Post-Print: Development Strategy for Community-Based Disease-Specific Diagnostic and Therapeutic Technology Based on General-Specialist Integration

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Abstract

Primary-level healthcare institutions undertake a series of important responsibilities related to health and wellness. With the continuous development of the medical field, the hardware conditions of community health service institutions have significantly improved, and the capabilities of health information systems have been effectively enhanced, highlighting the public's growing demand for receiving specialized diagnosis and treatment in communities. This article explores the significance of building community specialized disease diagnosis and treatment technology, the connotation of general-specialty integration, and implementation strategies and methods. The article points out that constructing and developing specialized disease diagnosis and treatment technology in community health service centers can enhance the professional competence of community general practitioners, improve primary-level medical technical capabilities, elevate the capacity level of community health services, and meet the public's demand for specialized disease diagnosis and treatment. Developing general-specialty integration means developing specialized disease diagnosis and treatment technology on the basis of general practice work, and also requires collaborative cooperation with higher-level hospitals to introduce a series of specialized technologies to jointly carry out diagnosis and treatment work. Regarding specific implementation strategies, it is necessary to identify appropriate specialized technologies based on local diagnosis and treatment demands, leverage introduced talented professionals to conduct a series of applied basic research targeting clinical method deficiencies, gradually build and promote its own technical brand, and ultimately establish a specialty development base with distinctive technical features.

Full Text

Abstract

Primary health care institutions undertake a range of crucial health-related responsibilities. With the continuous advancement in the medical field, community health service institutions have significantly improved their hardware conditions and effectively enhanced their capacity for health information systems, thereby highlighting the growing demand of individuals to receive specialist diagnosis and treatment within the community. This paper discusses the significance, connotation, implementation strategy, and method of constructing specialized disease diagnosis and treatment technology in the community. The article emphasizes that developing specialized disease diagnosis and treatment technology in community health services can enhance the proficiency of general practitioners, improve primary medical technology standards, elevate community health service levels, and meet public demands for specialized disease diagnosis and treatment. The development of comprehensive-specialty integration entails not only advancing specialized diagnostic and treatment technologies based on general practice work but also collaborating with higher-level hospitals to introduce a series of specialized technologies for joint diagnostic and treatment efforts. In terms of specific implementation strategies, it is essential to identify appropriate specialized technologies based on local diagnostic and treatment needs while conducting applied basic research on clinical method deficiencies through recruited expertise. Gradually establishing distinctive technical brands will help build momentum towards creating a specialization-focused development base.

Keywords: General practice; Hospitals, special; Collaboration of general practice and speciality; Community health services; Strategy

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1. Significance of Developing Community Specialized Disease Diagnosis and Treatment Technology

Community health institutions bear important responsibilities related to health care, including disease diagnosis and treatment, public health services, and health promotion. This person-centered, family-based, community-scoped health security model requires institutions and practitioners to construct a primary health care service system grounded in general practice that encompasses both basic medical care and diversified integrated health services [1]. As community health service institutions have markedly improved their hardware infrastructure and health information system capabilities, and as medical reforms have enhanced accessibility, convenience, and public satisfaction, demand has become increasingly prominent for high-level medical technologies in community settings—particularly for distinctive specialized disease diagnosis and treatment technologies. As a comprehensive clinical discipline, general

practice must explore appropriate directions for its development in community settings, and general practitioners must identify pathways for their professional growth. Consequently, the development of specialized disease diagnosis and treatment technologies in communities has become a critical component for further enhancing the capacity of primary health care.

The continuous development of specialized disease diagnosis and treatment technologies in community health services holds multiple layers of significance. First, improving primary medical technology standards and elevating community health service capacity represents a core function of primary care—not merely managing simple conditions or dispensing medications, but rather achieving better clinical outcomes through advanced diagnostic and treatment capabilities that retain patients with common and frequent diseases in the community. This approach provides clinical technical services comparable to tertiary hospitals and genuinely enhances community health service capacity [3], representing a concrete manifestation of the person-centered philosophy of general practice.

Second, meeting public demand for specialized disease diagnosis and treatment is essential. Although general practice covers disease categories across multiple systems and specialties, patients seeking treatment for their own conditions have a psychological need to find "characteristic diagnosis and treatment technologies" or "renowned experts" to achieve better clinical outcomes. This widespread medical-seeking psychology, characterized by "traveling for renowned care," is not constrained by geographic distance. Therefore, developing specialized disease diagnosis and treatment technologies in communities better reflects the functional role of primary health care.

Third, enhancing community general practitioners' professional competence is crucial. Conducting clinical diagnosis and treatment constitutes the primary duty of general practitioners and forms the core of their career development. Building upon their foundation of generalist knowledge and skills, general practitioners can identify a direction for developing expertise in a specific disease, refine their skills to become "renowned doctors" in that field, conduct scientific research around specialized diseases, and increase their influence. This not only benefits patients through improved treatment outcomes but also serves as an important means for general practitioners to strengthen their professional capabilities and enhance career satisfaction.

2. Connotation of General-Specialty Integration

Developing specialized disease diagnosis and treatment technologies in community health institutions must follow the developmental pathway of "general-specialty integration," which encompasses two dimensions [4].

2.1 Developing Specialized Disease Diagnosis and Treatment Technologies Based on General Practice

Community health institutions should implement general practice services while, for certain regionally prevalent diseases, leveraging existing community experts' technical strengths and purposefully learning specific techniques from higher-level hospitals to conduct specialized disease diagnosis and treatment tailored to local conditions. This general-specialty integration model maintains general practice as its foundation while demonstrating distinct specialty or disease-specific characteristics, thereby meeting patients' medical needs.

2.2 Collaborative Partnership with Higher-Level Hospitals to Introduce Technologies for Joint Practice

Community health institutions can collaborate with higher-level hospitals based on regional disease spectrum characteristics, with community general practitioners and hospital specialists jointly establishing specialized disease clinics or implementing diagnosis and treatment technologies. This cooperative approach between community general practice and hospital specialties provides patients with integrated technical services.

3. Implementation Strategies for Community Specialized Disease Diagnosis and Treatment Technology Based on General-Specialty Integration

3.1 Identifying Clinical Technology Characteristics and Directions

Clinical technology characteristics refer to achieving advanced levels in disease diagnosis and treatment with excellent outcomes and quality, possessing unique features, and gaining recognition from both academic circles and patients [5]. Therefore, evaluating whether clinical diagnosis and treatment technologies are distinctive requires consideration of both advancement and influence.

When determining the development direction of clinical technology characteristics, several factors must be fully considered: (1) Local disease diagnosis and treatment needs—specifically, diseases with high incidence and substantial treatment demand in the region; (2) Differentiated development—focusing on introducing new technologies and projects not yet available locally to establish differentiated technical advantages; (3) Existing foundations in specialized disease diagnosis and treatment—when the team already possesses advanced, patient-recognized technologies for certain diseases, measures can be implemented to further develop these into distinctive features; (4) Improving medical quality and developing multidisciplinary collaborative diagnosis and treatment—community health institutions should avoid blindly pursuing original technological innovation and instead focus on improving quality and standardization for common and frequent diseases while emphasizing collaborative application of various community-appropriate technologies to maximize clinical outcomes and enhance

social influence [6]; and (5) Technical advantages brought by recruited talent.

The naming of specialized disease diagnosis and treatment technology characteristics should incorporate both disease and technical elements—for example, "Lu's Acupuncture for Stress Urinary Incontinence," "Characteristic Treatment for Vitiligo and Alopecia," "Combined Acupuncture and Medication for Pediatric Spleen-Stomach Diseases," and "Traditional Chinese Medicine Treatment for Recurrent Oral Ulcers." Such clear, comprehensible positioning facilitates promotion.

3.2 Conducting Clinical Problem-Oriented Scientific Research

Using community specialized disease diagnosis and treatment technology as an entry point for general practice discipline construction enables multi-angle scientific research: conducting community epidemiological surveys of specialized diseases to understand regional incidence characteristics and related factors while publicizing the institution's technical characteristics; researching relevant factors in standardized diagnosis and treatment; establishing specialized disease databases; and conducting applied basic research addressing clinical method deficiencies. Research based on general-specialty integration can closely align with clinical development directions and effectively aggregate case resources, thereby demonstrating the true significance of clinical research.

3.3 Building and Promoting Technical Brands

Building technical brands involves expanding academic influence and increasing public awareness based on established technical characteristics and scientific research. This includes organizing specialized academic conferences, continuing education programs, or training projects related to specialized disease diagnosis and treatment; applying for scientific and technological achievement awards; publishing papers, academic works, and patents; participating in academic exchanges to introduce clinical technologies or research findings to professional circles; and particularly emphasizing brand building through academic communication. To increase public awareness, institutions can conduct health education, utilize formal media and online platforms, and operate official social media accounts, focusing particularly on modern, popular approaches to disseminating scientific health knowledge and technical characteristics that enhance brand influence.

3.4 Establishing Technology-Characteristic Development Bases

Base establishment primarily involves opening specialized disease clinics, conducting screening and physical examinations for specialized diseases in communities, and providing necessary facilities and equipment for medical technologies. Additionally, technology teams should actively pursue various levels of technology development programs, such as specialized technology centers or technical

service brands. Base construction should emphasize gradual, step-by-step implementation rather than attempting to accomplish everything at once.

4. Talent Cultivation in Community General Practice Discipline Construction

The four aspects described above—constructing technical characteristics, conducting clinical problem-oriented scientific research, cultivating and promoting technical brands, and base establishment—constitute the main connotation of developing specialized disease diagnosis and treatment technology based on general-specialty integration to drive general practice discipline construction [7]. However, this does not overlook talent cultivation in discipline construction. These four strategies provide a feasible platform for talent development: after identifying the direction of technical characteristics, various approaches should be used to cultivate technical teams; conducting and implementing scientific research projects represents an inevitable pathway for talent growth and enables general practice talents to integrate research with clinical work; and summarizing and exchanging specialized disease diagnosis and treatment technologies and research findings can further enhance comprehensive talent capabilities.

5. Effectiveness of Specialized Disease Diagnosis and Treatment Technology Construction

At the inception of developing general-specialty integrated specialized disease diagnosis and treatment technology, institutions should establish the "Six Ones" construction objectives as an overall design and evaluation metric: (1) One process: a general-specialty integrated clinical diagnosis and treatment process (including consultation and referral) based on specialized disease diagnosis and treatment guidelines and team consensus; (2) One specialized disease clinic: a general-specialty integrated specialized disease diagnosis and treatment clinic in the community; (3) One specialized disease database: collecting specialized disease case information, dynamically observing patient indicators and condition changes, and evaluating treatment effectiveness; (4) One set of specialized disease diagnosis and treatment health education materials for patients and families; (5) One lecture: developing a general practice clinical thinking course for general medical students and practicing community doctors by summarizing the development approach, pathways, and effectiveness of general-specialty integrated specialized disease diagnosis and treatment technology; and (6) One APP: a specialized disease management information system for community doctors and patients to register cases, conduct online consultations, and disseminate diagnosis and treatment information.

Many segments of society still perceive community health service institutions as merely "supplementary to tertiary hospital diagnosis and treatment," view general practitioners as having "broad but non-specialized knowledge," and lack clear, profound understanding of the meaning and development pathways of

general practice discipline construction. This article proposes a "4+1" technical characteristic development strategy through two general-specialty integration approaches: "4" refers to four aspects—identifying and constructing technical characteristics, conducting clinical problem-oriented scientific research, building technical brands, and base establishment—while "1" refers to achieving talent cultivation and growth through implementing these four strategies. Developing specialized disease diagnosis and treatment technology in communities holds significant developmental value and constructive importance for manifesting the person-centered philosophy of general practice, meeting public disease diagnosis and treatment needs, advancing general practice discipline construction, enhancing general practitioners' professional competence, and elevating primary health care capacity.

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Note: Figure translations are in progress. See original paper for figures.