



# The Impact of Price negotiation on the Pricing of innovative Drugs in China

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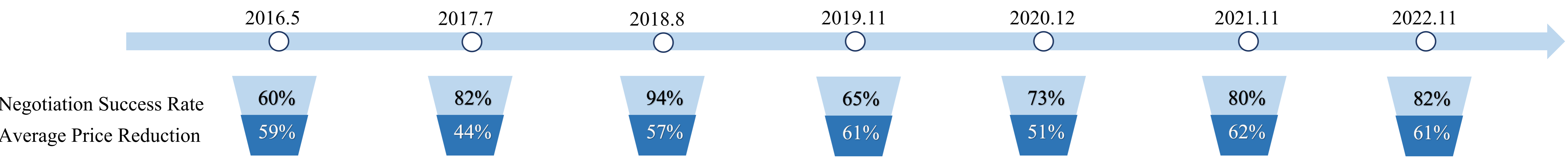
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## Introduction

- To reduce the prices of innovative medicines and achieve a value-based strategic purchase, China introduced a price negotiation mechanism in 2016 for certain expensive drugs, allowing them to be included in the national reimbursement drug list after successful negotiations.
- The aim of this article is to assess the possible effect of price negotiations and investigate the determinants of the prices of innovative medicines.

## Methods

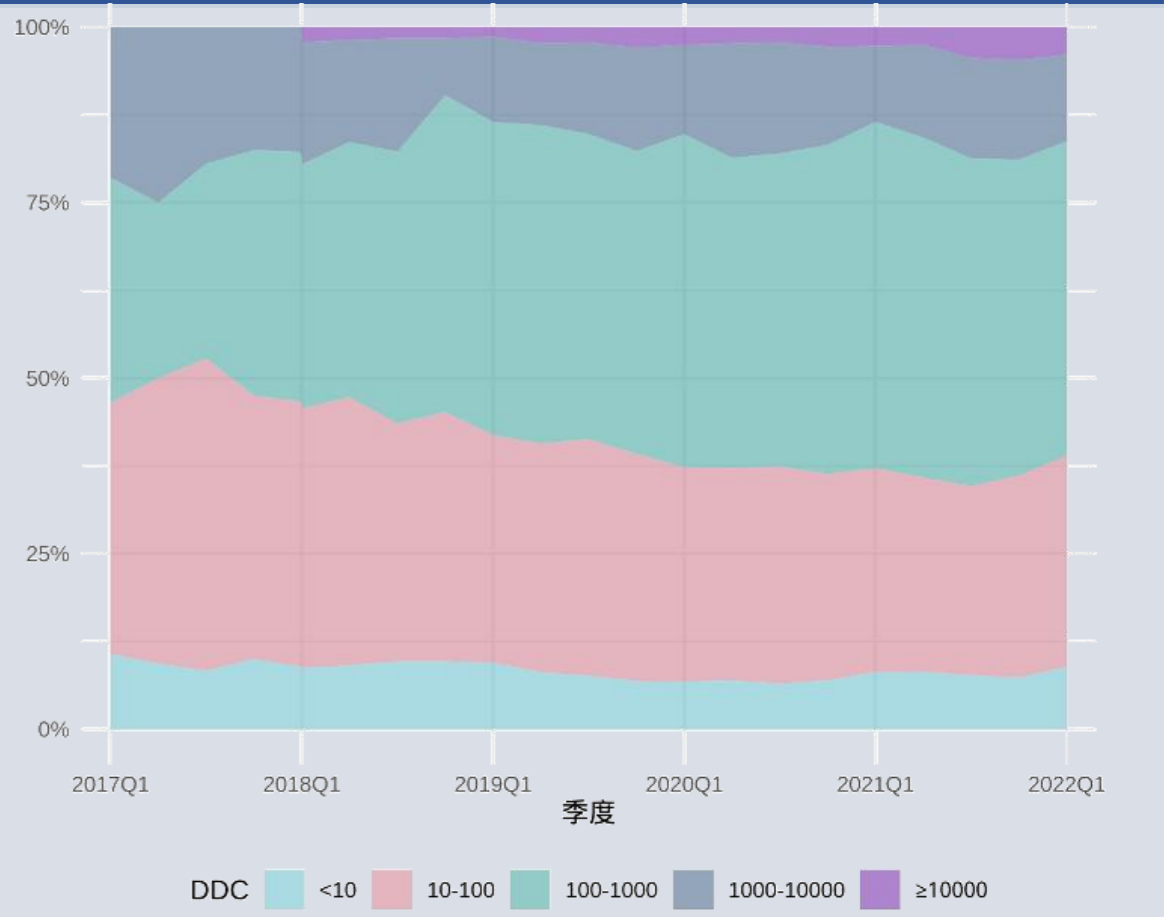
We identified newly marketed drugs from 2013 to 2021 using the Multi-source Database. Price data from Q1 2017 to Q1 2022 were sourced from CMH, a database with quarterly hospital drug sales information. A total of 265 innovative drugs were categorized into two groups for analysis: negotiated and non-negotiated drugs. Drug prices were calculated based on the Defined Daily Dose cost (DDDC). Multiple regression models were applied to explore the factors influencing drug prices.



## Results

### ➤ Current Status of Innovative Drug Pricing

- Of the 265 new drugs, 122 have already been included in price negotiations. Since 2017, the **average Daily Drug Cost (DDC)** for innovative drugs has **risen by 154.40%**, while the **median DDC** has **increased by 57.10%**.
- The distribution of DDC for innovative drugs over time indicates that the largest proportion falls within the 100 to 1000 RMB range, and this proportion has been increasing year by year.



### ➤ Subgroup Analysis of Negotiated vs. Non-Negotiated Innovative Drugs

- The DDC for **non-negotiated** innovative drugs has shown an **upward** trend, while the DDC for **negotiated** innovative drugs has been **decreasing**.
- A **majority (59.50%–77.78%)** of the negotiated drugs are priced within the 100-1000 RMB range.



### ➤ Analysis of Factors Influencing Innovative Drug Pricing

- Price negotiations play a key role in the reduction of the average DDC for innovative drugs (p=0.000).
- **Non-orphan drugs** and **non-Class I new drugs** tend to have higher DDCs (p=0.024; p=0.000), suggesting a **poorer correlation** between price and value.
- The availability of generic drugs is **negatively correlated with** the price of the original drugs (p=0.009), which indicates that the existence of competitors increases market competition and drives down prices.

### ➤ Analysis of Factors Influencing Innovative Drug Pricing

- In the negotiated drug subgroup, **contract renewal** or **inclusion in the National Reimbursement Drug List** was identified as a significant factor contributing to price reductions (p=0.000).
- Rare disease drugs have higher average DDCs than non-rare disease drugs (p=0.000), indicating that price negotiations have **improved the correlation** between drug value and price to some extent

Characteristic	Total			Subgroup of Negotiated Drugs		
	β	95% CI	p-value	β	95% CI	p-value
Negotiation Status						
NO						
YES	-1,447.0	[-1,888.5, -1,005.6]	0.000*			
Renewal						
NO						
YES	-505.20	[-1,021.6, 1,115.7]	0.055	-146.02	[-213.10, -78.935]	0.000*
Orphan Drug						
NO						
YES	-659.54	[-1,233.0, -86.088]	0.024*	281.83	[176.93, 386.72]	0.000*
Category 1 Innovative Drug						
NO						
YES	-1,653.6	[-2,108.9, -1,198.2]	0.000*	-311.77	[-389.36, -234.19]	0.000*
Competition with Same Generic Name						
NO						
YES	-998.15	[-1,743.3, -252.98]	0.009*	-382.65	[-506.13, -259.17]	0.000*
Country						
DOMESTIC						
IMPORT	-471.47	[-1,022.2, 79.223]	0.093	-196.53	[-278.61, -114.46]	0.000*

## Conclusions

- The proportion of **high-cost** medications approved for launch in China has been **on the rise**.
- Price negotiations have been instrumental in achieving **price reductions**.
- The correlation between the price and value of innovative drugs has been improved through price negotiations.

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