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Innovative Models for Community Health Management and Home-Based Care

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Abstract: With the combined impact of multiple factors, China's population aging has entered a phase of rapid development. Among various elderly care models, community and home-based care under the "9073" model has become the mainstream demand, yet the service system faces prominent contradictions. Primary healthcare services suffer from imbalances in investment mechanisms, uneven equipment distribution, and shortages of human resources; the gap in home care personnel is widening, with high attrition rates driven by work pressure; there exists a mismatch between the personalized needs of the elderly and traditional standardized services; and inefficiencies persist throughout the entire service chain. To address these challenges, this paper proposes a three-dimensional innovation pathway encompassing service supply, collaborative mechanisms, and technological integration. Service supply: Establish a "community-home-family" interconnected network and tiered service packages combining "basic care + specialized support." Collaborative mechanisms: Develop a multi-sectoral "medical-social-health-wellness" coordination model. Technological integration: Achieve intelligent care transformation through "smart devices + digital platforms." Implementation of this innovative model requires three core pillars: policy (subsidies, pricing, regulation), resources (diverse integration), and talent (development, incentives, retention). The organic integration of these elements can effectively overcome supply bottlenecks, ensure high-quality development of community and home-based care, and help address the challenges of population aging.

Keywords: Population aging; Community health management; Home-based care; Elderly care models

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1. Introduction

Driven by national policies and multiple factors including declining birth rates and accelerated urbanization leading to smaller family units, China has entered a moderately aged society characterized by large-scale, rapid pace, and significant regional disparities. Following the introduction of the "9073" elderly care model, home-based care has become the mainstream approach. This not only aligns with seniors' psychological need for care in familiar environments but also reflects global trends in elderly care services [1]. Professor Tang Jun of the

Chinese Academy of Social Sciences [2] notes that over 95% of the world's elderly choose home-based care, with responsibilities shared among individuals, families, and communities. The impact of community management and home care extends beyond the social level, carrying significant economic value. However, a prominent contradiction exists between market demand and supply capacity, posing severe challenges to the service system. Moreover, as the core of primary healthcare services, community health centers suffer from imbalances in resource allocation, shortages of home care personnel, inadequate alignment between personalized needs and traditional models, and inefficient service processes. These issues severely constrain service quality. Therefore, this paper explores innovative models for community health management and home care, which are crucial for advancing the high-quality development of elderly care services.

2. Current status and challenges

2.1. Imbalance in supply and demand of community health management resources

Community health centers, as primary healthcare providers, deliver essential public health and medical services at the grassroots level. Their resource allocation directly impacts the feasibility and quality of elderly health management services. While the number of community health institutions in China has grown significantly, underlying contradictions remain unresolved, manifesting in three key areas: First, there is an imbalance between investment mechanisms and allocation efficiency [3]. Despite notable increases in resource quantity, deficiencies persist in resource allocation, including insufficient investment and uneven distribution of factors. Technology has become a critical bottleneck constraining efficiency gains, and regional disparities in resource allocation are pronounced, highlighting significant development imbalances across areas [4]. Second, equipment configuration exhibits "regional disparities and overall inadequacy." As of 2024, among Hainan's 216 community health service centers, health expenditures disproportionately favor urban hospitals, leaving community health institutions with low investment shares. These centers commonly suffer from small scale, inadequate equipment, and weak service capabilities, creating a significant gap in meeting elderly health needs [5]. Third, human resource shortages persist. Some community health centers exhibit significant imbalances in staffing structures, with severe talent attrition and insufficient supply of specialized personnel. This makes it difficult to meet the specific needs of the elderly, such as chronic disease management and rehabilitation care [6].

2.2. Shortage of home care professionals

Nursing, as an indispensable and highly specialized service model within the medical field, can more precisely meet the health needs of homebound populations. Relevant studies indicate [7–9] that community nurses demonstrate a strong willingness to engage in home-based nursing, yet work-related risks and stress significantly diminish this willingness, exhibiting a negative correlation. With the implementation of the "Healthy China" strategy, the role of nurses has evolved, and the competency requirements for nursing professionals have taken on new dimensions: shifting from the traditional focus on disease care to gradually transforming into comprehensive, lifecycle-based health managers. Their responsibilities have expanded beyond purely clinical disease care to encompass the entire health care continuum—promoting, preventing, diagnosing, controlling, treating, and rehabilitating. This transformation imposes higher demands on the competencies of nursing students in higher vocational education during this new era. Beyond mastering fundamental nursing skills, students must also develop comprehensive health management capabilities and diverse specialized nursing competencies [10]. Consequently, many nursing

professionals are reluctant to engage in home-based care, leading to a persistent shortage of home care personnel.

2.3. Mismatch between elderly individuals' personalized needs and traditional models

The mismatch between personalized elderly needs and traditional care models has become a core bottleneck constraining service quality improvement. As China's aging population deepens and the health and wellness industry advances, elderly demand for care services has evolved from "basic survival support" to "quality-driven, personalized fulfillment." The dual core needs of medical care and emotional comfort increasingly exhibit differentiated characteristics [11]. On one hand, medical care demands exhibit a trend toward "niche scenario-based" services, extending beyond basic disease treatment to encompass chronic disease management, post-surgical rehabilitation, specialized care for disability and dementia, and palliative care [12]. On the other hand, emotional support needs are evolving toward "diverse experiential dimensions," encompassing companionship, interest-based socialization, and psychological counseling. Examples include elderly individuals living alone requiring regular home visits for companionship, or cultural enthusiasts anticipating community calligraphy and opera activities—all reflecting the core demand for personalized services among the elderly. However, traditional community and home care models still suffer from supply-side responsiveness lag. This structural mismatch between "diversified demand and monolithic supply" not only lowers service satisfaction among the elderly but also constrains the transformation of community and home care services toward high-quality development.

2.4. Efficiency shortcomings in existing service workflows

Efficiency gaps permeate the entire service chain across four key stages: "needs assessment–resource matching–service implementation–outcome feedback." Specific manifestations include: First, needs assessment suffers from "lack of standardization + redundant processes" [13]. Traditional assessments rely primarily on "in-person visits + paper records," resulting in inconsistent evaluation standards and redundant procedural steps that delay subsequent care initiation. Second, resource matching faces efficiency bottlenecks due to "information silos and manual dependency." Cross-departmental data interoperability is poor. Community-held residential addresses and family care status, health department chronic disease records, and civil affairs department elderly subsidy information remain unlinked and unshared, requiring manual verification for service matching. Simultaneously, scheduling mechanisms lack intelligent support, compressing effective service time [14]. Third, service implementation suffers from "weak process control + delayed emergency response." Regarding service documentation and oversight, caregivers predominantly use paper forms for recording, requiring daily return to institutions for data entry after service—a time-consuming process prone to errors and omissions.

3. Innovative models for community health management and home care services

Addressing challenges in traditional community health management and home care—including resource mismatches, service homogenization, and delayed responses—this approach employs three-dimensional innovation in service delivery, collaboration mechanisms, and technological integration as key pathways to overcome these obstacles. It establishes a new care system characterized by "precision-targeted supply, collaborative operations, and intelligent support."

3.1. Service supply innovation: Tiered classification and scenario extension

Guided by demand, we break away from one-size-fits-all approaches to establish a tiered supply system. On one hand, we create a three-tiered linkage between "community-home-family": Community health service centers serve as transit stations, integrating with nursing and rehabilitation centers to provide basic consultations and rehabilitation training. Home-based care acts as a channel where nursing staff visit households for chronic disease management and care for the disabled. Through skill training for caregivers, we enhance family care capabilities, forming a closed-loop system [15]. On the other hand, we implement tiered "basic + specialized" services, with specialized care targeting specific groups—such as "targeted medical care + nutritional guidance" for the elderly with chronic diseases and "cognitive training + psychological care" for those with dementia.

3.2. Collaborative mechanism innovation: Multi-stakeholder synergy

Breaking down departmental barriers and resource silos, a collaborative model integrating government, enterprises, medical institutions, and community health and wellness services is established. First, "medical-community collaboration": Through medical consortium development, secondary-level hospitals and above sign agreements with community health service centers. This facilitates expert consultations and mentoring at the community level, community healthcare staff training, and the establishment of "green referral channels" to streamline medical processes. Second, "government-enterprise partnership": Governments introduce professional elderly care institutions and nursing enterprises through service procurement and venue support. Enterprises provide standardized processes and management teams, while governments oversee supervision and evaluation, forming an ecosystem of "government oversight + enterprise operation + social participation" [16]. Third, "community-family mutual aid": Establish volunteer teams and mutual aid groups among younger seniors, build a "Family Caregiver Mutual Support Platform," and alleviate caregiving pressure through experience sharing and online consultations.

3.3. Technology-driven innovation: Smart empowerment for care upgrades

Achieve intelligent care transformation through "smart devices + big data platforms." For health monitoring, introduce wearable devices, smart home mattresses, emergency call systems, etc., to collect real-time data transmitted via IoT to community health management platforms, creating dynamic health profiles. For remote intervention, leveraging big data machine learning models and AI algorithms to analyze data, setting automatic alerts for abnormal values, enabling healthcare personnel to intervene promptly through real-time data updates and remote consultations, shifting from "passive response" to "proactive prevention" [17]. For service management, establishing a "one-stop digital platform" to integrate functions, using intelligent algorithms to optimize caregiver routes and reduce redundant work.

4. Implementation guarantees for innovative models

The sustainable advancement of innovative models relies on three core pillars: policy, resources, and talent. It requires establishing a coordinated implementation system encompassing "institutional safeguards–resource integration–capacity enhancement" to overcome practical execution challenges.

4.1. Policy support: Refining incentive and regulatory synergy mechanisms [18]

The state optimizes the service environment through a triple safeguard of "subsidies + standardized pricing + oversight." First, it strengthens fiscal subsidies by providing support grants to community-based home care

service centers, funding purchases of smart devices, and incorporating certain service items into medical insurance coverage to lower consumption barriers for seniors. Second, it establishes a dynamic pricing mechanism where the government leads in developing service price catalogs categorized by service complexity, duration, and economic level, with regular assessments and adjustments. Third, an "online + offline" oversight model is implemented: online platforms ensure service traceability, while offline teams conduct periodic spot checks. Service satisfaction rates and complaint metrics are linked to subsidy eligibility to guarantee quality.

4.2. Resource support: Diverse integration to expand supply capacity

Breaking the limitations of "single-source provision," we foster a collaborative supply framework involving "government + society + community." On one hand, we revitalize existing resources by upgrading public facilities such as community health centers, senior care stations, and idle school buildings to add nursing beds and rehabilitation facilities. We establish a "shared pool" for underutilized hospital medical equipment to enhance resource efficiency [19]. Simultaneously, leverage social resources by incentivizing corporate and organizational participation through tax breaks and venue discounts. Encourage real estate developers to integrate aging-friendly community care services and internet companies to build elderly care platforms. Establish a "resource-sharing platform" to consolidate healthcare professionals, volunteers, and domestic service providers, enabling real-time matching of supply and demand information [20].

4.3. Talent support: Establishing a full-chain training and incentive system

Enhance the professional competence and career appeal of care personnel through a comprehensive "training-incentive-retention" chain. First, establish a tiered training system [21]. Provide foundational care skills training for nursing assistants, while offering specialized training in chronic disease management and rehabilitation nursing for medical staff. Collaborate with vocational institutions to implement "order-based training" for targeted talent supply. Second, refine compensation incentives by establishing a pay structure linked to skill levels, years of service, and performance evaluations. Introduce a "Star-Rated Nursing Assistant" reward system and ensure benefits like social insurance and paid leave to reduce attrition. Third, broaden career advancement pathways by establishing a "caregiver-supervisor-director" management progression track. Support nursing staff in obtaining higher-level certifications through continuing education or transitioning into roles as training instructors or assessors to enhance professional value [22].

5. Development prospects for innovative community health management and home-based care models [23]

Community management and home-based care models serve as crucial pathways to address China's aging population. Their development prospects reveal clear forward momentum and practical implementation routes across three dimensions: policy, technology, and market. On the policy front, guided by the "Healthy China 2030" strategy, the Government Work Report explicitly outlines plans for "community-supported home-based elderly care." The government has released policies to build a care service system, providing economic subsidies to support the establishment of community care institutions. This creates a systematic supply of resources and safeguards, effectively reducing operational risks and lowering access barriers. Technologically, smart solutions are deeply integrated throughout the entire process. The application of intelligent devices, AI assessment systems, and data-sharing platforms not only reconstructs the full cycle of "needs identification–resource matching–service

allocation–outcome feedback" but also alleviates labor shortages by "enabling technology–enhancing efficiency," driving the smart elderly care industry toward increasing maturity. In the market dimension, China's severe aging population creates both foundational care needs and a demand for quality upgrades driven by evolving attitudes—extending to chronic disease management, rehabilitation care, and psychological support. The aforementioned three-dimensional synergistic mechanism—"policy support, technology enhancement [24], demand traction"—provides institutional, technological, and market-based triple support for model innovation, facilitating its transformation toward a high-quality, sustainable, and refined service paradigm.

6. Conclusion

This paper focuses on the core demands of China's "9073" elderly care framework amid accelerating population aging. Addressing systemic challenges in community and home-based care systems—including resource supply-demand imbalances, professional talent shortages, mismatched service provision, and operational inefficiencies—it conducts progressive research spanning status diagnosis, model innovation, and implementation safeguards. By establishing a "demand-driven–problem-solving–value realization" logic, it proposes a three-dimensional innovation framework encompassing service provision, collaborative mechanisms, and technological integration. Concurrently, it constructs a synergistic implementation support system featuring policy incentives and oversight, diversified resource integration, and end-to-end talent cultivation, forming a closed-loop research system of "problem–solution–support." This systematic solution addresses core bottlenecks in community and home-based care—namely, "monolithic service provision, fragmented collaboration, and superficial technology adoption." It not only provides practical support for the high-quality, refined transformation of elderly care services but also offers a micro-level implementation lever for the "Healthy China 2030" strategy from the grassroots healthcare perspective.

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