to forcing hospitals to "be careful", strengthen disease cost control, and improve hospital cost control ability.

### 3.3.2 Promote the Smooth Operation of Medical Insurance Fund

By strengthening the budget and controlling the total amount of funds, the growth rate of medical expenses in Guangdong Province has been controlled to a certain extent. DIP takes the security of the insurance fund as the basic premise, gradually reduces the proportion of medical expenses of the insured and maintains the balance of the medical insurance fund in Guangdong Province. With the balance of the national medical insurance fund. After implementing DIP in Guangdong Province, the effect of medical insurance fund balance is obvious (see tables 1 and tables 2, figures 4 and figures 5). It can be seen that under DIP mode, the continuous growth of medical insurance expenses has not only been controlled, but also effectively promoted the operation of medical insurance fund to reduce costs and increase efficiency.

Table 1: Operation of national basic medical insurance fund from 2019 to 2021.

Operation	2019	2020	2021
Revenue (100 million yuan)	24421	24846	28710
Expenditure (100 million yuan)	20854	21032	24011
Fund profit and loss (100 million yuan)	+3567	+3814	+4699

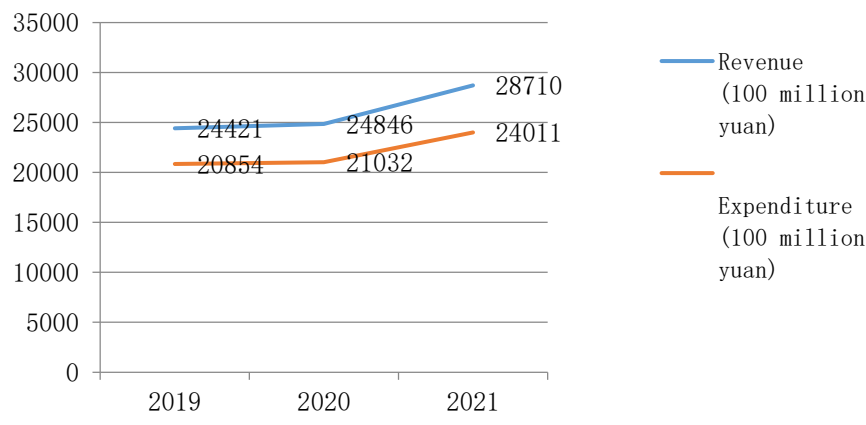


Figure 4: Growth of national basic medical insurance fund income and expenditure from 2019 to 2021.

Table 2: Operation of Guangdong basic medical insurance fund from 2019 to 2021.

Operation	2019	2020	2021
Revenue (100 million yuan)	1550.26	1495.97	1739.90
Expenditure (100 million yuan)	1295.81	1341.68	1592.96
Fund profit and loss (100 million yuan)	+254.45	+154.29	+146.94

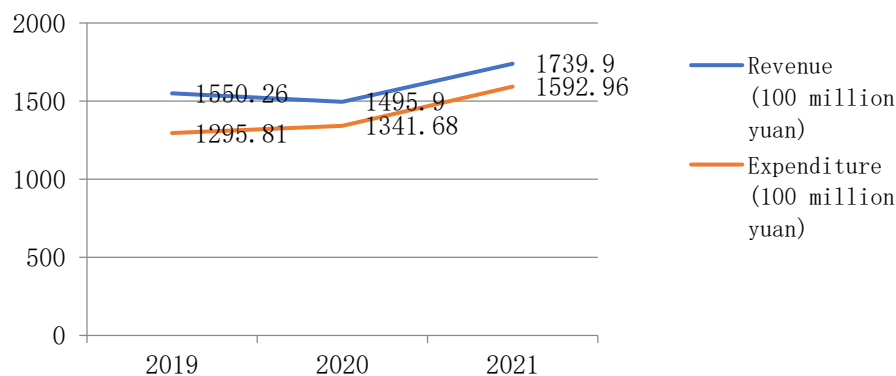
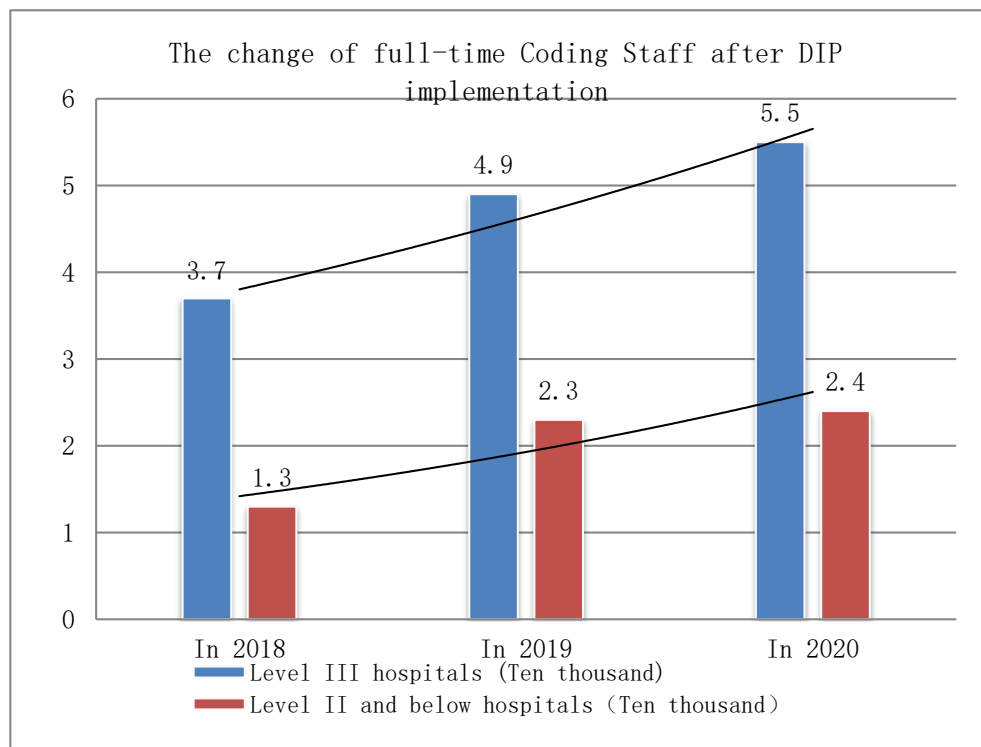


Figure 5: Income and expenditure growth of basic medical insurance fund in Guangdong Province from 2019 to 2021.

### 3.3.3 Management of Improving Clinical Coding and Medical Record Quality

After the pilot reform of DIP was carried out in Guangdong Province, the medical insurance cost has been more refined management, and the clinical diagnosis and treatment behavior, clinical coding work and medical record management of hospitals at all levels have been significantly improved. The quality of medical records is the foundation, and the front page is the key. Whether the main diagnosis and surgical operation are correctly filled in directly affects the payment results, the accuracy of disease and surgery coding affects the annual assessment of medical insurance, so doctors and coders are the key population. After the implementation of DIP in Guangdong Province, the number of medical record coding personnel and other related professional and technical personnel has gradually increased (see Figure 6), especially the number of compound professionals who are familiar with clinical practice, coding and can interpret policies, At the same time, it will play an important role in promoting the integration of clinical diagnosis, coding and score database in Guangdong Province.



(Data source: according to the statistical yearbook of Guangdong Province in 2021)

Figure 6: Statistics of full-time coding staff in hospitals at all levels in Guangdong (2018- 2020).

### 3.3.4 Enrich the Number of Disease Types and Promote Hierarchical Diagnosis and Treatment

After the implementation of DIP, the number of diseases in Guangdong Province has gradually increased. According to the latest statistics in 2018, the number of disease species in most of the pilot cities exceeded 4000 (see Table 3), and a disease score database was established. In 2021, Guangdong Province specially established the " unified disease score database of basic medical insurance payment by disease score " in 2021, which integrates the existing common and grassroots diseases, among them ,7981 kinds of common diseases and 916 kinds of basic diseases are included, which can be used for reference and use by cities. At the same time, "three medicine linkage" reform of traditional Chinese medicine insurance has played a leverage role in the rational allocation and scientific use of medical resources. The implementation and implementation of medical insurance have a great impact on the development of hierarchical diagnosis and treatment, Standardized payment for medical institutions will be conducive to promoting hierarchical diagnosis and treatment and realizing the sinking of medical and health resources[11](Menghan Zhang et al,2020).

*Table 3: Statistics of diseases in some cities of Guangdong Province (2018).*

region	Zhongshan	Shan tou	Qing yuan	Guang zhou	Chao zhou	Jie yang	Yang jiang	Mei zhou	Yun fu
Number of diseases	4655	4806	4725	12030	4725	4725	4737	4996	4806

(Data source: according to the statistics released by Guangdong Medical Security Bureau in 2018)

#### **4. Main Problems in the Pilot Reform**

##### ***4.1 Policy Reasons and Disease Score Settings Vary from Place to Place***

Although DIP has been carried out in Guangdong Province, most of the diseases have not been included in the DIP settlement method. For example, for some special diseases, some municipal policies still adopt payment by project and payment by service unit, this may be the reason why local governments consider their own development status and the development of DIP is still immature at this stage[12](Yaosong Yang et al, 2018). Secondly, there is a deviation in the way of calculating scores in different regions. The method to determine the disease type and score will affect the accuracy of the score, so the base data used to calculate the score is particularly important. At present, there are differences in the methods of determining the score among different cities in Guangdong Province, for example, in Guangzhou, Qingyuan and other places, the total medical cost method is used to calculate the score, while Zhongshan, Zhaoqing and other places use the medical insurance settlement cost method to calculate the score. It is easy to make the proportion relationship between disease scores different between cities and cities, which is not conducive to the establishment of disease score database. This situation may be related to the difference of development level among different cities.

##### ***4.2 Lack of Experience and Immature Hospital Management System***

DIP has higher requirements for the management concept and level of medical institutions. Therefore, the management mode of hospital in terms of information, system and personnel is particularly important. If there is no scientific and effective management system as the guarantee, DIP will face many difficulties. Among the staff in tertiary hospitals, 55% of the people think that the operation and management system of hospitals is not sound enough. The reason may be that most of the public hospital systems in China are still limited in the framework of planned economy, and some hospital managers lack systematic training in management skills and related knowledge, so that they do not master scientific management knowledge, methods or skills. Due to various reasons, there are many drawbacks, and the operation management system of "PDCA"( plan, do, check, action ) cycle management has not been established, so there are challenges in the management mechanism in the implementation process of DIP [13](Liqiong Li et al, 2021).

##### ***4.3 Limited Technology and Incomplete Development of Information System***

High quality development of medical insurance needs information management. The application of DIP has high requirements for the accuracy of relevant disease coding, medical record front page and operation data. However, the versions of medical record home page system used in hospitals are different, and the supporting measures of information technology cannot fully keep pace with the development of DIP. With the continuous development of DIP, the development of DIP has become more and more important, In the future, it will be necessary to configure intelligent technologies suitable for DIP, such as improving the evaluation system of DIP, developing intelligent disease coding adapter, establishing disease score database and disease score payment calculation model to evaluate the impact on the development of medicine, etc. These all need strong information system to provide supporting support, The existing technical level has not been developed synchronously with DIP, which cannot meet the needs of long - term development of DIP. Moreover, the sharing degree of hospital information system is not high, and the system is fragmented, which cannot effectively achieve internal supervision. The problems of low accuracy of data also indirectly increase the difficulty of DIP in the implementation and reform process.

##### ***4.4 Lack of Preparation Leads to the Lack of Professional and Technical Personnel***

After the implementation of the first page of medical insurance, the implementation of the policy of



medical record coding, payment by type, and the quality of medical treatment have a great impact on the accuracy of medical record coding and operation. At present, the infrastructure of some hospital information systems is poor. There are quite a number of primary and secondary hospitals without coders or coders with poor professional ability and low coding level. Some community hospitals even have no coders. The overall number of full - time coders in the whole province is still a small - scale population. It may be that before the implementation of DIP, hospitals have lower requirements and less demand for coding, so they do not pay enough attention to it, as a result, the relevant coding technical personnel have no opportunity to improve the coding professional skills, which makes the real professional coding technical personnel scarce[14] (Weixiong Chen et al,2020). In addition, in some medical institutions, it is easy for coders to violate the rules of " high score", that is, to obtain high score, low score cases are applied to diseases with high score, these are the malpractices of management and personnel in the process of quality management of the front page of medical record. Therefore, the structure of professional talent resources needs to be adjusted and optimized

## **5. Suggestions on the Reform of DIP**

### ***5.1 Strengthen the Standardized Management of the Hospital under the Policy***

The standardization and standardization of diagnosis and treatment behavior is an important foundation of DIP implementation. The reform of medical insurance payment mode cannot do without corresponding supporting measures, which requires the government departments to focus on. Under the DIP rule, the concept and strategy of lean management should be formed, and the circulation mode of " cost control - economic benefit - medical technology progress - reasonable payment " should be formed ; At the same time , All kinds of medical institutions at all levels should comprehensively carry out clinical pathway management , establish a matching database of clinical diagnosis database and ICD code, improve the quality management of the front page of medical records, and realize the unification of medical operation coding, disease classification coding and other kinds of codes in the covered medical institutions ; The high - efficiency operation of the functions such as annual liquidation of the agency needs to work together with the hospital for the hospital management system including hanging bed hospitalization, decomposition of admission , three reasonable, et al ; To establish a performance evaluation system for designated medical institutions of medical insurance in line with the development status of hospitals at all levels in Guangdong Province, which is linked to the hospital coefficient and settlement management of DIP, To achieve accurate management and differentiated payment of medical insurance designated medical institutions .

### ***5.2 Integrating DRG to Help DIP Develop Continuously***

DRG and DIP have the same goal by different ways. Both of them promote the transformation of operation mode of medical institutions through the way of "package pricing", from passive to active, and actively play their own role to control costs. They are both powerful boosters in the reform of medical insurance payment mode. Diagnosis Related Groups (DRG) is a management system that divides patients into several diagnosis groups according to age, disease diagnosis complications, treatment methods, disease severity, outcome and data consumption. The performance evaluation of DRGs is used to determine the settlement coefficient of each medical institution, which is conducive to guiding and promoting the formation of hierarchical diagnosis and treatment. Today, the disease DRG has been implemented in 30 cities in China. By the end of 2021, DRG has entered the actual payment stage. According to the document "opinions of the Central committee of the Communist Party of China and the State Council on deepening the reform of medical security system", provinces are required to further deepen the reform of medical and health system , implement the document of " three year action plan of DRG / DIP payment mode " in 2021, By the end of 2025, DRG / DIP payment mode reform will be implemented to all qualified medical institutions that provide inpatient services, accelerate the work requirements of DRG / DIP payment mode reform, establish an efficient and practical medical insurance payment mechanism, realize the high - quality development of medical insurance, and promote the collaborative reform of medical insurance and medicine. The coordinated development of DRG and DIP will further improve the management level of medical insurance and the expenditure efficiency of medical insurance fund.

### **5.3 Improve Technology and Speed Up the Construction of Information System**

The construction of DIP information system requires the relevant government departments to formulate relevant plans. For example, in the development of intelligent disease coding adapter, a set of standard coding directory can be set in the information system according to the coding rules and methods of medical business such as the three catalogue, and timely convert, match and connect with the coding systems used by other health departments and hospitals at all levels. To further improve the information flow rate of hospital information system and other information system, such as the hospital information system. To ensure that the insured can settle accounts on site in designated medical institutions and the service efficiency of medical institutions.

### **5.4 Expand the Demand and Pay attention to the Training of Professional Talents**

The implementation and development of DIP and DRG will inevitably require the participation and voice of relevant professional and technical personnel in the future. Some technical and operational work such as disease coding, classification, grouping and merging will require the participation of talents with relevant professional background. Therefore, relevant departments should increase the training of professional and technical personnel to improve their professional level, we can also recruit professional talents through talent introduction and policy support, expand the team of medical record and coding personnel, enrich professional strength, cultivate professional talents, build professional team, and help DIP develop towards a more standardized and comprehensive direction.

## **6. Conclusion**

DIP affects the clinical diagnosis and treatment behavior and medical record management. Under the control of regional total amount, the "relative score" accounting of disease types can objectively reflect the disease severity, treatment complexity and resource consumption of patients admitted to the hospital, and it is also close to the "real world of clinical diagnosis and treatment", It is helpful to evaluate and evaluate the ability and level of clinical specialty and discipline more objectively, which is conducive to the continuous progress of specialty and discipline. The DIP pilot reform of medical insurance payment mode in Guangdong Province has achieved good results at different levels, effectively promoted the healthy competition among medical institutions, and further promoted the implementation of hierarchical diagnosis and treatment, At the same time, promote the hospital to expand the service radius with better technology, service and quality. However, DIP is only a relatively stable payment method, which cannot solve the ever-changing new problems in practice, For example, how to further improve the pilot work of DIP in cities with great difference in development level, gradually unify the policies of DIP, and how to do a good job of mutual linkage with medical and medical reform, so as to guide the construction of hierarchical diagnosis and treatment and medical Association, improve the ability of coding and writing, the quality of the front page of medical records and the ability of information management, These tasks still have a long way to go. At present, the first thing to be solved is how to optimize the process with the help of information technology and establish clinical and coding work; Secondly, the overall level of regional diagnosis and treatment information and coding quality affects the accuracy of disease type score database, so medical record coding is particularly important, and it is urgent to promote the homogenization of quality and coding level of regional home page, We should take the initiative to promote the reform of the medical record system according to the needs of the relevant departments, actively promote the reform of the medical record system according to the needs of the relevant departments.

## **References**

- [1] Lijin Tang, Yanchun Zhang, Jinpei Li.(2018) *Process and Preliminary Effect of the Comprehensive Reform of Payment Based on Specific Disease Score in Guangdong [J]. China medical insurance*, (04):44-46.
- [2] Min Chen. (2020) *GuangZhou Designated Medical Institutions according to Evaluating Payment by Disease Scores Implementation Effect Evaluation [D]. Lanzhou University*.
- [3] Jifang Chen, Liping Bai, Huiyan Tan, et al.(2022) *Practice of the Diagnosis-Intervention Packet Payment in Guangdong and Its Enlightenments to Hospital Medical Insurance Management [J]. China*

*hospital management*, 42(03):63-66.

[4] Lu Lu. (2020) *The practice of payment by disease score in Guangzhou medical insurance and its impact on hospital management [J].* *Massage and rehabilitation medicine*, (23):80-83

[5] Yi Huang, Zhu Yi. (2021) *Enlightenments and reflections from Guangdong's experience for the diagnosisintervention packet national pilot cities [J].* *Western China medicine*, (12):1739-1743

[6] Wei Wei. (2020) *Analysis on the Policy of Payment by Disease Score in Basic Medical Insurance in Guangdong Province [C].* Jinan University

[7] Wang Huan, Lijin Tang, Xiuping Peng. (2019) *The Main Practice and Effects of Promoting the Reform of Payment by Disease Score in Guangdong [J].* *China medical insurance*, (09):50-52

[8] Baorong Yu. (2021) *Reform Practice and Development Connotation of DRG and DIP [J].* *Health economics research*, 38(01):4-9

[9] Guihong Tan, Xiaohui Ren, Zhijun Liu, Ningxiu Li. (2013) *Comparative study on case-based payment between China and foreign countries[J].* *China health management*, 30(09):671-676

[10] Manli Chen, Bin Zhao. (2017) *Enlightens from Practice of Disease-Based Score Payment [J].* *China health economy*, 36(06):38-41

[11] Menghan Zhang, Zhimei Hao. (2020) *Current situation and problems of medical insurance payment by disease in China [J].* *Rural health in China*, 12(01):75-77.

[12] Yaosong Yang, Chao Liang, LiJun Cui, Yang Li, Xinhang Chi. (2018) *Analysis of medical insurance reform [J].* *China industry health*, 15(17): 124-125. DOI: 10.16659/j.cnki.1672-5654.2018.17.124.

[13] Liqiong Li, Keshen Cao, Tingting Guo, Jian Chen. (2021) *Operation and management strategies of hospitals under big data diagnosis-intervention packet [J].* *Modern hospital*, 21(11):1745-1748

[14] Weixiong Chen, leng Xia, Jinhua Cai, Zebo Chen, fan Ou. (2020) *Analysis of the Influencing Factors of the Application of the First Page of Medical Record to Pay by Disease Score [J].* *China medical insurance*, (01):51-54. DOI:10.19546/j.issn.1674-3830.2020.1.010.