Policy Change in the Context of Multiple–Streams Theory–Take China's Centralized Drug Procurement Policy as an Example

Xin Wen*

Beijing Normal University, School of Government, 100875 Beijing, China

Abstract: As an important theory of policy process analysis, multiple–streams theory provides a highly explanatory analytical framework and perspective for exploring the dynamics of policy change. This paper uses multiple–streams theory to analyze the history of China's drug procurement policy changes, found that the China's drug procurement policy has gone through four development stages. Each change in drug procurement policy is due to a particular problem that is highlighted, focal issues enter the policy agenda when problem streams, policy streams and politics streams are highly coupled and the issue window opens, then the policy changes. This paper provides an outlook on the key directions of China's drug procurement policy, in order to provide useful reference for the study of multiple–streams theory and the study of China's drug procurement system.

1 Introduction

Sound drug procurement system is an important task in the reform of the medical and health care system and an important reflection of the ability to improve national governance. Early 21st century, China's pharmaceutical procurement policies entered the era of exploration of centralized procurement, which has gone through three evolutionary processes: state monopoly for purchase and marketing, decentralized purchasing and centralized purchasing, and has significantly reduced the cost of the people's medical. China has issued opinions on promoting the normalization and institutionalization of centralized quantity procurement of drugs, according to a notice released by the General Office of the State Council on February 2021, required all relevant departments to further promote the system of centralized drug procurement, the document became the platform document for centralized volume purchasing. This paper combs the history of China's drug procurement policy changes and analyzes the inner mechanism of drug procurement policy changes by applying multiple–streams theory. In order to enhance the explanatory power of the theory in the study of the dynamics of policy change and to provide a practical basis for further reform of the medical and health care system.

2. Changes in the centralized drug procurement policy

Since the founding of New China, China’s drug procurement model has shifted from state monopoly for purchase and marketing to decentralized procurement and centralized procurement, which is a continuous improvement process. The system of unified purchase and sale was implemented before the reform and opening up, and the country comprehensive control over the production, distribution, sale and use of drugs. Due to the system is compatible with the planned economic system and has a weak economic foundation, it differs greatly from the current system and has more influencing factors, so it will not be discussed in this paper. Decentralized purchasing policies occurred from 1984—1999, medical institutions deal directly with drug distributors, thus giving rise to inflated drug prices and massive commercial bribery¹, during this period, governments across the country began to explore a centralized procurement system for addressing market disruptions in decentralized procurement. The evolution of China's centralized drug procurement system is shown below.

2.1 The start-up phase of the centralized drug procurement system (2000-2005)

In the above context, the government summarizes the problems revealed by the decentralized procurement system. National Health Commission of the China jointly with many departments, issued in 2000 "Guidance on the
Reform of the Urban Medical and Health System ", "Notice on Strengthen the Management of the Pilot Centralized Bidding and Procurement of Drugs in Medical Institutions", "Notice on Further Improve the Work of Centralized Bidding and Procurement of Drugs in Medical Institutions ", which carried out a nationwide drug centralized bidding and procurement model. In September 2004, national health commission of the china issued "on the further standardization of centralized bidding and procurement of drugs in medical institutions", the document stipulates that medical institutions "sales price shall not be higher than the winning bid price of 15% of the purchase and sale rate", medical organizations are less motivated to purchase due to loss of interest, even, constant opposition from drug companies and distributors has led to frequent deviation from the original policy intent. The document became a milestone document, which played an important guiding role for the main drug procurement mode in the later stage. This phase of centralized drug procurement work to the provincial level, the local government began to clarify the drug collection policy, determine the system, for china's centralized drug procurement system to build a preliminary framework.

2.2 The adjustment phase of centralized drug procurement policy (2006-2014)

The centralized bidding and procurement of drugs has achieved certain results, but the centralized procurement policy of drugs has entered the adjustment period due to the uneven development, differences in procurement policies and intermediary service costs in different provinces. Medical institutions are in a duopoly position in drug distribution, and hospitals have more price advantages and profit margins, in addition, the shortcomings of the "hospitals funding their operations with profits from overpriced drugs "medication compensation mechanism have resulted in the prices of medicines remaining at an inflated level, and high discounts and large kickbacks in the purchasing and selling process. Accordingly, the relevant departments began to rectify the order of purchase and sale, to combat commercial bribery, and in 2009 promulgated the "Opinions on Further Standardizing the Centralized Procurement of Medicines in Medical Institutions", which clearly requires the implementation of province-based online centralized drug procurement system, resumption of power, reduction of the circulation of medicines, expansion of the scope of procurement of medicines, and standardization of the rational use of medicines in medical institutions. Under the active exploration of provinces and cities, the centralized bidding and procurement of drugs has gradually shifted to centralized online procurement, emerging from the drug exchange model and the model of procurement with volume, and shanghai has taken the lead in opening the work of centralized bidding and procurement of medicines.

2.3 Rapid development phase of centralized drug procurement policy (2015-2018)

With the gradual maturity of the drug procurement model and evaluation system, china fully draw on the experience of existing centralized procurement practices. The General Office of the State Council issued the "Guidance on Improving Centralized Drug Procurement in Public Hospitals" in 2015, launching a new round of reform of the centralized drug bidding and procurement system, which proposing "unification of procurement, quantity-price linkage, and classified procurement", proposing hospitals are the subject of tenders and purchases, with categorized purchases and prices based on quantities, clarify that all drugs used in hospitals should be procured through provincial centralized drug procurement platforms, at the same time, the government improved the settlement of purchases and strengthened the comprehensive supervision of the whole process of drug procurement. Moreover, the government encourages inter-provincial joint purchasing methods, such as inter-regional and inter-specialty hospitals. The document marked the formation of a policy framework for centralized bidding and procurement of medicines at the provincial level.

2.4 Stabilization phase of centralized drug procurement policy (2018-present)

In order to break through existing policy barriers and interest fences, to establish a high-quality and efficient healthcare service system and deepen the reform of the medical and health system. National Health Commission of the China jointly with many departments, issued "National–organized centralized procurement of medicines and pilot program "in 2018, proposes that the management of tendering and procurement of medicines be undertaken at the national level, then pilot centralized procurement of medicines started in 11 cities to improve centralized purchasing and market-led drug price formation mechanisms. The General Office of the State Council issued "Opinions on the normalization and institutionalization of centralized procurement of drugs in large quantities "in 2021, the document proposes to institutionalize the centralized procurement of medicines, gradually expand the scope of medicines, pharmaceutical enterprises and medical institutions, and make a comprehensive deployment in improving the procurement rules, supporting policies, etc., and it has become a programmatic document for centralized band purchasing.

3 Multiple–streams Theory

Based on the Garbage Can Model of Cohen, March and Olsen, John W. Kingdon, a famous public policy researcher, established the multiple–streams theory, which first appeared in the book "Agendas, Alternatives, and Public Policies" published by Kingdon in 1984. The theory seeks to explain why certain issue agendas receive the attention of policy makers while others are ignored. The Problem stream of in multi-source theory are various
social problems that need to be addressed by the government and these issues are often brought to the attention of government policy makers through a series of indicators reflecting the status and importance of the project, or feedback from focus events and related projects; policy stream policy sources are some specific policy programs or policy proposals put forward by a policy community consisting of government bureaucrats, members of parliament, and scholars; adoption of their policy option depends on the technical feasibility and acceptability of its values. Political Stream include changes in national sentiment, changes in public opinion, ideology, strength of interest groups, etc., national sentiment and the administration have the greatest influence on the policy agenda, policy window in multi–stream theory are opened based on the urgency of the problem and strong political will, such as production safety incidents, political volatility and epidemics. Policy agendas are established in the problem stream and policy stream, and corresponding policy options are provided in the policy stream.

Most domestic studies on multiple–stream theory are divided into two categories, one is the review study of multiple–stream theory and the other is the application study of the theory. In terms of theoretical review studies, Jingde Chen suggests that the three dimensions of political source streams should be integrated into one concept, namely the ideology of the ruling party, to better fit the application scenario in China. Shuyan Wei and Feng Sun analyze the policy agenda setting under the network society by taking cab reform as an example, and argue that China’s policy agenda setting needs to pay attention to the role of new media, network factors in three source streams. Yang Zhijun takes "factor embedding" as the optimization path of the multiple–stream model, and proposes that the three mediating variables of focal events, policy activists and key individuals can enhance the explanatory power of China’s policy process.

Domestic research on the application of multiple–source theory. Bicheng Bai using the multiple–stream theory to analyze the dynamics of change in China’s housing policy, he argues that the five policy change dynamics can enlighten governments to promote housing policy changes: changes in the problem, increased programmatic feasibility, changes in the political situation, shocks from external events, and the accumulation of positive policy effects. And other scholars use multiple–stream theory to analyze "two separate children", "children of migrant workers to sit NCEE(national college entrance examination) locally" and land system reform etc.

In summary, multiple–stream theory has been widely used to analyze different types of policy changes, and has strong explanatory power for both policy agenda setting and policy changes. In this paper, we use the multiple–stream theory to sort out the history of centralized drug purchasing policy change, and explore what kind of force drives the policy change, in order to predict the future development direction of the policy more accurately.

4 A multiple–streams theory explanation of centralized drug Purchasing Policies

4.1 Problem Stream

First, massive commercial bribery. Whether it is a decentralized procurement model that the public hospitals are the sole purchasers, or a provincial-based bidding and procurement model, it greatly contributes to the problem of cascading transfer of benefits. On the one hand, because public hospitals are the main unit of procurement, they have a dual monopoly of buyer and seller, and medical institutions can interface directly with drug distribution companies and can spontaneously choose which drugs to use and at what price to sell to patients, however, drug distribution companies often subsidize healthcare providers in the form of rebates in order to expand their market size, and this has evolved into a routine operation in drug distribution; some medical organizations even regard drug rebates as an important source of income. This directly makes it expensive and difficult for the people’s medical care. On the other hand, in order to pursue political achievements, administrative agencies (organizing tenders) have alienated the act of tendering and purchasing into the act of price reduction, and the phenomenon of bad money driving out good money has occurred, and even induced hidden transactions between administrative agencies and tendering enterprises, which has seriously disturbed the market order. As a result, reports and public opinion on drug kickbacks and drug quality were widespread and became a hot social issue at the time, which caused the government to pay great attention and start exploring innovations in drug procurement policies.

Second, the mechanism of the health care system is not sound enough, and it is difficult for the corresponding supporting policies to match it. With the establishment and improvement of the market economy system, the original drug procurement model is unable to meet the people's medical needs. To a certain extent, the decentralized and tendered procurement models have controlled the rise in drug prices, however, after the implementation of the new health care reform, public hospitals above the second level still enjoy the policy of selling drugs at a price difference of no more than 15%, which does not effectively curb the profit-seeking motive of medical institutions in using high–priced drugs. At the same time, local governments blindly invest in and rebuild pharmaceutical enterprises for the sake of political performance, and even interfere in the approval process of foreign pharmaceutical enterprises, which in turn affects the quality of medical resources and the people's demand for medicines, and the role of the bidding and purchasing system in controlling the prices of medicines has been greatly reduced. The Government's efforts to supervise the price and quality of medicines are inadequate; the settlement methods between medical institutions and drug enterprises, and between medical insurance funds and medical institutions need to be improved.

From the different phases of the policy issues mentioned above, it can be observed that they were the
most important and specific issues in the political and economic environment of the time and were effectively identified by the government, which in turn shaped the flow of issues in the drug procurement policy.

4.2 Policy Stream

For one thing is the creative policy programs of local governments. Drug rebates caused great social concern in the late 20th century, and as a result, governments across the country began to explore the path to change. Henan Province has taken the lead in making an exploration of a centralized procurement model for medicines. Seven pharmaceutical companies are competitively selected as the fixed-point companies for procurement, then the medical institutions dock with the fixed-point companies for procurement and disclose the relevant information at the service center. This pioneered the shift from a decentralized to a centralized procurement model. During the period of rapid development of the centralized drug procurement system, policymakers in several provinces broke down the information barriers between regions and took the initiative to build alliances, which provided the prototype for the current drug procurement system, and the Shanghai government, in particular, played an important role in the collection work of the "4+7" pilot cities.

And for another, National People's Congress members and scholars in related fields have continued to pay attention to drug prices. Taking China's knowledge as an example, a search on keywords such as "centralized purchasing", "volume purchasing" and "government procurement system" reveals that the number of articles published in this field has increased year after year since the beginning of the 21st century. The number of articles published in this field has been increasing year after year since the beginning of the 21st century. In addition, the news media and social organizations have also paid close attention to drug prices and the development of healthcare. When issues come to light, "policy entrepreneurs" respond quickly and offer advice, creating a strong policy stream that drives the policy agenda.

4.3 Political Stream

First, the people's demand for medical services has gradually risen, and dissatisfaction with the current medical system and services is running high. The disorderly expansion of capital and the monopoly of multi-interested parties continue to push up the price of drugs and consumables, resulting in the people's burden of medicine, "difficulties and high expense in medical care" has become a social pain point, which is contrary to the original intent of the policy of standardizing prices. And the network era for the public to provide a more convenient channel to voice, so that focus events spread very fast, dissatisfaction about the high fees charged by medical institutions pervades the country.

Second, standing firm on the people's position is an important guarantee for the continued promotion of reform of the drug procurement system and the most distinctive value orientation of governance. Since 2012, China has adhered to the people-centered development ideology, focusing on solving the people's most realistic interests and improving the quality of medicines and the safety of medicines. At the same time, the government has taken multiple measures to gradually improve the market-led drug price formation mechanism, and has achieved significant results in promoting the supply-side reform of medical services. This reaffirms the importance that the government attaches to improving people's well-being, and lays an important political foundation for the nationwide promotion of the overall path of "state organization, alliance procurement, platform operation".

Third, the government has changed the philosophy of governance in China, with the goal of building a service-oriented government for people. They have optimized its workflow and improved their working methods in administrative approval procedures, the bidding process, procurement management and drug quality supervision, in order to provide high-quality services to enterprises, medical institutions and the people. At the same time, the government has focused on the responsibilities of all parties involved in the supply of medical services, to rectify and investigate illegal behaviors, and clean up the atmosphere of the medical industry. The shift in governing philosophy has led to an important role for administrative forces in agenda building, providing an opportunity to open the window of opportunity for problems.

The two factors that have the greatest impact on the policy agenda in the political source flow are national sentiment and political attitudes. Public sentiment changes as a result of the development of a particular issue, while the ability of a particular issue to drive the policy agenda is influenced by the governing philosophy of the rulers, who will move the policy agenda quickly if they are concerned about the event, and vice versa.

4.4 Policy-Window

Policy windows are opportunities for proponents of proposals to bring particular issues to the forefront. They include both political and issue windows. The political window opens in response to shifts in the political situation, and the issue window opens in response to changes in the focal event, which is an important force in the opening of the policy window. Both provide opportunities for policy change. In terms of the development of China's drug procurement policy, the strong reaction of focal events and the change of the top level of the government at each stage triggered the switch of the policy window, realizing the fusion of the window and the source stream, which in turn led to the turnover of the old and the new policies.

In summary, this paper analyzes China's drug procurement policy change through the multiple-sources theory, it can be clearly found that the change of policy is a multi-stage development, the current policy is not directly generated, but in the process of policy change in the source flow of the problem, the source flow of the policy, the source flow of the policy around the special
issue of the dynamic advancement of the explanation of the logic: the three streams of the convergence of the three streams—policy window opens to the establishment of the policy agenda—the policy change occurs until the emergence of a new political and economic environment of a new special problem, a new round of policy change continues to unfold, as shown in the following figure 1.

![Figure 1. Pathways of policy change](image)

5 Conclusion and discussion

This paper reviews the historical change of drug procurement policy, and then analyzes it by using multiple-streams theory for answering the inner mechanism of drug procurement policy change.

We found that: with the change of history and the evolution of the system, the drug procurement policy has been adapted to the national economic system and the national development strategy, and forming the path of "decentralized procurement—tender procurement—centralized procurement "; facing the opportunities and challenges of the global digital economy, problem stream, policy stream and political stream of each round of change has shown new changes; furthermore, the concept of "whole—process people's democracy "provides more practice fields for drug procurement policy, when "policy entrepreneurs " (the media, the Internet, and NPC deputies) commit to the policy agenda, they not only increase the government's awareness of national sentiment, but also contribute to the formation of a policy agenda for drug procurement.

The current national centralized procurement is gradually institutionalized and a market—led price formation mechanism is gradually established. The accelerated development of population aging has brought great impact and challenges to China's healthcare service system, therefore, the other purpose of this paper is to predicts that the future will focus on solving the problems of healthcare service supply and health insurance fund payment, and promote the industry's high-quality development around value innovation and market innovation.

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