What Factors Affect Social Medical Insurance Drug Listing Decision-Making in China? Evidence from the National Drug Price Negotiation in 2020

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BACKGROUND

- China has adopted health technology assessment (HTA) as the key instrument in drug listing decision-making processes for social health insurance before the final price negotiation.
- A number of drugs that were recognized to have high clinical value and relatively higher prices, were selected by experts to enter into a price negotiation between the purchasers and the manufacturers, and were finally included in the National Medical Insurance Drug List (NMIDL) if the negotiation reached an agreement (Figure 1).
- However, the relative importance of criteria for reimbursement decisions in China is not made explicit.

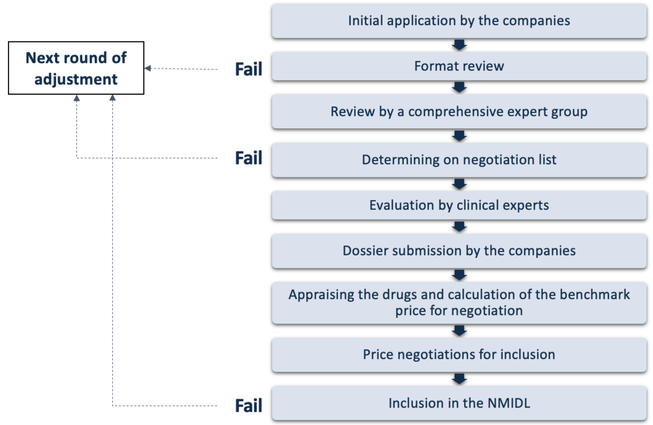

Figure 1. Procedures for the NMIDL Negotiation and Inclusion

OBJECTIVES

- To identify the factors that influence the National Medical Insurance Drug List (NMIDL) decisions.

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METHODS

- Publicly available information about exclusive drugs that applied for NMIDL price negotiations in 2020 was reviewed.
- For each drug, proxies for drug basic characteristics, innovation value, therapeutic indications and economic burden were collected (Table 1).
- The final reimbursement decisions made by the National Health Care Security Administration (NHSA) were dichotomized into 'listing' or 'rejection'.
- Chi-square tests and logistic modeling were used to determine factors associated with reimbursement decisions.

Table 1. included indications and their proxies

Indications	Proxies
basic characteristics	drug type, preparation form, type of manufacturer
innovation value	approved time, classification defined by Chinese government, number of comparators already in the NMIDL, urgently needed overseas new drugs
therapeutic indications	rare disease, anticancer drug, chronic disease
economic burden	annual treatment costs

RESULTS

- Of the 143 applied drugs, 59 (41.3%) were finally successfully listed in the NMIDL.
- Three characteristics of drugs were strongly associated with reimbursement decisions (Figure 2 , Table 2):
  - ✓ innovative drugs ,
  - ✓ drugs for chronic diseases ,
  - ✓ drugs with annual treatment cost higher than 3 times the per-capita GDP.

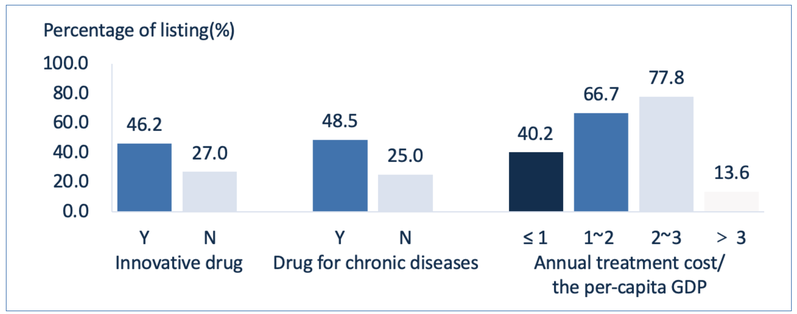

Figure 2. Significant characteristics of drugs associated with reimbursement decisions in chi-square tests

Table 2. Results of logistic regression analyses

Variable	Reference category	OR	P value
Drug type			
biological product	chemical drug	0.4909	0.149
Preparation form			
compound preparation	simplex preparation	0.7987	0.695
Manufacturer type			
multinational company	domestic company	0.4233	0.134
Time of first listing in China			
2020	before 2020	0.7620	0.557
Innovative drug			
yes	no	5.1695	0.010*
Urgently needed overseas new drugs			
yes	no	0.4673	0.248
Drug for rare diseases			
yes	no	0.9493	0.949
Anticancer drug			
yes	no	1.0866	0.896
Drug for chronic use			
yes	no	4.5221	0.004*
Number of similar drugs already in the NMIDL			
≥1	0	0.6259	0.413
Annual treatment cost			
>3 times the per-capita GDP	≤3 times the per-capita GDP	0.1336	0.012*
Constant		0.3193	0.088

CONCLUSIONS

- Being an innovative drug was the strongest positive predictor of reimbursement because of better clinical value.
- Drugs for chronic use met extensive clinical needs, and this was thus an important factor affecting reimbursement decision making.
- High annual treatment cost was an important reason for rejection due to the excessive financial burden on medical insurance funds.
- Key elements of HTA, including disease need, clinical value, and affordability, are highly correlated with drug listing decisions.

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Project supported by TCC6, World Bank ;
Funders had no role in study design, data collection and analysis, decision to publish, or preparation of the manuscript.

Acceptance Code: HTA25;
Presented at: ISPOR 2022; May 16, 2022