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Analysis of Development Dilemmas in Primary Healthcare Institutions: A Grounded Theory Study of Guilin City Postprint

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Abstract

Background: Since the new medical reform, primary healthcare institutions have achieved remarkable success in outpatient/emergency visits and basic public health service programs; however, they continue to face challenges including low personnel quality with high turnover rates, weak service capacity, and low efficiency. Thus, resolving the development predicament of primary healthcare institutions has become an urgent imperative. **Objective:** To analyze the development dilemmas of primary healthcare institutions and propose corresponding countermeasures. **Methods:** From April to May 2021, we employed a multi-stage sampling method to select 16 primary healthcare institutions across 6 counties and 2 districts in Guilin City, and conducted semi-structured interviews with their directors. Interview topics primarily encompassed resource allocation, service capacity building, medical insurance policy implementation, and development challenges. Using Nvivo 11.0 qualitative analysis software, we systematically categorized, summarized, and refined the original interview data. **Results:** This study extracted 38 initial concepts, 9 initial categories, 4 main categories, and 1 core category, identifying developmental blocking nodes in primary healthcare institutions within the sampled region across four dimensions: “resource allocation constraints,” “obstacles in the ‘three medical linkages’ pathway,” “functional positioning deviation,” and “lack of integration in medical consortium construction.” **Conclusion:** The development of primary healthcare institutions is constrained by multiple factors: equitable resource allocation and improved compensation mechanisms constitute the core issue; coordinated synergy in the “three medical linkages” pathway serves as an external condition; adjusting functional positioning represents a critical link; and establishing integrated medical consortiums is an essential approach.

Full Text

Development Dilemma of Primary Health Care Institutions: A Grounded Theory Study Based on Guilin City

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Abstract

Background: Since the new medical reform, primary health care institutions have achieved remarkable progress in consultation volumes and basic public health service projects. However, persistent challenges remain, including low personnel quality, high staff turnover, weak service capacity, and low efficiency. Addressing these development dilemmas has become an urgent priority.

Objective: To analyze the development dilemmas of primary health care institutions and propose corresponding countermeasures.

Methods: Between April and May 2021, semi-structured interviews were conducted with administrators from 16 primary health care institutions selected through multi-stage sampling across six counties and two districts in Guilin. Interview topics covered resource allocation, service capacity building, health insurance policy implementation, and development challenges. NVivo 11.0 qualitative analysis software was used to systematically classify, summarize, and refine the interview data.

Results: The study extracted 38 initial concepts, 9 initial categories, 4 main categories, and 1 core category, identifying stagnation nodes across four dimensions: “resource allocation constraints,” “obstruction of three-medical-linkage pathways,” “deviation of functional positioning,” and “lack of integration in medical community construction.”

Conclusion: The development of primary health care institutions is constrained by multiple factors. Balancing resource allocation and improving compensation mechanisms constitute the core issue; synergizing three-medical-linkage pathways provides external conditions; adjusting functional positioning represents a key link; and establishing integrated medical communities serves as an important approach.

Keywords: Primary medical and health institutions; Development status; Resource allocation; Service ability; Compensation mechanism; Medical alliance; Qualitative research

Introduction

The foundational role of primary health care systems in the broader medical and health service system necessitates that “Health China” initiatives in the new era prioritize grassroots development to promote high-quality primary health development. Located in northern Guangxi Zhuang Autonomous Region, Guilin faces constraints from geographical, social, and economic factors. Since the new medical reform, although Guilin’s primary health care institutions have seen significant improvements in medical service environments and equipment, persistent problems remain, including insufficient financial investment, slow service capacity improvement, and lack of coordination among different stakeholders. Previous research in this field has predominantly employed quantitative methods, focusing on resource allocation quantities and service output volumes, while lacking in-depth exploration of the development dilemmas faced by primary health care institutions. Resolving these dilemmas is crucial not only for implementing the tiered diagnosis and treatment system but also for realizing the “Healthy China” strategy. This study examines primary health care institutions in Guilin using grounded theory methodology and NVivo software to explore their current development status through qualitative analysis, attempting to construct a theoretical model of factors constraining primary health care development to inform policy-making.

Methods

Sampling and Data Collection: This study employed a three-stage sampling method. First, six counties and two districts in Guilin were selected using purposive sampling. Second, primary health care institutions (primarily community health service centers and township health centers) were selected from each county/district using convenience sampling. Third, one administrator from each institution was interviewed based on study objectives and information saturation principles. A total of 16 administrators from 16 primary health care institutions (12 township health centers and 4 community health service centers) participated. Inclusion criteria were: (1) administrators (directors or deputy directors) familiar with institutional operations with at least one year of experience; (2) informed consent and willingness to participate. This study was approved by the Guilin Medical University Ethics Committee (GLMC20170912).

The research team comprised two professors, one associate researcher, and four master’s students. The interview protocol was developed through literature analysis, internal team discussions, and pilot interviews with one administrator.

The final protocol covered: (1) resource allocation (talent team building, equipment, financial subsidies); (2) service capacity building (basic medical services, public health services, essential medicines system, family doctor contract services, medical community construction, informatization); (3) medical insurance payment and settlement (reimbursement ratios, traditional Chinese medicine insurance payment); and (4) development bottlenecks and obstacles. Face-to-face semi-structured interviews lasting 40-60 minutes were conducted in quiet, private meeting rooms at county/district health bureaus. Interviews were audio-recorded with consent, and key points were documented. Interviews continued until no new themes emerged and information saturation was reached.

Data Analysis: The study first generated a “word cloud” visualization through word frequency analysis to reflect differences in term frequencies and enable deeper analysis of development status. Then, following Strauss and Corbin’s grounded theory approach, data were analyzed through three coding procedures with continuous comparison and theoretical sampling until theoretical saturation was achieved. The process included: (1) Open coding: reading interview transcripts line-by-line to identify phenomena, extract concepts, and categorize them with defined properties and dimensions; (2) Axial coding: identifying relationships among categories using the paradigm model of “conditions → phenomenon → action/interaction strategies → consequences” to distill main categories; (3) Selective coding: extracting the core category and systematically linking it with other categories to form a “storyline” and construct a substantive theoretical framework. All analyses were conducted using NVivo 11.0.

Results

2.1 Word Frequency Analysis of Primary Health Care Institution Development Status

The most frequently mentioned terms were “personnel” (0.81%), “doctors” (0.76%), “township” (0.70%), “services” (0.68%), and “medical care” (0.57%) [Figure 1: see original paper].

2.2 Qualitative Analysis of Development Status

2.2.1 Open Coding Results

Line-by-line analysis yielded 250 statements related to primary health care institution development. Through conceptualization and categorization, 38 initial concepts and 9 categories were identified .

2.2.2 Axial Coding Results

Following the grounded theory paradigm model, the 9 categories were integrated into a relationship diagram [Figure 2: see original paper]. Four main categories emerged: resource allocation constraints (A1), three-medical-linkage pathway obstruction (A2), functional positioning deviation (A3), and lack of integration in medical community construction (A4) .

2.2.3 Selective Coding Results

Comparative analysis of the four main categories, relationship diagram, and original data identified “primary health care institution development status” as the core category. All four main categories significantly influenced development. The storyline revealed that primary health care development is constrained by multiple factors: balanced resource allocation is the core issue, three-medical-linkage synergy provides external conditions, functional positioning adjustment is the key link, and integrated medical community construction serves as an important approach.

2.2.4 Theoretical Saturation Testing

Reserved interview materials were coded without generating new concepts, indicating theoretical saturation was achieved.

Discussion

3.1 Imperfect Resource Allocation: Primary Health Care Institutions as Training Bases for County Hospitals

3.1.1 Urgent Need for Human Resource Optimization

Resource allocation constraints were most frequently mentioned and represent a major development factor. Human resources are critical, yet shortages plague primary health care institutions with simultaneous “recruitment difficulties” and “retention challenges.” The core issue lies in personnel quality and structural mismatch with service functions. First, township health centers face recruitment barriers due to insufficient staffing quotas, low compensation, and lack of professional identity. Limited opportunities for career development and the “siphoning effect” of higher-level hospitals mean that staff often leave after training or promotion, turning township health centers into training bases for county hospitals and creating a dilemma of inadequate talent and immediate turnover. Second, compensation mechanisms and distribution policies remain imperfect. Under the performance-based salary system with “minimum guarantee but no maximum limit,” salaries fail to reflect actual workload, and incentive bonuses are minimal. This “equalization” of pay cannot embody the principle of “more pay for more work,” severely dampening enthusiasm. The rigid performance evaluation system leads to reduced service volumes, poorer financial conditions, lower distributable surpluses, and ultimately higher turnover. We recommend developing relative value-based workload quantification standards considering time investment, technical difficulty, and risk to support rational performance evaluation. For talent development, besides “5+3” undergraduate order-directed medical students, “3+2” junior college general practitioners should be trained to enrich primary care teams. Objectively improving compensation and promotion mechanisms while subjectively enhancing professional identity and hometown belonging can increase renewal rates after service periods.

3.1.2 Unreasonable Financial Resource Allocation

Financial resources also critically affect stable operations. Although government subsidies have increased substantially, the essential medicines system has eliminated drug markups, leaving institutions dependent on local fiscal support and unable to self-invest. When county finances are tight, delayed subsidies affect healthy development and sustainable operations. Improving compensation mechanisms is key to achieving reform goals.

3.2 Obstructed Three-Medical-Linkage Pathways with Lack of Synergy

In the “three-medical-linkage” (medical care, medical insurance, pharmaceuticals), only care and pharmaceuticals are moving while insurance remains disconnected. Medical insurance restrictions were most frequently mentioned, followed by essential medicines system issues. Insurance supervision and total budget control constitute major constraints. While insurance supervision maintains fund stability, its indicators conflict with medical practice patterns. Interviewees reported unclear reimbursement rules and insufficient training. Key performance indicators like “bed-hanging” (fraudulent admission) and low-standard hospitalizations are difficult to regulate in practice. Under global budget systems, excessive or complex services may exceed quotas, resulting in non-payment. Some capable institutions with high per-visit costs face negative incentives due to uniform payment standards, reducing service provision. Additionally, despite strong public acceptance of traditional Chinese and ethnic medicine in Guilin, outpatient pooling funds are limited to six treatment types, creating mismatches between policy and demand. We recommend strengthening internal insurance management functions, enhancing staff training, and implementing tiered diagnosis and treatment. Health authorities should collaborate with insurance and supervision departments to coordinate supporting policies.

Post-essential medicines system implementation, institutions face drug shortages, incomplete varieties, outdated pricing, and sharply reduced profitability, consistent with research in Guangxi. Limited drug varieties cannot meet diverse needs across township health centers with different service emphases. Drug shortages compromise treatment continuity for chronic diseases and hinder two-way referrals. We recommend dynamic adjustment of essential medicines and insurance reimbursement catalogs, strengthened supervision of centralized procurement platforms, and improved drug availability and timely distribution.

3.3 Weakened Primary Care Service Capacity from Multiple Factors

Since the new medical reform, national policy has prioritized basic public health service equalization, shifting institutional focus toward public health and increasing service volumes. With “health poverty alleviation” and family doctor contract services, clinical staff undertake extensive public health work alongside clinical duties, leading to severe multi-position holding. Basic medical service volumes have declined accordingly. Research in Shandong shows most institutions have closed surgical and obstetric services. In Guangxi, geographical constraints, inconvenient transportation, natural disasters during rainy seasons,

and out-migration of young adults reduce actual service populations below registered populations, shrinking institutions. Meanwhile, convenient transportation enables residents to prefer county hospitals, leaving only public health services operational. Studies show service population and radius significantly impact primary care institutions.

The functional “tilt” toward public health reduces medical service items and weakens capacity, increasing patient outflow to higher-level hospitals. Zero drug markups and low service fees decrease medical income and performance incentives. Some institutions rely solely on public health subsidies, while cumbersome integration of clinical and public health work hinders “medical-prevention integration” and life-cycle health management. We recommend classifying institutions by service population, group structure, and geography to implement categorical management, allowing reasonable development of traditional Chinese medicine, elderly care integration, and specialty services while maintaining basic medical and public health functions.

3.4 Loose County Medical Community Construction with Fragmented Service Delivery

County medical communities primarily support primary care through periodic specialist consultations. In Guilin’s rural areas, residents gather on fixed market days (“赶圩”), significantly increasing patient flow. Institutions leverage these days by advertising expert consultations, increasing service volumes and meeting health needs. However, due to human resource constraints, expert support is time-limited, leaving institutions in a cycle of “people leave, technology stops, equipment idles” without sustainable mechanisms. We recommend that leading hospitals listen to grassroots needs and dispatch management-level cadres or key professionals as executive deputy directors to improve management capacity. When traditional support forms like ward rounds prove ineffective, regular training on infection control, insurance policies, and equipment use should be implemented.

Second, medical communities lack coordinating authorities. Income disparities among member institutions create resistance to personnel and salary reforms, hindering “six unifications” (human resources, finances, assets, business, information, and performance). Blurred division of labor and unclear rights, responsibilities, and benefits cause fragmented services. Two-way referral, crucial for tiered diagnosis, faces challenges as patient distrust, staff fear of disputes, and leading hospitals’ fear of accountability create “easy upward, difficult downward” referrals. We recommend establishing clear authority and supervision mechanisms with standardized disease recovery and care classification criteria.

Without referral information platforms, transfers rely on WeChat, phone calls, or paper forms, causing redundant examinations and resource waste. Medical community informatization lags, creating information silos. Leading hospitals use separate HIS systems, township health centers use legacy systems, public health uses Guangxi Health Information Platforms, two-way referrals use Guilin Tiered Diagnosis Systems, and remote imaging uses another independent sys-

tem, preventing precise interoperability. Staff maintain “password books” for multiple systems. We recommend health administrative departments lead system integration to reduce burdens and facilitate information exchange.

3.5 Strengths and Limitations

Previous research has not comprehensively reflected current primary health care dilemmas. This study uses grounded theory to identify four key constraining elements—resource allocation, three-medical-linkage, functional positioning, and integrated medical communities—providing direction for capacity building and policy optimization. However, as a qualitative method based on interview data, results are subjective. Primary health care institutions vary significantly by region and socioeconomic context. This exploratory study requires expanded scope to enhance generalizability.

Conclusion

Primary health care institutions form the “net bottom” of China’s health service system, providing basic medical and public health services to urban and rural residents. Through dynamic performance salary management, improved compensation mechanisms, exploration of positive incentive systems, coordinated staffing across county-township-village levels, and weakened urban-rural establishment barriers, talent can flow rationally within regions and truly “stay and serve at the grassroots.” Using medical services as the lever and insurance payment methods as the tool, a dynamic coordination mechanism among medical services, insurance, and essential medicines should be established. Simultaneously, institutions should return to their functional positioning, establish new medical-prevention integration patterns, and strengthen medical community leadership to enable high-quality medical technology and services to take root at the grassroots, promoting coordinated development among all members.

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Author Contributions: WANG Siyuan and SHI Wuxiang conceived the study and conducted feasibility analysis. WEI Yingjue and LIU Jianying performed literature searches and designed/revised the interview protocol. WANG Siyuan and HANG Ranfeng collected interview data, transcribed and verified recordings, performed coding, and drafted/revised the manuscript. HUANG Zhaoquan supervised quality control and revision, taking overall responsibility for the manuscript. All authors approved the final version.

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