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## **Observation of Implementation of Rural Hierarchical Diagnosis and Treatment Based on Chinese New Rural Cooperative Medical System**

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## **Abstract**

The impact of Chinese new rural cooperative medical policy which has been implemented for nearly forty years on rural hierarchical diagnosis and treatment has been stated generally through existing related reports in the Paper. It is found that the policy cannot promote implementation of county-township-village diagnosis and treatment in the rural area. Although it has improved economic condition of medical and health institutions in villages and towns and village clinics to a certain degree, it cannot promote increase of total persons-times of medical services provided for local farmers by medical and health institutions in villages and towns or divert rural cooperative patients to medical and health institutions in villages and towns. Most of them will still select to see doctors in medical institutions of country level or above, which is of little significance to rural hierarchical diagnosis and treatment. At the same time, with reference to private insurance policy of Australia, some personal suggestions and measures for implementation of rural hierarchical diagnosis and treatment have been discussed.

**Keywords:** China; new rural cooperative; medical policies; hierarchical diagnosis and treatment; medical centers in villages and towns; stated generally

China began to launch new rural cooperative medical security policy (hereinafter referred to as “NCMS”) in 2003 and made experiment in 2006. The policy of NCMS is to protect rural families from financial risk brought by medical expenses and make farmers in China enjoy more healthcare services<sup>[2]</sup>. The policy plan has been implemented for 15 years by now and is continuously improved and reformed every year. Through related literature of NCMS policy reported previously, in combination with actual conditions of NCMS policy in local villages and towns, the impact of NCMS policy on rural hierarchical diagnosis and treatment has been discussed.

From reform and opening up in 1978 to now, Chinese medical and health institutions in villages and towns have been primary healthcare institutions of the country and undoubtedly have provided hundreds of millions of rural population in China with over forty years’ public

health and basic healthcare services. Different from medical centers of western developed countries, these centers usually provide hospitalized treatment with beds which is similar to small community hospitals in America. Rural hierarchical diagnosis and treatment mode in China is county-township-village diagnosis and treatment mode. Township health centers are the middle layer in medical system of county-township-village in China and the bottom layer is village clinic or medical room. Most practitioners are clinicians who have not received formal academic education. The top layer is county hospital with relatively high charging and professional diagnosis and treatment technology. Township health centers play a critical role in providing rural medical services and receiving transfer treatment services from county hospitals between these two layers. At the same time, these centers are responsible for providing national basic-level public health services and training rural clinicians to effectively supervise local rural health system.

Although township health centers play a critical role in rural medical treatment and healthcare, at the end of 1970s, influenced by national “de-socialization” policy at that time, they began to decline. <sup>[3]</sup> In subsequent practice launching market-oriented reform, the Central Government transferred financial responsibility of publicly funded rural health agencies to local governments and began to allocate most national health funds to urban areas, making township medical institutions in many places unable to provide adequate funds for their health systems <sup>[4]</sup>. Without financial support, sanitary and medical institutions in villages and towns could only rely on income from hospital services to assume sole responsibility for its profits or losses [5]. For example, managers or operators of township health centers would be encouraged to sell medicines with high profits to increase income and carry out more diagnosis and treatment technology services to increase income <sup>[6-8]</sup>. Under non-public ownership economy, prices of medical services of sanitary and medical institutions in villages and towns dominated by contract operation were continuously rising, assigning more expenses to be assumed by rural families and causing collapse of rural medical insurance system. Hence, financial risks of more rural families for poverty caused by diseases were increased and utilization rate of medical and health services was declining. Treatment person-time of patents and utilization rate of bed in township health centers all dropped and medical technology quality also worsened. <sup>[9]</sup> It was researched in literatures and reports that at the beginning of the twenty-first century, 65% rural residents chose not to be hospitalized

or not to cooperate with treatment during hospitalization, such as unwillingness to receive excessive examinations. Most respondents showed that worrying about economic cost was the main for them to take above actions<sup>[10, 11]</sup>.

In 2003, Chinese Government introduced the largest public medical insurance program in the world, namely Chinese new rural cooperative medical policy<sup>[12]</sup>. The purpose was to guarantee the ability of rural families to cope with disease-related economic risk, relieve farmers' burden to see doctors and better realize hierarchical treatment. At the beginning, with new rural cooperative medical program, each person only needed to pay 10-20 yuan/year and the sufficient part would be subsidy from central and local fiscal appropriation. At the end of 2011, government subsidy increased and the subsidy amount for each person reached 200yuan/RMB<sup>[13]</sup>. Since new rural cooperative medical<sup>[13]</sup> policy, it was generally popular with common people and the coverage continuously increased. Over 95% regions and over 836 million farmers participated in insurance<sup>[14]</sup>. Generally, as for new rural cooperative medical policy, specific part of hospitalization expenses of patients would be reimbursed and patients only need to see doctors in designated medical and health institutions each time. Then each county would formulate local reimbursement policies and detailed provisions, such as disease-based reimbursement item, reimbursement rate, lower limit of reimbursement amount. All these are collectively referred to as local policies. Medical insurance bureau at country level would make appropriate priority adjustment according to local medical resources and different countries had different implementation time<sup>[15]</sup>. Health institutions at villages and towns are the core requiring focus of new rural cooperative medical policy at that time. The policy is intended to encourage rural patients to see doctors in township health centers where they are located instead of other medical and health institutions. In addition, the policy mainly focuses on hospitalization reimbursement policy. Sometimes expenditure of village clinic may not be reimbursed, for village clinic only provides outpatient treatment services. Patients are encouraged to see doctors in township health centers to control medical cost of the whole country, for expenditure regarding hospitalization of township health center will be lower than that in county hospital. As time goes by, the difference between township health center and county hospital will be revealed<sup>[16]</sup>. Township health centers also play critical roles in

implementing and managing local medical service items.

New rural cooperative medical policy has played a core in rural healthcare system which is continuously developing in China. However, as for the influence of the plan on township health centers, there are still many problems to be solved. Related literatures have reported good or bad results of several researches on the plan. Wagstaff A, et al.<sup>[17]</sup> found that although the program improved income of township health centers in 2005, it also increased expenditure. It is also found in one research of Sun X<sup>[18]</sup> that among counties participating in the plan, the growth rate of income of township health institutions was faster. However, the research is only a preliminary one and expenditure of the institution is not researched. On the contrary, Yi H et al.<sup>[16]</sup> found that there is no substantial relationship between implementation of new rural cooperative medical policy and income increase in township health center. Hence, evidences about whether medical insurance policy has relieved economic burden of families are also mutually contradictory. To further observe the influence of Chinese new rural cooperative medical policy on rural hierarchical diagnosis and treatment, Chinese Academy of Sciences and Stanford University conducted a research<sup>[19]</sup>. In this research, representative township health centers and personnel from 25 rural areas in five provinces, Jiangsu, Sichuan, Shaanxi, Jilin and Hebei comprehensively implementing new rural cooperative medical policy from 2004 to 2007 were randomly selected. 5 sample counties were selected from each province. We took sample of two towns from each county and each town had two villages. Data acquisition of personnel was mainly from individuals and families, township health centers, administrative offices at county level and statistical bureaus at county level. In addition, 8 families were randomly selected from the register of each village and samples of 3257 people from 3257 households were input. Among these individuals and families, we collected details for use and expenditure in medical treatment and healthcare of each family member in the previous year. Specific indexes included whether the family has joined new cooperative medical plan; whether family members were sick in the previous year; whether sick family members consulted doctors. The respondents also reported self-paid expenses in medical services and medicines, traffic and catering expenditure related to medical treatment and healthcare as well as the part reimbursed by new cooperative medical plan. At the same

time, the investigation group made detailed investigation for 44 township health centers in all sample towns and villages and acquired financial data related to medical and health institutions in villages and towns. Specific indexes included number of years for illness of patients, bed occupation rate, average hospitalization time, total income, hospitalization and outpatient income, medicine income, income from government subsidy and total expenditure. In addition, it also inquired about work made by township health centers for managing new rural cooperative medical plan. Furthermore, it collected information about specific duties of staff, number of days spent by staff in these tasks, expenses (excluding staff's salary) and subsidy and compensation obtained for the work. It was found that operation deficit of these township health institutions decreased. But patients and bed occupation rate did not change and average hospitalization time increased by 1.37 days. Total number of patients was unchanged, but annual expenditure self-paid by patients decreased by 17%. It also indicates that new rural cooperative medical security policy program has reduced self-paid expenses of patients in medical services with high cost. At the same time, the research also indicates that reimbursement rate of county hospital has influence on income of township health centers and slight increase of reimbursement rate of county hospital is closely related to decrease of income of township health centers. The result may be because that more reimbursement rate of county hospitals has attracted patients to county hospital and these patients are unwilling to choose township health centers, especially for hospitalization treatment. In particular, as for the medical security plan for spiritual poverty alleviation being carried out at present, the government pays for poor people so that more inpatients who dare not see doctors in county hospitals due to hospitalization expense will select comprehensive hospitals of county level and above.

With continuous increase of sanitary and medical service expenses, financial condition of medical and health institutions in villages and towns is continuously worsened. New rural cooperative medical policy seems to improve capital deficiency problem of Chinese rural health system to a certain degree and enhance facilities providing primary and treatment technology in Chinese villages <sup>[20]</sup>. However, there are almost no evidences which indicate that Chinese new rural cooperative medical program can make patients more likely to stay in

medical and health institutions in villages and towns to seek medical services. In combination with above research, it can be concluded that Chinese new rural cooperative medical policy has improved economic condition of medical and health institutions in villages and towns and village clinics to a certain degree, but it cannot promote increase of total persons-times of medical services provided for local farmers by medical and health institutions in villages and towns. In another word, it cannot retain local rural patients. Hence, it is of little significance to carry out rural hierarchical diagnosis and treatment.

It is also found on the basis of above research that the reason of above conclusion may include the following aspects. Firstly, with urbanized development of Chinese rural population, more and more residents involved in rural cooperative choose to live in cities above county level. The number of rural residents is decreasing. However, the number of people involved in rural cooperative medical insurance does not decrease significantly. According to the principle of distance proximity, residents will still choose medical and health institutions above county level to see doctors; secondly, although total hospitalization expenditure of medical institutions above county level is more than treatment expense of township health centers, reimbursement policy of rural cooperative has been correspondingly adjusted in all counties in recent years and reimbursement ratio of county-level hospitals is increased; thirdly, as for technology and equipment advantage of medical and health institutions at county level, compared with township health centers, county hospitals have better technical talents and medical resource advantages. Farmers will still see doctors in medical institutions of county level and even above. As for how to carry out medical hierarchical treatment in rural area better, avoid overcrowding of hospitals of county level and above and wasting national medical resources, efforts should be made to truly realize seeing doctors in township health centers or village clinics in case of minor illness.

Maybe the medical hierarchy system being implemented in Australia at present can provide some references for hierarchical treatment in Chinese rural areas. Apart from medical insurance for all people, Australian Government also forces high-income group to purchase private insurance, otherwise it will impose higher taxes <sup>[21]</sup>. Private health insurance is the supplement to medical public insurance. The country has always adopted stimulation policy

for private insurance. It is a balance system providing medical healthcare between public and private subsidies <sup>[22]</sup>. Most funds raised by private insurance are used to improve health service facilities of private medical institutions in communities, provide consumers (patients) with valuable selections, divert patients of large hospitals through maximizing resources of public and private hospitals and better relieving residents' burden. Residents need not to pay money for serious illness in Australian public hospitals. The most significant and difficult operation can only be performed in public hospitals, which ensures maximum utilization of medical resources. If residents want to perform operation as soon as possible or are afraid of being waiting indefinitely, they can only select private hospitals. At this time, private insurance can work to promote diversion of patients of public hospitals and relieve burden of public hospitals. In addition, as for medical insurance in Australia, there is no difference between hospitalization or outpatient. It can work regardless of the level of doctors or medical institutions. It is found in one opinion survey that obvious advantage of private health insurance is "rapid medical treatment and avoiding waiting like public hospital" (accounting for 28%) and "freedom to choose doctors"(accounting for 21%), dentistry and other auxiliary services (accounting for 20%) <sup>[23]</sup>. Among countries in the Organization for Economic Cooperation and Development (OECD), America is the obvious leader. Among all health expenditures, 57.2% is from private financing, but Australia still ranks in the fifth place. 33.1% of health funds are from private sectors. The financing mode of Australian private medical insurance sector is different from America. In particular, private medical insurances are almost all directly purchased by Australians. On the contrary, Americans rely on employment <sup>[24]</sup>. In September, 2010, since social insurance plan for the whole people was implemented, over 10 million people have enjoyed private medical insurance <sup>[25]</sup>.

On the whole, I think that related departments in the country can take some measures to better realize the objective of rural hierarchical treatment to a certain degree. These measures include the following aspects: firstly, continuing making more efforts in physician training in rural or township health centers to improve treatment level of basic-level medical staff and continue expanding directed training plan of general practitioners and national directed rural physicians; secondly, increasing investment in basic health facilities of township health and



rural clinics to better provide more excellent treatment services for local farmers; thirdly, implementing stricter medical insurance strategy, exerting regulation function of medical insurance, make the focus of medical insurance funds put on health institutions of villages and towns; fourthly, medical treatment alliance, specific treatment alliance, trusteeship of large top three hospitals, remote consultation, online medical treatment being boosted may realize information resource sharing, medical technology sharing of township health centers and medical institutions above county level, narrow the gap of medical level and make more diseases diagnosed and treated at the doorway, which will surely cause some farmers to flow back to township health centers; finally, the most importantly, medical and health institutions in villages and towns shall further complete transfer treatment and triage to truly perform their critical role of connection link. In addition, a series of policies can be formulated in China, such as introducing private insurance to medical field and increasing investment of private insurance funds of private hospitals. I believe that in the future, rural hierarchical diagnosis and treatment in China will be better.

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