

Analysis on Medical Cost Control in Chongqing Public Hospitals from 2011 to 2015

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ABSTRACT

Based on the analysis of outpatients and inpatients of public hospitals at all levels in Chongqing from 2011 to 2015, this paper combined with a new round of public hospitals reform which beyond the increased rate of medical expenses and the larger proportion of drugs, accounted for a further policy recommendation. The total income balance of 2011—2015 in 16 public hospitals randomly collected in Chongqing, including the related key indicators: the outpatients and inpatients medical expenses per capita, the ratio of drug, which were calculated over the past five years. The proportion of drugs in sampled 16 hospitals in 2011—2015 were increased year by year, with an average increase rate of 32.82%. The outpatient and inpatient's drug ratio were above 38% in all level of public hospitals; The average OP expenses per capita, respectively by 8.94% and 8.58% growth rate in secondary and tertiary hospitals. In primary hospitals the average inpatient expenses per capita growth rate was 8.39% during survey years. A new round reform of public hospitals in Chongqing has implemented a policy of primary consultation and two-way referral at the grassroots level.

Keywords: public hospital, outpatient expenses, inpatient expenses, medical expenses

1. INTRODUCTION

The growth of medical expenses in public hospitals has always been the core issue in the reform of China's medical and health system, and also the focus of the public's attention^[1], especially the medical expenses and drug expenses. In August 2017, the notice on printing and distributing the comprehensive reform implementation plan of public hospitals in Chongqing (hereinafter referred to as the notice) issued by Chongqing Municipality proposed that all kinds of public hospitals should comply with the reform needs, strictly control the growth rate of medical expenses within 10%, and reduce the proportion of drugs to less than 30%. In this study, the data of 16 sampling hospitals and public hospitals at all levels in Chongqing in the past five years were analyzed to understand the medical expenses of different levels of public hospitals. In order to reduce the burden of medical expenses of the public, relieve the pressure of medical treatment of public hospitals at all levels, simultaneously modify the proportion of medical insurance, this paper will carry out a new round of public hospital reform research in Chongqing.

2. DATA AND METHODS

2.1 Data Source

In this study, 16 public hospitals in Chongqing were selected as sample hospitals for investigation and study, to understand the drug revenue and expenditure and outpatient and inpatient revenue and expenditure of each sample hospital in 2011-2015, and to analyze the growth of medical expenses of public hospitals in Chongqing Based on the data of Chongqing Health Statistics Yearbook and medical expenses of Chongqing Health and Family Planning Commission. In order to make the survey data comparable, 16 hospitals with the strongest comprehensive ability and 439 public hospitals in 38 districts and counties were selected as the research objects in this study to ensure that the new round of public hospital reform policy in Chongqing can be carried out steadily.

2.2 Research Methods

Based on the data collection of hospitals and patients in Chongqing from 2011 to 2015, including the statistics of

key indicators such as hospital income, hospital balance, outpatient cost, inpatient cost, drug cost and drug proportion, and descriptive statistical analysis using excel2010 and spss20.0 software, the balance of outpatient and inpatient revenue and expenditure of 16 public hospitals and 38 district and county-level public hospitals were calculated respectively Medical expenses of outpatients and inpatients.

3. RESULTS

3.1 Outpatient and inpatient income and expenditure of 16 municipal public hospitals in Chongqing

From 2011 to 2015, the total medical revenue of 16 public hospitals in Chongqing increased from 6.141 billion yuan in 2011 to 12.426 billion yuan in 2015, with an average annual growth rate of 19.27%, showing a gradual upward trend. In the past five years, the average annual growth rate of outpatient and inpatient income is 22.14% and 17.41% respectively; the average annual growth rate of outpatient part and inpatient part of drug cost is 20.25% and 12.91% respectively. The sum of the 16 public hospitals surveyed showed a downward trend, especially after 2011, the hospital balance decreased sharply, from 6.141 billion yuan in 2011 to 1.76 billion yuan in 2015. On the contrary, in the past five years, the sum up of drugs in public hospitals has increased year by year, with an average annual increase of 32.82% (Table 1).

Table 1 medical balance of 16 municipal public hospitals in Chongqing (100 million yuan)

Year	Outpatient income	Outpatient drug revenue	Inpatient income	Inpatient drug revenue	Sum up of medical treatment	Drug sum up
2011	23.03	12.10	38.37	15.10	61.41	2.05
2012	31.10	16.11	47.84	18.35	42.24	4.83
2013	37.48	19.53	55.75	20.64	19.53	6.25
2014	25.33	23.26	67.60	24.18	16.86	6.46
2015	51.25	25.30	72.92	24.54	17.60	6.38

3.2 Outpatient and inpatient medical expenses of 16 municipal public hospitals in Chongqing

In the survey year, the average medical expenses per time of outpatients increased year by year, from 284.59 yuan in 2011 to 409.80 yuan in 2015, with an annual growth rate of 9.54%; in terms of hospitalization, from 12131.25 yuan in 2011 to 15184.07 yuan in 2015, with an annual growth rate

of 5.77%; in terms of discharge, the average medical expenses per day of outpatients increased by 9.71%, with an annual growth rate similar to that of outpatients All the medical expenses were similar. In terms of drug expenses, it can be seen that in the past five years, the proportion of outpatient drugs is heavier, accounting for nearly half of the average secondary medical expenses of outpatient patients; the proportion of inpatient drugs is more than 30% (Table 2 and 3).

Table 2 outpatient medical expenses of patients in 16 municipal public hospitals in Chongqing (yuan, %)

Year	Outpatient		
	Average secondary medical expenses of outpatients	Outpatient medicine fee	Drug proportion
2011	284.59	149.43	52.50
2012	292.76	151.67	51.81
2013	361.10	188.17	52.11
2014	388.69	199.49	51.32
2015	409.80	201.85	49.26

Table 3 inpatient medical expenses of patients in 16 municipal public hospitals in Chongqing (yuan, %)

Year	Inpatient			Average daily hospitalization medical expenses of discharged patients
	Per capita medical expenses of inpatients	Inpatient drug fee	Drug proportion	
2011	12131.25	4772.79	39.34	949.30
2012	13026.25	4995.90	38.35	1027.51
2013	14208.41	5260.56	37.02	1167.67
2014	14929.43	5340.93	35.77	1306.16
2015	15184.07	5109.24	33.65	1375.27

3.3 Medical expenses of general public hospitals at all levels in Chongqing

The average medical expenses of outpatient and inpatient in the first-class public hospitals in Chongqing are lower than those of other medical institutions. It mainly provides routine medical services for ordinary patients with mild illness. Medical instruments and equipment are conventional and limited, and patients mainly dispense drugs. Therefore, the increase of its drug proportion is higher than that of other hospitals^[2]. In terms of outpatient service, the outpatient service cost of the first level hospital

has been well controlled in the past five years. The average annual growth rate of outpatient service cost of the second level hospital and the third level hospital is 8.94% and 8.58%, respectively. In terms of hospitalization, the average annual growth rate of per capita medical expenses of first-class hospitals is as high as 8.39%, and that of second-class and third-class hospitals is 7.00% and 3.48%, respectively. It can be seen that the per capita medical expenses of third-class hospitals have been well controlled in recent years. The proportion of drugs in hospitals at all levels has exceeded 38% in the past five years. The absolute values of the average secondary medical expenses of outpatients and the average medical expenses of inpatients in the tertiary hospital are the highest, as shown in Table 4-6.

Table 4 medical expenses and composition of public hospitals at all levels in Chongqing (yuan, %)

Year	Primary hospital		
	Average outpatient medical expenses	Per capita medical expenses in hospital	Drug proportion
2011	123.48	2889.90	38.92
2012	193.39	3233.40	39.58
2013	127.21	3889.27	45.00
2014	160.6	4081.04	44.06
2015	171.19	3988.59	44.98

Table 5 medical expenses and composition of public hospitals at all levels in Chongqing (yuan, %)

Year	Secondary Hospital		
	Average outpatient medical expenses	Per capita medical expenses in hospital	Drug proportion
2011	164.28	5010.56	46.28
2012	173.61	5596.72	44.09
2013	200.60	6133.01	44.63
2014	221.44	6434.63	42.93
2015	231.41	6566.17	40.25

Table 6 medical expenses and composition of public hospitals at all levels in Chongqing (yuan, %)

Year	Tertiary hospitals		
	Average outpatient medical expenses	Per capita medical expenses in hospital	Drug proportion
2011	252.64	11543.13	44.46
2012	265.12	12102.95	44.11
2013	311.50	12944.48	43.71
2014	335.76	12907.03	42.64
2015	351.12	13235.38	40.65

4. DISCUSSION

4.1 Cancel the drug markup fee and drug service fee in an all-round way, and implement the construction of "two ticket system"

Since 2011-2015, the proportion of outpatient drugs in 16 municipal public hospitals in Chongqing has exceeded half of the total cost, and the proportion of inpatient drugs has

exceeded 1 / 3 of the total cost, while the proportion of outpatient drugs in municipal public hospitals in Chongqing has occupied about half of the total cost, and the proportion of inpatient drugs has exceeded 2 / 5 of the total cost. The proportion of drugs required in the notice is far more than 30%. In the early 1950s, China began to implement the policy of increasing the price of drugs. The policy stipulates that the addition rate of Western medicine sold by the hospital shall not exceed 15%, that of Chinese patent medicine shall not exceed 16%, and that of Chinese herbal medicine shall not exceed 29%^[4]. After the 1980s, due to the imperfect compensation mechanism of the medical

system, the phenomenon of supporting medical institutions with drugs is serious, and the lack of effective cooperation from the supervision department, the drug revenue has gradually become an important source for the development of medical institutions [5]. From 2013 to 2015, the growth of medical treatment in 16 municipal public hospitals has been relatively stable, and the growth of drug treatment has been steady in the remaining five years. It can be seen that the phenomenon of "supporting medical treatment with drugs" has been gradually alleviated. In addition, the implementation of the "two ticket system" electronic supervision system will reduce the circulation of drugs, reduce the virtual high price of some drugs, ensure the supply chain of low-cost drugs, and make them return to the pharmacy; adjust the price of medical service items, and increase the part of "human" cost.

4.2 Adjust the proportion policy of medical insurance reimbursement and control the unreasonable increase of medical expenses

In terms of payment method of medical insurance, the combination of total budget and pay per bed per day is fully implemented to adapt to different groups of people, and the payment method of DRGs is gradually replacing the traditional payment mode of pay per project. As far as hospitals are concerned, we should strengthen the supervision on the purchase of large-scale equipment in public hospitals, strictly control the growth rate of indicators such as the medical expenses of public hospitals and the proportion of drugs based on different diseases. The assessment of the growth of medical expenses in hospitals should be combined with the comprehensive indicators such as medical insurance payment, financial subsidies, performance of public hospitals and remuneration of hospital leaders. Public hospitals need to establish a sound information disclosure system, and implement index ranking support in combination with reward and punishment mechanism.

5. CONCLUSION

At present, China's hierarchical diagnosis and treatment system is still in the exploration stage. In the aspect of diagnosis and treatment fee, medical service price should be differentiated according to different levels of hospitals and medical staff with different technical titles. Hospitals need to improve the two-way referral process, and gradually realize timely referral between medical institutions at all

levels. The treatment of acute and chronic diseases mainly points out the types of acute and chronic diseases. Family doctors mainly take chronic patients such as hypertension and diabetes as the contracting objects, carry out door-to-door and appointment services and other convenient services, to reverse the waste of medical service resources.

ACKNOWLEDGMENT

This work was supported by Technical Foresight and Institutional Innovation Project of Chongqing Science and Technology Commission (cstc2018jcyj-zcdxX0049); Scientific Research Projects of Chongqing Sports Bureau (A201807); Humanities and Social Sciences Research Project of Chongqing Education Committee (17SKG018)

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