



# Design of Inclusive Health Insurance for Low-Income Students in Fengtai District, Beijing

Zijia Yi

Central University of Finance and Economics, Beijing, China  
yichao1667@163.com

**Abstract.** Inclusive health supplementary insurance is a key component of China's multi-level medical security system, which can accurately address the problem of excessive medical expense burden on primary and secondary school students from low-income families. Taking primary and secondary school students from low-income families in Fengtai District as the research sample, this paper, in combination with relevant policy requirements, sorts out the current situation of medical security for this group. Based on the calculation data of target objects and research cases, it analyzes the prominent shortcomings of the current security system. Following the core idea of low payment, low deductible, high adaptability, and strong bottom-line protection, this paper designs an exclusive product scheme from five dimensions: protection scope, product liability, premium financing, insurance participation and claim settlement, and long-term mechanism, and synchronously formulates the implementation path and supporting measures, providing theoretical and practical reference for Fengtai District to resolve children's medical risks and strengthen the social security network.

**Keywords:** Low-income Families, Primary and Secondary School Students, Universal Health Supplement Insurance, Medical Security.

## 1 Introduction

Fengtai District, as a typical urban-rural fringe area in Beijing, has low-income families (defined as those with a per capita monthly income of less than 2,540 yuan in 2025 and family assets meeting the minimum living guarantee conditions in Beijing, including some non-Beijing households with valid residence permits<sup>[1]</sup>) that are spatially distributed in a pattern of "scattered in the central urban area and relatively concentrated in the near suburbs". Students from these families in the compulsory education stage are listed as key objects of regional social security. It is estimated that there will be about 1,100 such students in Fengtai District in 2025<sup>[2][3]</sup>. Although basic medical insurance has been fully covered, the gap in protection remains significant when it comes to the high out-of-pocket medical expenses caused by major diseases. Although the current medical security system has established a "three-level protection" system of basic medical insurance, critical illness insurance and medical assistance, there are still structural shortcomings such as weak coverage of expenses outside the medical in-

insurance directory and insufficient adaptability of commercial health insurance products. Taking the "Beijing Universal Health Insurance" in 2026 as an example, the premium is 195 yuan per person per year, with a deductible of 15,000 yuan<sup>[4]</sup>, and no differentiated participation policies or exclusive protection terms have been set for low-income family students. Therefore, it is urgent to develop customized supplementary commercial medical insurance products for this specific group to effectively alleviate their medical burden, prevent the risks of "falling ill due to education and falling into poverty due to illness"<sup>[5]</sup>, and thereby enhance the precision, accessibility and sustainability of the social security system in Fengtai District.

## **2 Definition of Relevant Concepts**

### **2.1 Primary and Secondary School Students from Low-Income Families in Fengtai District**

The students who are currently studying in the compulsory education stage of primary and secondary schools within the jurisdiction of Fengtai District, with their household registration or actual residence in Fengtai District, and have been recognized by the civil affairs department as meeting the low-income family standards of Beijing, total approximately 1,110.

### **2.2 Inclusive Health Supplementary Insurance**

It is a medical supplementary insurance led by the government and operated by commercial insurance companies, mainly targeting ordinary people, especially those with low incomes. Its most prominent features are low entry barriers, affordable premiums, wide coverage, and convenient reimbursement.

### **2.3 Precise Bottom-Line Protection**

For the specific vulnerable group of primary and secondary school students from low-income families, by optimizing the design to lower the thresholds for participation and claims, expanding the coverage scope, and precisely addressing the economic pressure on families caused by sudden medical risks, it aims to solve problems such as poverty due to illness and borrowing for medical treatment.<sup>[6]</sup>

## **3 Current Situation and Existing Shortcomings**

### **3.1 Composition of the Current Medical Security System**

#### **1. Basic coverage**

The target group has achieved full coverage of basic medical insurance for urban and rural residents. In 2026, the premium of 435 CNY will be fully subsidized by the government. The deductible for outpatient and emergency reimbursement is 550 CNY,

with a ratio of 50%, and the deductible for inpatient reimbursement is 1,300 CNY, with a ratio of 75% to 80%. The participation rate exceeds 99%.

#### 2. Bottom-Line Protection Level

All target groups are included in the medical assistance scope. After basic medical insurance reimbursement, the assistance ratio for compliant out-of-pocket expenses is no less than 70%, but the expenses above the assistance limit need to be borne by the family itself.

#### 3. Supplementary Protection Level

Participants can voluntarily join the Beijing Universal Health Insurance, which covers both medical insurance and other expenses. However, no exclusive preferential treatment is set up, and the enthusiasm of the target group to participate in the insurance is low.

### 3.2 Core Characteristics of Current Protection Situation

1. Comprehensive basic coverage: Relying on the linkage of medical insurance and medical assistance, the target group does not need to bear the cost of basic medical insurance, and the cost of diagnosis and treatment of common daily diseases is initially covered<sup>[7]</sup>.

2. Low Coverage Level of Supplementary Protection: Constrained by multiple factors such as limited premium affordability and insufficient policy awareness, the participation rate of this target group in commercial supplementary medical insurance is only 28.6%, significantly lower than the regional average. The compliant medical expenses outside the basic medical insurance directory of this group have not been effectively covered by the existing protection mechanism, leaving a clear protection gap.

3. Significant medical burden gap: When major diseases or serious accidents occur, the proportion of out-of-pocket expenses not covered by medical insurance is high. Even with multiple layers of protection, families still have to bear high self-payment costs, and some families are trapped in a difficult situation when seeking medical treatment<sup>[8]</sup>.

### 3.3 Existing Core Shortcomings

1. Inadequate compatibility of the existing supplementary insurance: A premium of 195 CNY and a deductible of 15,000 CNY are beyond the affordability and needs of the target families. There are no exclusive benefits, and the participation rate is low, making it difficult to play a safety net role<sup>[9]</sup>.

2. Lack of targeted coverage: The insurance products do not align with the characteristics of the children's group, pay insufficient attention to accidental injuries and major diseases that are highly prevalent among children, and fail to cover the essential expenses outside of medical insurance<sup>[10]</sup>.

3. Single financing mechanism: Relying solely on family out-of-pocket expenses, without establishing multiple channels such as financial subsidies and social donations,

the payment capacity of target families is limited and it is difficult for them to continue to participate in insurance<sup>[11]</sup>.

4. Complicated claims process: Mainly online claims, suitable for the digital literacy of parents from low-income families, insufficient offline outlets and complex review, affecting the enthusiasm for participation.

5. Insufficient interdepartmental coordination: Data from different departments are not interconnected, the guarantee system is poorly connected, there are overlapping or blank areas, and it is difficult to form a bottom-line synergy.

## **4 Design Principles and Objectives of Inclusive Health Supplementary Insurance**

### **4.1 Core Design Principles**

1. Precise bottom-line principle: Target 1,110 individuals without health or household registration thresholds, focus on poverty risks such as serious illness and accident, and relieve high self-payment pressure.

2. Low fee and low deductible principle: In line with the family's payment capacity, set a premium of 60 CNY per person per year and a deductible of 500 CNY to achieve "minor illnesses covered and major illnesses covered".

3. The principle of matching essential needs: Prioritize the coverage of essential expenses such as special drugs for children and accidental medical consumables outside of medical insurance, cover the high incidence risk of children, and fill the coverage gap.

4. Convenience and efficiency: Simplify the enrollment and claims process, implement school agency, no application required, one-stop settlement, retain offline channels, and reduce costs.

5. Sustainability: Build a diversified financing model, establish a risk reserve and profit and loss adjustment mechanism to ensure the long-term stable operation of the product.

### **4.2 Design Objectives**

1. Short-term goals: To achieve 100% coverage rate for the target population within 2026, keep the out-of-pocket rate for major illnesses within 10%, and eliminate the risk of medical treatment due to poverty.

2. Medium-term goals: Build a four-tier linked security system, achieve full coverage of medical insurance and out-of-pocket expenses, and shorten the time for claims settlement to within 3 working days.

3. Long-term goal: Establish a regular operation mechanism, create replicable "Fengtai experience", and provide reference for similar regions.

## 5 Specific Scheme Design

### 5.1 Precise Definition of Protection Objects: Lock the Scope and Achieve Full Coverage Without Thresholds

1. Core Objects: Students enrolled in primary and secondary schools in Fengtai District whose families have been identified as low-income by the civil affairs department (including non-Beijing household registration families with valid certificates). The benchmark number of people in 2026 is 1,110, including special groups such as distressed children.

2. Insurance Participation Thresholds: No restrictions on age, health status or household registration are set; only low-income identification and student status are taken as the basis to ensure equal insurance participation.

3. Dynamic Management: Relying on the data sharing of three departments, an information ledger is established to update the information on insurance participation and termination of protection in real time, so as to achieve accurate adaptation.

### 5.2 Design of Protection Liabilities: Targeted Efforts to Cover Rigid-Demand Risks

The accumulated annual insurance coverage is 2 million CNY (adapted based on the benchmark of 1,110 people, with the protection intensity synchronously matching the group scale), including three core liabilities and four free value-added services, which are in line with the needs of the target group.

1. Protection for Self-Paid Inpatient Medical Expenses Outside the Medical Insurance Catalog (Insurance Amount: 1 Million CNY): Covers children's special self-paid drugs, high-end inspections, consumables, etc., outside the medical insurance catalog during hospitalization, with a deductible of 500 CNY and a reimbursement ratio of 85%; 20 high-incidence major diseases in children are covered without a deductible, with a reimbursement ratio of 95%.

2. Protection for Self-Paid Outpatient and Emergency Medical Expenses (Insurance Amount: 500,000 CNY): Covers self-paid expenses outside the medical insurance catalog caused by accidents and common diseases, with a single claim deductible of 30 CNY (accumulated annual deductible of 100 CNY) and a reimbursement ratio of 75%; outpatient and emergency expenses caused by accidents are covered without a deductible, with a reimbursement ratio of 80%.

3. Protection for Accidental Disability and Death (Insurance Amount: 500,000 CNY): A one-time compensation of 100,000 CNY is paid for accidental death; compensation for disability is paid in proportion to the disability grade (500,000 CNY for Grade 1 disability), providing bottom-line economic compensation.

4. Value-Added Services: One free health check-up per year, unlimited online pediatric expert consultation, professional medication guidance services, and green channel for major illness medical treatment.

### **5.3 Premium Pricing and Multi-Source Financing Design: Low Cost to Reduce Burden and Multi-Party Bottom-Line Protection**

1. Premium pricing: Based on medical risk, coverage responsibility and family affordability, set the individual annual premium at 60 CNY and keep it stable for three years.

2. Diversified financing: Construct a model of "financial subsidy + social donation + family contribution" with an annual total premium of 66,600 CNY (based on 1,110 people), as follows: financial subsidy 46,620 CNY (70%), social donation 13,320 CNY (20%), family contribution 6,660 CNY (10%), and 10% is set aside as a risk reserve fund.

3. Payment method: The school collects on behalf of the students, supports community assistance in payment, and families in extreme poverty can make zero payment (financial guarantee).

### **5.4 Insurance Participation and Claims Process Design: Convenient and Efficient, Suitable for Low-Income Families**

1. Enrollment process: Implement "no application required, unified agency", determine the enrollment list through data matching by the civil affairs and education departments, the insurance company automatically registers, and the policy is precisely delivered to the family.

2. Claims process: "One-stop settlement + claim without application + offline guarantee", simultaneous settlement at designated hospitals within the district, automatic calculation of claims for out-of-town medical treatment, and full-process assistance provided by offline outlets.

### **5.5 Underwriting and Operational Model Design: Government Guidance, Commercial Operation, Professional and Controllable**

1. Underwriting model: The government publicly tenders and selects experienced and well-serviced commercial insurance institutions to undertake the project for a period of 3 years, which can be renewed upon passing the assessment.

2. Operational requirements: The undertaking institution shall establish a dedicated team, set up a special account, regularly submit data and operational reports, and be subject to full supervision.

3. Risk adjustment: Set aside a 10% risk reserve fund and establish a profit and loss adjustment mechanism to ensure that the product is not loss-making and sustainable.

## **6 Product Implementation Path and Safeguard Measures**

### **6.1 Phased Implementation Path**

1. Preparatory stage (1-3 months): Establish a task force to complete scheme argumentation, data platform construction, tendering and donation fundraising.

2. Pilot phase (4-6 months): Pilot in areas with a high concentration of low-income families, covering approximately 680 students in the pilot area (based on a benchmark of 1,110), and optimize processes and plans.

3. Full rollout phase (7-12 months): Achieve 100% coverage across the region, expand donation channels, and optimize value-added services.

4. Long-term operation phase (after one year): Dynamically optimize coverage and fundraising, summarize experience, and output the "Fengtai model".

## **6.2 Five Safeguards: Ensure the Product Takes Effect**

1. Organizational Assurance: Establish a special leading group, clarify departmental responsibilities, and implement responsibilities layer by layer to ensure full coverage of 1,110 target students.

2. Policy guarantee: Introduce implementation measures, optimize connection policies, incorporate work into the assessment of people's livelihood, and push for implementation.

3. Data and technology support: Build a data sharing platform, break down information barriers, and optimize the connection between online and offline services.

4. Financial support: Financial subsidies are included in the annual budget, a long-term donation mechanism is established, and financial supervision and auditing are strengthened.

5. Publicity and service assurance: Conduct precise publicity, strengthen personnel training, smooth consultation and feedback channels, and improve service quality.

# **7 Conclusions and Prospects**

## **7.1 Research Conclusions**

This paper clarifies that there are five major shortcomings in the medical security of the target group in Fengtai District: poor matching of supplementary insurance, narrow coverage, single financing, cumbersome process, and insufficient interdepartmental coordination. The core advantages of the designed exclusive supplementary insurance are its strong demand adaptability, low payment pressure, convenient service, and sustainable operation through diversified financing and risk adjustment mechanisms, which can make up for the shortcomings of protection, build a four-level linkage system, prevent poverty due to illness, and safeguard the health of children.

## **7.2 Research Outlook**

In the future, the list of guarantee responsibilities can be dynamically optimized, financing channels can be broadened, departmental collaboration and policy alignment can be deepened, implementation effect evaluations can be carried out, product design can be continuously improved, and a replicable "Fengtai model" can be output to provide references for similar regions.

## References

1. Beijing Municipal People's Government. Measures for the Implementation of Social Assistance in Beijing (Order No. 282 of the Beijing Municipal People's Government) [Z].2018-05-04.
2. Education Commission of Fengtai District, Beijing. Student financial aid in Fengtai District for the spring semester 2025. [EB/OL].2025-07-04.
3. Beijing Fengtai District Education Commission. Student financial aid in Fengtai District for the spring semester 2024. [EB/OL].2024-07-25.
4. 2026 Beijing Universal Health Insurance Enrollment Guide [Z]. Beijing Municipal Medical Security Bureau, 2025.
5. Xue Bai, Jia chun Luo, Ke Luo. Analysis of the Integration and Optimization Path of the Basic Medical Insurance System for Urban and Rural Residents from the Perspective of Justice Theory—Based on a Field Survey in Zunyi City [J]. Journal of Wuxi Institute of Technology. 2023,22(2) 36-41.
6. Lei Chu. Research on the Improvement and Optimization Strategies of Rural Health Insurance Services under the Integration of Urban and Rural Resident Medical Insurance [J]. Theory Journal 2022(3) 141-149 .
7. Gong Cheng, Yan Gui. Reform of the Medical Security System with Chinese Characteristics and High-Quality Development [J]. Academic Research 2020(4) 79-86
8. Shu guang Shen. Health Care Reform and Development in China in a New Era[J]. Chinese Social Security Review 2017,1(2) 40-53
9. Cong chao Shen, Jie mei Huang. Research on the Insurance Dilemma of Flexible Employees under the Background of New Business Forms[J]. Economic Research Guide 2021(26) 53-55
10. Yuan yuan Dong, Lin Zhang, Ying lei Yang, etc. A comparative study on children's basic medical insurance system and policies in four municipalities in China [J]. Journal of Shanghai Jiaotong University(Medical Science) 2018,38(6) 670-675
11. Rui mei Li, Ruo ling Li. A Review of Medical Insurance for Primary and Secondary School Students in Urban Areas [J]. Chinese General Practice Nursing 2009,7(36) 3344-3344.

**Open Access** This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

