

Model Analysis on Budget Impact and Patients’ Burden of National Price-Negotiated Drugs and

HPR141

Different Reimbursement Payment Modes in China: Hyperkalemia as an Example

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Background

Hyperkalemia, a common metabolic disorder, is defined as the serum potassium ion (K⁺) concentration in the body is greater than >5 mmol/L. The incidence of hyperkalemia is significantly higher when patients are comorbid with high-risk diseases such as chronic kidney disease, heart failure or diabetes mellitus. Besides, approximately 20% of hyperkalemia patients may experience a relapse after the initial diagnosis. Sodium zirconium cyclosilicate (SZC) is a new breakthrough drug of hyperkalemia in the past 60 years and has been negotiated into the National Health Insurance Catalog. As a national price-negotiated drug, the stock of SZC may be affected by both "dual-channel" management policy and other existing management policies. Depending on the actual situation in different provinces, it is difficult for patients to enjoy higher reimbursement from the policy. Because there may be a choice of reimbursement policy for this type of drug that is affected by multiple policies. The interface between policies is not ideal.

Objectives

To assess the budget impact on basic medical insurance funds and the financial burden on patients associated with different insurance payment models for the hyperkalemia treatment sodium zirconium cyclosilicate (SZC). The findings will serve as a reference for the stock of national price-negotiated drugs in China.

Methods

Study design: From a payer perspective, a measurement model was constructed to predict the budget impact and financial burden over the subsequent three years, using 2023 as the reference year. Three key scenarios were considered, including general outpatient policy, outpatient chronic and special critical disease payment policy, and special reimbursement policy under dual-channel management. Sensitivity analysis was performed on policy parameters and input parameters the model.

Data Sources: Policy documents and drug prices were from the official website. Epidemiological data were obtained from academic databases.

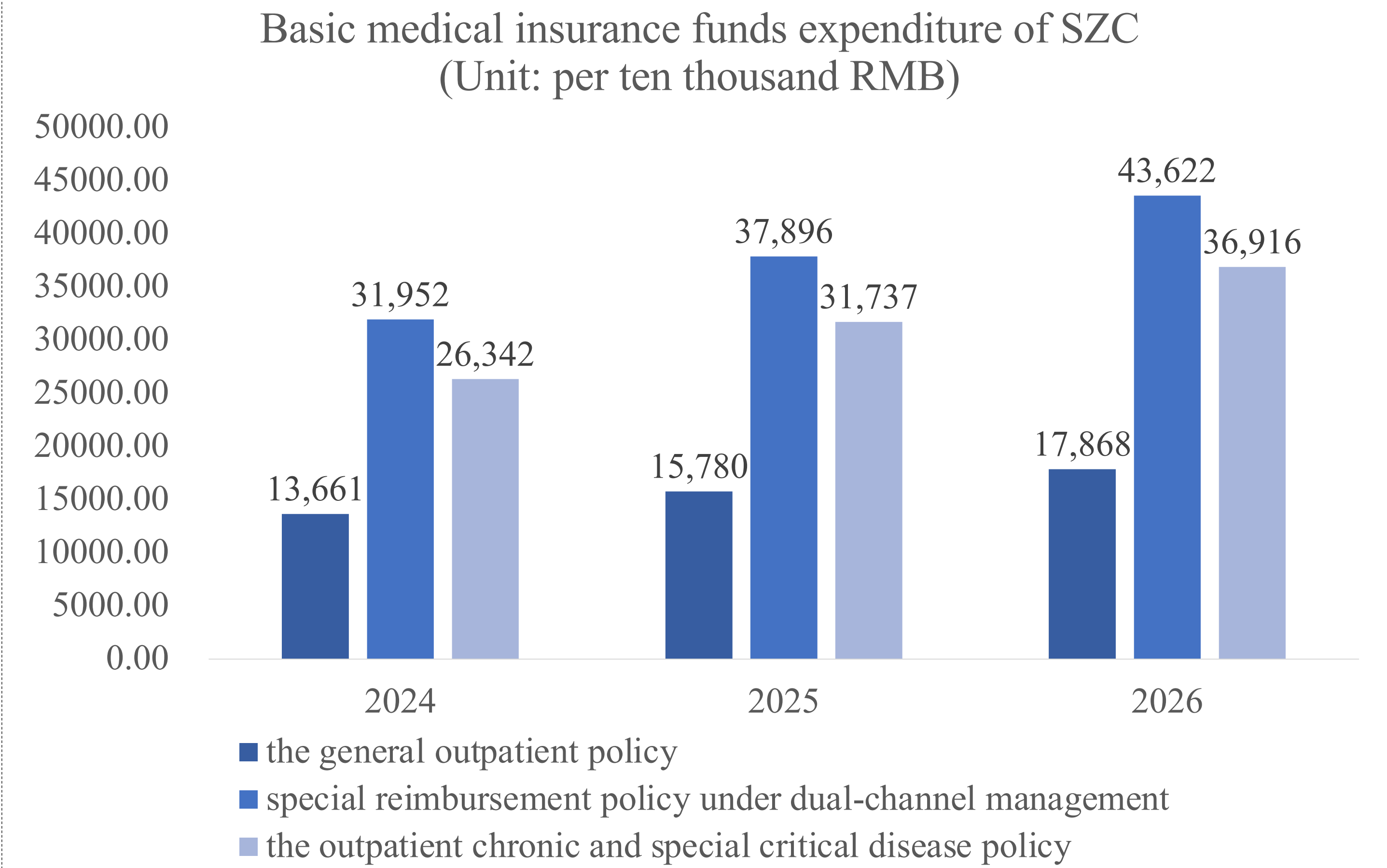
Target population: Hyperkalemia patients with non-dialysis-dependent chronic kidney disease, heart failure, and dialysis in the basic health insurance participant population in China.

Study Scenarios:

Scenario 1: SZC is reimbursed under the general outpatient policy.

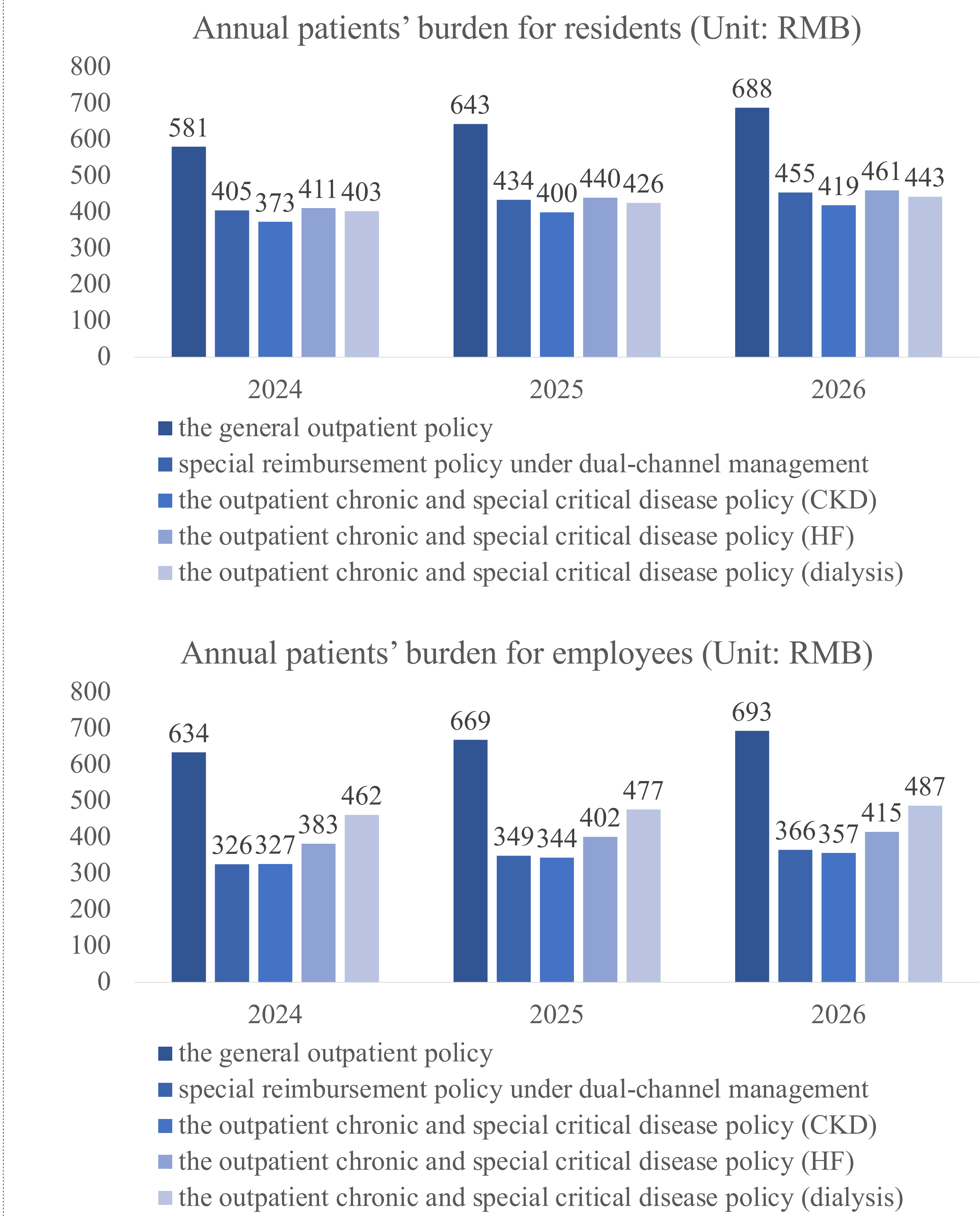
Scenario 2: SZC is a dual-channel drug in all provinces and is reimbursed according to the special reimbursement policy under the dual-channel management mode.

Scenario 3: SZC is reimbursed under the outpatient chronic and special critical disease policy.



Results

For SZC, the expenditure of basic medical insurance was highest (319.53 million yuan, 379.00 million yuan, 436.21 million yuan) when incorporated into special reimbursement policy under dual-channel management, however, this management resulted in the least financial burden on patients. Taking 2024 as an example, the out-of-pocket expenses after reimbursement in three different scenarios were 580.53 yuan, 405.04 yuan and 395.73 yuan among resident patients. For employee patients, the out-of-pocket expenses were 634.29 yuan, 325.80 yuan and 390.36 yuan. Sensitivity analysis showed that results were influenced by the proportion of dialysis patients with at least one attack annually, the payment limit for resident patients with general outpatient treatment, and the reimbursement thresholds for residents under the dual-channel management and the outpatient chronic and special critical disease policy.



Conclusion

This study tries to use the method of budget impact analysis to measure the impact on the medical insurance fund and patients’ burden under the different payment modes of existing policies. The budget impact of SZC on medical insurance funds and the financial burden on patients with hyperkalemia varies from three different payment models in China. It’s suggested that SZC could be included in the special reimbursement under the dual-channel management for the financial burden on patients and drug accessibility.

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