

# Analysis of Current Situation and Countermeasures of Drug Supply Chain of Centralized Procurement in China

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**Abstract:** After the implementation of centralized drug bidding and procurement, drug prices showed a downward trend, but also exposed some problems, based on the centralized procurement process, aiming at the problems existing in the operation of the supply chain of centralized drug procurement in the current market, put forward corresponding suggestions for the shortcomings of the operation mode of the supply chain of centralized drug procurement, and effectively under the bidding and procurement system, Make pharmaceutical enterprises responsible for patients, the environment and the government, and provide reference for the construction of China's drug supply chain management system.

**Keywords:** Centralized drug purchasing; drug supply chain strategy.

## 1. Introduction

Centralized drug procurement means that medical institutions at all levels purchase needed drugs in the form of bidding through drug collection organizations. The procurement objects are mainly drugs with large clinical dosage, high procurement amount, and obvious volume-based price exchange effect after centralized procurement.[1] This procurement method can reduce drug prices and improve procurement efficiency through scale efficiency and bargaining power. China is in a critical period of medical system reform, and drug centralized procurement is regarded as one of the important ways to optimize the allocation of medical resources, reduce the burden on patients, and promote the reform of the medical and health system. With the gradual implementation of the policy, centralized drug procurement has become a bellwether for the development of the pharmaceutical industry, and has a profound impact on the pharmaceutical industry structure, market competition pattern, and the construction of the medical insurance system. In this context, this paper aims to explore the significance, principles, implementation paths, and possible challenges and solutions of centralized drug procurement, aiming to provide theoretical reference and practical guidance for decision makers, pharmaceutical enterprises and practitioners, jointly promote the smooth implementation of centralized drug procurement, and contribute to the development of China's medical and health undertakings.

## 2. The Basic Situation of Centralized Drug Procurement

Ensuring people's basic drug needs, ensuring drug safety, and safeguarding people's health rights and interests are an important goal and task of deepening the reform of the medical and health care system, and it is also a project of great significance for people's livelihood. The Chinese government has issued a number of relevant policies and supporting measures to ensure the supply of drugs. In order to regulate the procurement behavior of medical institutions and improve the transparency of procurement, the Chinese government promulgated the "Several Provisions on the Pilot Work of Centralized Bidding and Procurement of Drugs in Medical

Institutions" in 2000. In September 2004, in order to further optimize the centralized bidding and procurement of drugs, The State Council of China promulgated the "Several Regulations on Further Regulating the Centralized Bidding and Procurement of Drugs in Medical Institutions", and in 2019 China began to implement a nationwide centralized drug procurement policy. By December 2021, China has carried out six batches of centralized procurement of state-organized drugs involving 225 varieties, with an average price reduction of more than 50%.[2] While drug prices have fallen significantly, they have created new supply chain challenges. The sharp decline in the profit margin of pharmaceutical manufacturers has led to the frequent occurrence of low-price pharmaceutical bid-winning enterprises using low supply limits and shot-filled and low-quality drugs safety problems, such as the outbreak of such incidents as Sichuan Shuzhong Pharmaceutical incident, Heilongjiang injection incident and India Sun Bicalutamide tablets. So far, the contradiction between corporate interests and public health has intensified. The safety of public drug use cannot be guaranteed, which has a very bad impact on society.

## 3. The Existing Drawbacks of Drug Centralized Procurement Supply Chain

### 3.1. Quality issues of drugs

The quality of pharmaceuticals is directly related to the safety and health of patients regarding medication use. The centralized procurement policy prioritizes passing the consistency evaluation as a precondition, thereby filtering generic drugs.[3] However, in the centralized drug procurement process, the national centralized procurement currently primarily employs a low-price bidding method. That is, based on the drug consistency evaluation, the low price has become the most crucial competitive factor. Under this procurement system, the low-price bidding model carries some potential risks due to price pressure and fierce competition. For example, pharmaceutical companies might resort to using cheaper raw materials or reducing production costs to lower drug manufacturing expenses, which leads to variability in the quality of the produced generic drugs, thereby affecting the quality and safety of the medications.

### **3.2. Drug supply issues**

The supply of the centralized drug procurement supply chain is a complex and critical issue.[4] directly impacting the quality, price, and stability of drug supply. For instance, during the centralized procurement process, due to low prices or other reasons, some pharmaceutical companies might opt to halt their supply, leading to shortages of certain drugs and affecting patient demand for medications. Secondly, in efforts to cut costs and meet low-price bids, some pharmaceutical companies might lower the quality standards of their drugs, resulting in the inability to supply drugs on time. Lastly, due to information asymmetry in centralized procurement, poor information transmission and communication among all links in the supply chain can lead to information asymmetry, affecting the accuracy and timeliness of supply.

### **3.3. Regional differentiation issues in drug supply**

Currently, in addition to the national centralized drug procurement, various regions in our country have also successively carried out local-level drug procurement activities, such as independent local procurement and inter-provincial alliance centralized bulk procurement. These local procurement activities aim to reduce drug procurement costs, improve the efficiency of drug use, and promote the rational allocation of medical resources through centralized procurement. However, due to differences in procurement entities, drug catalogs, and winning bid prices among different regions, there is significant variability in drug centralized procurement policies across regions. This variability may lead to differences in drug prices across different areas. Furthermore, the demand for drugs varies among patients. Centralized procurement has significantly reduced the prices of generic drugs, meeting the medication needs of general patients. However, for patients with severe diseases or those who have higher quality requirements for drugs, they prefer reasonably priced imported drugs because these drugs offer higher quality assurance, better therapeutic effects, and fewer side effects.

## **4. Measures and Recommendations for Addressing Existing Issues in The Centralized Drug Procurement Supply Chain**

### **4.1. Improve the pricing mechanism and strengthen drug quality supervision**

The key issue in centralized procurement lies in establishing a reasonable, fair, and equitable pricing mechanism.[5] First, the effectiveness of price control. To effectively promote volume-based procurement, it is necessary to further refine the pricing mechanism to ensure reasonable pricing and fair competition. Second, the strengthening of quality supervision. Although suppliers are audited for qualifications and drug quality is randomly inspected during the centralized procurement process, some substandard drugs still enter the market. Therefore, it is essential to further strengthen the supervision of drug quality, increase the enforcement efforts of regulatory authorities, and ensure the quality and safety of drugs. At the same time, health departments and the National Medical Products Administration should enhance communication. The regulatory authorities need to ensure the coordination and

cooperation between policy implementation and supervision, establish a rapid response emergency and traceability system. When there are abnormal changes in the prices of raw materials for drugs, timely measures should be taken to intervene. By strengthening the supervision of drug quality and increasing the enforcement efforts of regulatory authorities, we can ensure the quality and safety of drugs, protecting patients' rights to medication.

### **4.2. Clearly define responsibilities to ensure timely drug supply**

To ensure timely drug supply, firstly, at the source, it is necessary to strengthen the qualification review of the winning pharmaceutical companies, including capacity, inventory, and supply status reporting and on-site verification to ensure compliance with the standards. Secondly, further standardize the pharmaceutical supply process, clarify the supervisory responsibilities of each department in each process, strengthen spot check mechanisms, subdivide responsibilities, and ensure detailed implementation. Finally, develop alternative plans, the risks in aspects such as supplier qualifications, delivery times, and scale in the centralized procurement supply chain need to be managed more meticulously. Establish a sound supplier evaluation and risk management mechanism to promptly identify and resolve issues in the supply chain, ensuring the stability and reliability of drug supply.

### **4.3. Unified responsibility and reduce price differentials for the same drugs in different regions.**

Due to differences in purchasing entities, drug catalogs, and winning bid prices among different regions, there are significant disparities in centralized drug procurement policies across regions. To address this issue, it is recommended to increase pilot regions and types of drugs, expand the policy coverage, unify regulatory bodies, abandon the "lowest price linkage" strategy, refine rules based on actual circumstances, establish a fair and efficient procurement system, enhance overall planning, and reduce regional disparities. It is important to consider clinical needs and consistency evaluation when expanding the range of procured drugs, giving priority to including originator drugs with prices higher than international levels or significant price differences compared to generic drugs. This work can be implemented at national, provincial, and prefectural levels.

## **5. Summary**

In summary, the centralized procurement of pharmaceuticals involves a highly complex supply chain, encompassing multiple links and participants, including manufacturing enterprises, purchasing units, distributors, and medical institutions. Throughout the centralized procurement process, it is necessary to coordinate the interests of all parties, ensure the quality of pharmaceuticals, control costs, and guarantee the timely and effective delivery of pharmaceuticals to medical institutions to provide necessary pharmaceutical support for patients. This calls for robust management and oversight mechanisms to address various challenges and risks in the supply chain, ensuring the efficient operation of the entire procurement process.

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