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Medicine, Doctors, and the Road: Rural Healthcare Challenges under the Sanming Reform

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ABSTRACT

This study explores the "last-mile" implementation challenges of the Sanming healthcare reform in rural areas and how the lack of medicine, medical staff, and access to healthcare affects villagers' experience of healthcare services. The study is based on qualitative fieldwork that took place in the summer of 2025 in three villages in Sanming, which included semi-structured individual interviews and informal group discussions with eight participants: elderly villagers, a village head, a former medical insurance bureau director, a township hospital manager, and a medical staff member. The results highlight three interrelated challenges. Firstly, there is a constant lack of medical staff in rural areas and frequent staff rotation. And medicine is also limited in supply due to centralized procurement. Secondly, the capacity of township facilities to handle complex and urgent conditions is limited by their diagnostic capacity, equipment, and delayed emergency transfers. Third, the lack of trust in grassroots providers, low health literacy, traditional treatment preferences, and dissatisfaction with insurance payments also limit the effective use of services. The reform efforts are constrained by the disconnect between the standardized policy design and local needs at the grassroots level. The study suggests that the implementation of reform should focus on stable rural labor force, locally responsive medicine supply, increase emergency capacity, and services that villagers can understand and use.

KEYWORDS

Sanming healthcare reform; Rural healthcare; Primary healthcare; Last-mile implementation; Medical resource shortages; Healthcare accessibility

1. INTRODUCTION

Eighty-year-old Grandpa Chen crouched before the medicine cabinet at the township hospital, shaking his head in disappointment once more. None of the medications in the cabinet could treat the snake bite of his son. And the ambulance needed at least two hours to arrive. In that moment, I understood that the polished charts and statistics on the walls of Sanming's healthcare reform seemed so distant when confronted with winding mountain roads and scarce antivenom.

Grandpa Chen's struggle vividly exposes the triple predicament of "medicine," "doctors," and "access," and represents a microcosm of the grassroots healthcare challenges plaguing Sanming City and vast rural areas across China. These micro-level struggles expose a macro-level paradox: despite progress in institutional design through national healthcare reforms, their effectiveness is often neutralized by formidable obstacles at the "last mile" of implementation. To better understand this paradox, this study examines the implementation of the Sanming healthcare reform from a grassroots perspective.

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Sanming's healthcare reform represents a pivotal experiment in China's medical system transformation, centered on a profound restructuring of its medical insurance framework (Sanming Municipal People's Government, 2024) [3, 4]. However, this field-based observational study reveals that these ambitious institutional innovations confront complex practical challenges during grassroots implementation, resulting in a stark gap between policy ideals and villagers' sense of gain.

To further examine this gap between policy design and local realities, this study is guided by the following research question: How does the Sanming healthcare reform encounter "last-mile" implementation challenges in rural areas, and how do shortages of medicine, medical personnel, and healthcare accessibility shape villagers' actual experiences of healthcare services?

2. LITERATURE REVIEW

2.1. The Sanming Healthcare Reform

The Sanming healthcare reform is widely regarded as a major experiment in China's healthcare institutional transformation [1, 2]. The reform aims to reduce medical costs, improve the efficiency of healthcare resource allocation, and promote the sustainable development of the medical insurance system. Through Diagnosis-Related Groups (DRG), Diagnosis-Intervention Packet (DIP) payment methods, and bundled payments, the way medical insurance pays for healthcare services has changed. Instead of simply reimbursing hospitals after treatment, these systems set clearer limits on spending for specific diseases or treatments, encouraging hospitals to control costs and use resources more efficiently, which helps improve the long-term sustainability of healthcare financing [3, 4].

To improve access to healthcare resources, the reform has also introduced centralized medicine procurement, zero-markup medicine sales, and annual salary systems for healthcare workers. Integrated medical alliances (networks of hospitals at different levels working together) and targeted training programs have been further promoted to facilitate the downward flow of medical resources and strengthen primary healthcare institutions. Existing studies suggest that these measures have contributed to lower medical costs, improved resource allocation, and better management of public hospitals [1, 2].

2.2. Rural Healthcare Challenges in China

Despite successful reforms, rural healthcare systems in China continue to confront formidable challenges. Rural healthcare shortages remain a bottleneck problem due to limited career opportunities, lower salaries, and weaker social support in underdeveloped areas. At the same time, the service capacity of grassroots healthcare institutions remains persistently low. Many patients prefer the village clinic over the nearby township hospital, reflecting limited trust in primary healthcare providers and difficulties in realizing the policy goal of "primary diagnosis at grassroots institutions and two-way referral" (Li & Krumholz, 2020) [5].

2.3. Research Gap

Existing studies have primarily focused on the institutional design and policy achievements of the Sanming healthcare reform. However, fewer studies have examined how these reforms are implemented in specific rural communities. Through fieldwork conducted in three villages in Sanming, this study explores the gap between policy and realities.

3. METHOD

I conducted field interviews in three villages in Sanming during the summer of 2025. Sanming was selected as the research site because it was the first city to implement the Sanming healthcare reform

model and has since become a nationally recognized example of healthcare system reform in China [1, 2]. Examining its grassroots implementation provides valuable insights into both the achievements and limitations of healthcare reform in rural areas.

This study adopted a qualitative fieldwork approach, combining semi-structured individual interviews and informal group discussions to explore the real operation of primary healthcare services in local communities. Participants were selected primarily based on accessibility during fieldwork while also considering the inclusion of different stakeholders within the healthcare system. The interviewees included elderly villagers (mostly farmers), a village head, the former director of the medical insurance bureau, a township hospital manager, and a medical staff member, allowing this study to capture multiple perspectives on the implementation of healthcare reform.

Through conversations with these eight participants, I was able to gain insight into the micro-level realities beneath this macro-level reform. Participant characteristics are summarized in Table 1.

Table 1. Participant Characteristics

Interviewee	Gender	Age	Education level	Occupation	Health Status
1	Male	65	Grade 2 elementary	Farmer	History of emphysema and cerebral infarction
2	Male	80	Grade 1 elementary	Farmer	Lung cancer
3	Male	73	Grade 2 elementary	Farmer	Good
4	Female	63	Grade 2 elementary	Farmer	Epilepsy
5	Male	68	Unknown	Village Head	Unknown
6	Male	78	Unknown	Former Director of Medical Insurance Bureau	Good
7	Female	46	Unknown	Township Hospital Manager	Good
8	Male	43	Unknown	Township Hospital Staff	Good

All participants were informed of the purpose of this study, and their participation was voluntary. Personal information has been anonymized where appropriate to protect their privacy.

4. DISCUSSION

The following information is summarized from field investigations.

4.1. Shortage of Medical Resources

During interviews, township hospital directors expressed their frustration: “In the village, those who have gone to university will stay in other places, let alone the medical workers.” The exodus of medical talent at the village level is severe. Village doctors are mostly dispatched personnel with markedly limited clinical competence, and the experience of barefoot doctors has not been systematically passed down. Township doctors are predominantly young and experience high turnover, creating a significant generational gap. Contributing factors include limited staffing quotas, insufficient incentives for targeted training programs, and inadequate compensation and social security. Although Sanming offers position-based subsidies, performance pressure persists, making retention difficult. While medical consortia and telemedicine represent innovative solutions, they cannot replace a stable workforce. These findings suggest that the challenge lies not only in the number of healthcare workers but also in the long-term sustainability of rural medical talent retention.

At the same time, the supply of medicines at the grassroots level remains severely constrained. Township hospitals generally stock only around one hundred types of medicines, most of which are common and inexpensive drugs, while specialty medications and certain imported drugs are unavailable. One elderly resident noted that some medicines commonly used in the past could no longer be obtained through local healthcare institutions. The centralized procurement system and zero-markup drug policy have successfully reduced medical costs, but they have also narrowed the range of medicines available to rural patients. As a result, a mismatch has emerged between standardized policy implementation and the diverse healthcare needs of local communities.

4.2. Low Medical Service Capacity

Primary healthcare facilities exhibit subpar diagnostic and treatment capabilities. Township clinics can only handle common minor ailments, with high misdiagnosis rates for complex conditions. Fatal medication errors have occurred. This problem is vividly illustrated in an elderly villager's account: "Ugh, talking about seeing the doctor, I remember that grandpa Wang, who got long-term high blood pressure, once encountered the cerebral hemorrhage. We quickly sent him to the township hospital, it originally should planning to stop the bleeding for him, but somehow, the hospital gave him blood-thinning medication instead. Oh, he just passed away. It's really a pity." Beyond this, equipment shortages are a major bottleneck. Critical diagnostic tools like CT scanners are absent, and emergency equipment is grossly inadequate. Remote consultations face practical limitations due to technical and network constraints.

Severe delays also plague emergency response and patient transfers. Ambulances take hours to arrive, often missing the critical treatment window. Mountainous regions see frequent venomous snake bites and hornet stings, yet lack serum reserves and public awareness education. Patients must be transferred across districts, posing immense risks. The root causes lie in insufficient funding, inadequate personnel training, and a fragile emergency response system.

4.3. Limitations in Villagers' Awareness and Behavior

Villagers generally distrust grassroots institutions and prefer seeking treatment at county hospitals. Traditional beliefs persist, with a preference for herbal medicine and folk remedies, casting doubt on the efficacy of centrally procured drugs. Simultaneously, poor health literacy has become increasingly urgent. According to township hospital directors, public health awareness is alarmingly low. "We've done some health knowledge popularization to the villagers, but they just don't get interested in it, and pay little attention to it." Furthermore, rising individual medical insurance contributions have failed to translate into policy benefits, with villagers commonly complaining about "increased expenses and reduced reimbursements."

5. CONCLUSION

During my days investigating Sanming, what lingered most in my mind wasn't the cold statistics or policies, but the hesitant expressions on the elderly's faces when they mentioned "going to the town for medical care." This sense of helplessness profoundly reflects the underlying fractures caused by medical personnel shortages, medicine scarcity, and the disconnect between trust and policy mismatches.

I often recall the township hospital director shaking his head: "Anyone from our village who went to college stays away." Talent is the core dilemma. Targeted training programs and position allowances exist, yet at the grassroots level, these policies feel like punching cotton—a village doctor confided to me: "With heavy performance pressure and stagnant wages, no one wants to stay here." Meanwhile, the expertise of veteran village doctors—once called "barefoot doctors"—is fading away silently. Without succession or systemic recognition, grassroots healthcare faces a "double hollowing-out."

Policies strive for innovation, yet they remain mismatched with villagers' actual needs. Sanming's "telemedicine" and "medical consortium" initiatives are conceptually advanced, but reality shows a rarely used remote terminal and an emergency response mechanism that barely functions. An elderly woman pulled me aside to talk about her husband with hypertension. He couldn't get proper treatment at the town clinic, and getting prescriptions at the county hospital was difficult. Each time they needed medicine, they had to calculate the days and make repeated trips. "The policy says more is reimbursed, but we end up spending more and running ourselves ragged."

What we need isn't more policies that remain on paper, but a system that rural residents can truly "see" and "understand how to use." Only by placing people at the core of reform and considering the practical needs of both patients and grassroots doctors can healthcare reform truly address rural realities and advance the implementation of the Healthy China strategy.

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