Development Model and Optimization Strategies for Community General-Specialist Integrated Outpatient Clinics: Postprint

Authors: Shi Jianjun, golden flowers, Lu Yuan, Yu Dehua, Dehua Yu

Date: 2024-01-31T00:00:00+00:00

Abstract

Primary healthcare institutions in China exhibit relatively weak professional competencies and infrastructure among general practitioners (GPs), whereas specialists in general hospitals possess abundant resources yet limited time and energy. Enhanced integration of medical resources from community health institutions and general hospitals, along with strengthened collaboration between GPs and specialists, is imperative to safeguard healthcare quality and promote patient health. This article systematically reviews exemplary cases of GP-Specialist Integrated Clinic development domestically and internationally, elaborating on the concept' s origin, connotation, development models, existing challenges, and optimization strategies. It identifies potential challenges in constructing the management model for GP-Specialist Integrated Clinics and, in response to innovative regional practices and existing problems, proposes recommendations across five dimensions: improving institutional frameworks for GP-Specialist Integrated Clinic development, coordinating and standardizing clinical pathways, emphasizing performance incentives for integrated clinic teams, enhancing public acceptance, and refining clinical evaluation standards. These recommendations aim to provide a reference for the national advancement of community-based GP-Specialist Integrated Clinic initiatives.

Full Text

Construction Model and Optimization Strategy of Outpatient Clinics Combining General Practice and Specialty in the Community

SHI Jianjun^{1,2,3,4}, **JIN Hua**^{1,2,3,4}, **LU Yuan**^{1,2,3,4}, **YU Dehua**^{1,2,3,4}*

^{1} Department of General Practice, Tongji University School of Medicine, Shanghai 200090, China
^{2} Shanghai General Practice and Community Health Development Research Center, Shanghai 200090, China
^{3} Clinical Research Center for General Practice, Tongji University School of Medicine, Shanghai 200090, China
^{4} Academic Department of General Practice, Tongji University School of Medicine, Shanghai 200090, China

Corresponding author: YU Dehua, Chief physician/Professor/Doctoral supervisor; E-mail: ydh1404@sina.com

---

Abstract

The professional capacity and infrastructure of general practitioners (GPs) in China' s primary healthcare institutions are relatively weak, while specialists in general hospitals have limited time and energy but abundant resources. Further integration of medical resources between community health institutions and general hospitals, along with strengthened cooperation between GPs and specialists, is essential to ensure medical quality and promote patient health. This paper systematically reviews typical cases of GP-specialty integrated outpatient clinic construction both domestically and internationally, elaborating on the origin, connotation, construction models, existing problems, and optimization strategies of such clinics. It identifies potential challenges in constructing GP-specialty integrated outpatient clinic management models and proposes five recommendations based on innovative regional practices and existing problems: improving rules and regulations for clinic construction, coordinating and standardizing clinic pathways, emphasizing team performance incentives, enhancing public recognition, and refining evaluation standards for clinical outcomes. These recommendations aim to provide references for the national implementation of community-based GP-specialty integrated outpatient clinic construction.

Keywords: General practice; Hospitals, specialty; General practice-specialty collaboration; Practice patterns, physicians' ; Community health services; Construction model; Optimization strategy

---

Introduction

In December 2020, the Shanghai Municipal Health Commission issued the *Shanghai Community Hospital Construction Work Plan*, which stated that to promote community hospital construction and comprehensively enhance the capacity of community health service centers in Shanghai, priority should be given to improving community outpatient service capabilities and strengthening the GP-specialty integrated outpatient service model [1]. Building upon

primary diagnostic and treatment services delivered mainly through general practice, the plan emphasizes "GP-specialty integration" to effectively fulfill the foundational role of community health service centers in primary diagnosis, referral, and health management, thereby meeting residents' basic health service needs and promoting the establishment of a high-quality, efficient medical and health service system.

Currently, due to relative shortages of human and material resources in primary community health institutions and the relatively weak professional knowledge and capabilities of GPs, there is an urgent need to further enhance GPs' diagnostic and treatment competencies to better shoulder the responsibility of upgrading community health service centers [2]. The participation of specialists from general hospitals can serve as an excellent supplement to clinical practice for GPs in primary healthcare institutions. The establishment of "GP-specialty integrated" outpatient clinics can significantly improve community diagnostic capabilities and safeguard national health. This article reviews current construction models and optimization strategies for community GP-specialty integrated outpatient clinics both domestically and internationally.

1.1 Connotation of Community GP-Specialty Integrated Outpatient Clinics

GP-specialty integrated outpatient clinics aim to provide homogeneous diagnostic and treatment services comparable to specialty care in general hospitals, delivering medical services that reflect both community disease management elements and specialized diagnostic and treatment technologies. Current understanding of "GP" and "specialty" in this context is as follows: "GP" generally refers to community general medical services whose primary functions are to identify, diagnose, and treat health problems and common diseases within their scope of practice, and to provide referral services for patients with complex conditions. "Specialty" generally refers to specialized diagnosis and treatment conducted at the community level.

As understanding of general practice deepens and demands for primary healthcare services expand, the definition of GP-specialty integrated community diagnosis and treatment should encompass richer connotations. The "GP" in GP-specialty integrated outpatient clinics should refer to general practice teams in community health service institutions trained in general practice theory, while "specialty" should refer to either GPs developing expertise in specific clinical areas or "specialist teams from secondary-level and above medical institutions" collaborating with GPs in community-based specialized diagnosis and treatment.

Following this new concept of GP-specialty integration, such outpatient clinics have two main meanings: (1) Developing specialized diagnosis and treatment technologies based on community general health services—building upon general practice work, leveraging existing GPs' technical expertise and targeted training in specific technologies to conduct disease-specific diagnosis and treatment

for certain regionally prevalent diseases, thereby achieving GP-specialty integration; (2) Introducing specialist technologies from general hospitals to jointly conduct disease-specific diagnosis and treatment—based on regional disease spectrum characteristics, introducing experts from secondary and tertiary hospitals to collaborate with GPs in providing diagnosis and treatment technologies for specific diseases in the community.

1.2 Development of Community GP-Specialty Integrated Outpatient Clinics

The concept of GP-specialty integrated diagnosis and treatment emerged in the 20th century, beginning with enhanced collaboration between primary care institutions at different levels and later evolving to incorporate different specialties in assisting diagnosis and treatment. By the early 21st century, developed countries had continuously strengthened the supplementary role of specialized knowledge to GP diagnosis and treatment, making the GP-specialty integrated approach a new service model.

China' s GP-specialty integration concept started relatively late compared with Western countries. The concept of general practice was introduced to China in the 1980s and gradually developed. It was not until 2010 that some scholars proposed new approaches for joint management of chronic diseases between general hospitals and community institutions, drawing increasing attention to the GP-specialty integration concept [5]. In 2015, Shanghai launched a new round of community health service comprehensive reform, introducing the "1+1+1" contracted service model [6], where residents voluntarily select one community health service center family doctor, plus one district-level and one municipal medical institution for contracting. This model effectively integrated GP and specialty medical resources, promoted rational and orderly referrals, and advanced the implementation of tiered diagnosis and treatment, formally proposing and widely studying the "GP-specialty integrated diagnosis and treatment model."

Since December 2020, Shanghai' s promotion of community hospital construction has gradually expanded the scope of GP-specialty integrated outpatient services to chronic disease management, maternal and child health care, health examinations, and other fields. Diversified GP-specialty integrated outpatient approaches have broken single-discipline limitations and fully met community residents' health needs, marking a new development stage for the GP-specialty integration model.

2 Significance of Community GP-Specialty Integrated Outpatient Clinic Construction

2.1 Supplementing and Consolidating the Primary Healthcare Service Network Compared with traditional GP or specialty outpatient clinics, community GP-specialty integrated outpatient clinics can incorporate specialists,

medical technologies, and related resources from secondary and tertiary medical institutions into the community diagnosis and treatment process, guiding patients to seek care in the community and enabling more precise and rational disease diagnosis and treatment at the community level, while achieving population triage during the community visit process [7]. Since patients currently have the right to freely choose medical institutions, they tend to select GP-specialty integrated outpatient clinics with expert physicians and superior treatment capabilities. Additionally, medication availability in community health institutions is restricted and cannot fully meet the needs of some patients, especially those with chronic diseases. The establishment of GP-specialty integrated outpatient clinics provides a feasible alternative for these patients.

2.2 Enhancing GPs' Professional Competence and Optimizing Specialists' Practice Through interviews, SAILLANT et al. [8] found that both GPs and experts from general hospitals considered community GP-specialty integrated diagnosis and treatment an excellent method for improving GPs' professional skills, and that this new service model benefits patients. For GPs, during the process of providing disease-specific services in GP-specialty integrated outpatient clinics, fully integrating disease-specific medical resources, receiving technical support from superior hospital experts, conducting regular business training in primary hospitals, participating in teaching rounds, and holding regular clinics can effectively enhance their understanding of specialized diseases, keep them updated on the latest developments in various disciplines, and improve their clinical capabilities in disease-specific diagnosis and treatment [9]. For specialists, GP-specialty integrated outpatient clinics promote vertical linkage between specialists from general hospitals and community GPs, thereby enhancing specialists' abilities in patient follow-up and tracking management [10]. Communication and collaboration between GPs and specialists will drive standardized disease management in community health institutions and effectively improve GPs' diagnostic and treatment capabilities and academic levels in disease management.

2.3 Simplifying Patient Visit Procedures and Promoting Health Management Community GP-specialty integrated outpatient clinics can greatly simplify patients' diagnosis and treatment processes. MEYERS et al. [11] evaluated the impact of the GP-specialty integrated model on chronic disease costs and found that GP-specialty teams effectively improved clinical care outcomes, particularly for chronic disease patients. Leveraging GPs' advantage of being rooted in the community, patients can receive professional services and guidance in GP-specialty integrated outpatient clinics. After eliminating unnecessary examinations and treatment procedures as much as possible, patients can achieve treatment quality comparable to specialized care in general hospitals while reducing the number of visits to general hospitals and saving time. This is particularly suitable for chronic disease patients with frequent medical needs and high requirements for care quality.

2.4 Strengthening General Practice Discipline Construction and Enhancing Community Health Service Capacity As a comprehensive clinical discipline, general practice' s primary task in discipline construction is to provide clinical diagnosis and treatment services, using this as an entry point. Implementing community GP-specialty integrated outpatient clinics as a specific measure for general practice discipline construction can effectively promote the discipline' s development. Simultaneously, GP-specialty integrated outpatient clinics enable patients with common diseases/multiple diseases to receive characteristic diagnosis and treatment in the community that is comparable to general hospitals, thereby truly enhancing the capacity of community health services.

3 Construction Models of Community GP-Specialty Integrated Outpatient Clinics at Home and Abroad

3.1 International Construction Models International GP-specialty integrated outpatient clinics primarily involve collaboration between GPs and specialists, with three main models: joint consultation centers, internet-based information platforms, and GPs expanding into special interest areas.

3.1.1 Establishing Patient Needs-Oriented Joint Consultation Centers The joint consultation center model is disease-oriented, establishing GP-specialty integrated consultation centers in communities with dedicated offices staffed by GPs and invited specialists. For example, joint consultation service centers have been established for orthopedic diseases, rheumatism, diabetes, and other conditions. VIERHOUT et al. [12] described joint consultation methods between GPs and specialists for orthopedic diseases in primary healthcare. When GPs are uncertain about patient diagnosis and treatment, they schedule appointments with specialists participating in the joint clinic, inviting them to the GP-specialty integrated outpatient office to diagnose and treat patients together with GPs. After comprehensive assessment in the GP-specialty integrated outpatient clinic, patients requiring further specialized treatment are immediately referred to superior hospitals; if no referral is needed, a clear diagnosis and treatment plan is established and patients continue follow-up treatment in the community [13]. VLEK et al. [14] noted that joint consultations between GPs and cardiologists in primary care are an effective method that can reduce referral rates and improve referral rationality. Moreover, GP-specialty integrated outpatient clinics can provide care equivalent to that of superior medical institutions, benefiting patients requiring specialized care.

3.1.2 Internet-Based Information Platforms for GP-Specialist Collaboration GIACOMO [15] surveyed communication between GPs and specialists regarding patient information across 34 countries, finding significant variations in communication between GPs and medical specialists. Internet-based information platforms ensure smooth communication channels, benefiting both patient care and physician referral processes. By connecting patients, GPs, and

specialists through internet platforms, patients can simultaneously receive advice from both GPs and specialists, improving their health care levels. During referrals, coordination between GPs and specialists improves referral efficiency [16]. Information exchange between GPs and specialists regarding patients is a crucial component, and internet platforms ensure smooth communication, avoiding fragmented care and enabling higher-quality care and physician-patient satisfaction.

3.1.3 GPs Expanding into Special Interest Areas The model of GPs expanding into special interest areas involves community GPs building upon their professional foundation to focus on areas of interest (such as palliative care, emergency medicine, sports medicine) through intensive study and practice, gradually becoming experts in specific fields and achieving diagnostic and treatment effects comparable to specialists. This model is prevalent in Canadian primary healthcare. For example, LEONE [17] conducted a questionnaire survey on headache treatment between GPs and neurology specialists in central London, establishing training for GPs with special interests (GPwSI), and found that GPwSI services could fully meet patient needs at lower costs than secondary healthcare services in general hospitals.

3.1.4 GPs Joining Multidisciplinary Teams The GP-specialty integrated model of GPs joining multidisciplinary teams incorporates GPs into expert teams established at community-based service points, leveraging GPs' unique roles to achieve integrated diagnosis and treatment. For example, AYATAKA [18] found that including general physicians in multidisciplinary epilepsy treatment teams may increase patient economic benefits, as patients can receive help from GPs in the community to manage their epilepsy, demonstrating the management advantages of GP-specialty integrated care over specialized treatment alone.

3.2 Domestic Construction Models Community GP-specialty integrated outpatient clinics have been implemented for a relatively short time in China, yet numerous studies have confirmed that this management approach benefits GPs' professional knowledge and skills and rationalizes medication use, representing an effective direction for medical reform. Currently, primary community health institutions have established GP service teams comprising GPs, specialists, psychological counselors, nursing specialists, exercise rehabilitation therapists, and other professionals, developing various approaches to GP-specialty integrated outpatient clinics.

3.2.1 Joint Management Between General Hospitals and Communities The GP-specialty integrated outpatient clinic model of joint management between general hospitals and communities involves division of labor and cooperation between general hospital specialists and community GPs, with each completing diagnostic and treatment services within their scope. For example, in

2010, SHENG Guoan et al. [5] initiated a hospital-community joint management model for chronic heart failure patients, marking the beginning of chronic disease GP-specialty integrated management at the primary level. In 2015, Chaoyang Hospital launched a "GP-specialty integration" chronic disease management team to promote tiered diagnosis and treatment. Using chronic diseases as an entry point, the model establishes two-way referral channels between general hospitals and community health service institutions and between GPs and specialists, enabling directional referrals and guiding chronic disease patients back to the community. QIAN Liqun [19] proposed a community atrial fibrillation "GP-specialty integration" prevention and treatment model in Shanghai' s Xuhui District Fenglin Street Community Health Service Center, where the community and Zhongshan Hospital jointly managed patients, improving community physicians' standardized atrial fibrillation diagnosis and treatment capabilities and cultivating disease-specific physicians for community atrial fibrillation management. This GP-specialty integrated model enables treating physicians to more comprehensively grasp patients' disease conditions and facilitates effective GP-specialist interface, helping to further standardize community diagnosis and treatment behaviors and enhance community disease management capabilities.

3.2.2 Specialist Clinics in Communities by General Hospital Experts Some communities implement GP-specialty integrated outpatient clinics through general hospital specialists holding clinics in community health service centers. The core of this model is the general hospital specialist, with community GPs participating as team members to improve diagnostic and treatment quality through expert-led arrangements. Typical cases include: Guangzhou Haizhu District Longfeng Street Community Health Service Center developing characteristic specialist medical services by establishing ophthalmology and otolaryngology disease-specific clinics [20]; Shanghai Lingqiao Community Health Service Center developing traditional Chinese medicine characteristic disease-specific technologies with regular clinics held by experts from Shanghai Shuguang Hospital, receiving universally positive feedback.

3.2.3 GPs Developing Community Characteristic Disease-Specific Services The model of GPs developing characteristic disease-specific services uses community GPs as the main providers, with GPs initiating and undertaking primary diagnostic and treatment responsibilities in GP-specialty integrated outpatient clinics, while other specialists and nursing staff serve as supplements to form community characteristic GP-specialty integrated outpatient teams. For example, LIU Weifang [21] from Shanghai Jiading District Nanxiang Town Community Health Service Center studied the impact of the GP-specialty integrated model on blood pressure control rates in patients with refractory hypertension, finding the model' s effects to be relatively remarkable, helping to ensure optimal blood pressure control outcomes and significantly improving hypertension treatment effectiveness. CHENG Zhiying et al. [22] implemented GP-specialty integrated management for diabetic retinopathy patients in

Shanghai Songjiang District Xinqiao Town Community Health Service Center, finding the model' s application effective in improving patients' vision and glycated hemoglobin target achievement rates.

4 Challenges in Community GP-Specialty Integrated Outpatient Clinic Construction

4.1 Lack of Policies and Standards for Clinic Construction China currently lacks overarching policies and systems for GP-specialty integrated outpatient clinic construction [21]. There are no unified guiding policies or scientific practice methods for implementing these clinics. As primary providers in community health institutions, GPs' decisions about whether patients need specialist care often depend on their comprehensive assessments. However, current GPs' clinical capabilities vary, and there is still no evaluation system suitable for assessing GPs' clinical competencies. Moreover, collaboration between community health institutions and general hospitals often lacks key responsibility agreements. Research indicates [23] that some GPs and specialists have unclear responsibilities in collaborative practice, which may adversely affect clinical treatment quality and lead to more unnecessary emergency visits, inappropriate transfers, and avoidable inpatient deaths. Therefore, establishing construction norms and systems for community GP-specialty integrated outpatient clinics has become an urgent task.

4.2 Lack of Unified Practice Models Currently, various regions are independently exploring GP-specialty integrated outpatient clinic approaches suitable for their local conditions, with different organizational pathways and varying effectiveness. For example, Shanghai Xuhui District Fenglin Street Community Health Service Center established an atrial fibrillation disease-specific clinic [24], led by an experienced GP deputy chief physician who, after training in a general hospital, independently conducted two-way referrals and atrial fibrillation management. DAI Huimin [25] established a dedicated diabetes specialist clinic in Weifang Community Health Service Center, where endocrinologists and GPs jointly held clinics at scheduled times, with contracted family doctors as the main providers and endocrinologists providing guidance and supplementation. These two different GP-specialty integrated outpatient approaches have different focuses on specialist assistance due to varying community conditions, with respective advantages and disadvantages in patient outcomes, medical resource investment, and implementation methods. However, without scientific evaluation protocols and standardized construction norms, it is impossible to determine which approach is more scientific and effective, preventing the establishment of a standardized, unified organizational model for GP-specialty integrated outpatient clinics.

4.3 Lack of Sustainable Performance Incentive Mechanisms Currently, GP-specialty integrated outpatient clinic work is not matched with individual

physician performance, resulting in insufficient motivation for sustained participation [26]. Reasonable performance evaluation and incentive mechanisms should be established to promote win-win outcomes for GP-specialty integrated medical teams and medical institutions, advancing the long-term sustainable development of the GP-specialty integrated outpatient model. How to protect the legitimate rights and interests of all stakeholders—including community health institutions, leading departments in general hospitals, and various parties involved in establishing GP-specialty integrated outpatient clinics—has become an important factor in maintaining the sustainable service capacity of these clinics.

4.4 Uneven Regional Development Public awareness and recognition of GP-specialty integrated outpatient clinics remain low in China, with unbalanced patient participation across regions [27]. ZHU Qiong [28] from Shanghai Xuhui District Kangjian Street Community Health Service Center analyzed the practical effects of the GP-specialty integrated diagnosis and treatment model and concluded that its implementation still has some distance to go from achieving the goal of comprehensively transforming traditional healthcare-seeking concepts and establishing rational, orderly medical care. Additionally, due to varying degrees of government emphasis on community GP-specialty integrated outpatient services across regions, clinic construction progress differs. Some local governments' insufficient recognition of the importance of health reforms in primary healthcare institutions directly affects the introduction of relevant policies, implementation of financial compensation, and progress of various reforms [29], leading to unbalanced development of GP-specialty integrated outpatient clinics across different regions.

4.5 Lack of Evaluation Systems for GP-Specialty Integrated Outpatient Clinics The service level of community GP-specialty integrated outpatient clinics is primarily judged by the quality of medical services they provide. However, evaluation criteria involve subjective, technical, and social characteristics [30] that collectively influence patients' experiences and ultimately their evaluation of service quality. Currently, with rapid development of GP-specialty integrated outpatient clinics, there are no research reports on construction evaluation protocols or related evaluation indicator systems, nor research findings on practical effectiveness, making it urgent to improve the evaluation system for these clinics.

5 Optimization Strategies

5.1 Establishing and Improving Rules and Regulations for Community GP-Specialty Integrated Outpatient Clinic Construction Based on the "*Healthy China 2030*" *Planning Outline* [31] and combined with domestic and international experiences and effectiveness in implementing GP-specialty integrated outpatient clinics, guidelines for constructing these clinics in primary communities should be formulated. The responsibilities and functional

positioning of GPs and specialists should be clarified, and division-of-labor cooperation mechanisms should be established—for example, GPs responsible for patients with clear diagnoses and treatment plans, and specialists responsible for patients with complex conditions requiring specialized surgery. The *Guiding Opinions on Promoting the Construction and Development of Medical Consortia* issued by the General Office of the State Council in 2017 will help establish a standardized system for GP-specialty integrated outpatient clinics. Government support should be provided to community health institutions in terms of policies and regulations. In the process of "strengthening primary healthcare," policy guidance should be combined with increased support for talent cultivation, incentives, and utilization for those dedicated to developing community GP-specialty integrated outpatient clinics [26].

5.2 Coordinating and Standardizing GP-Specialty Integrated Outpatient Clinic Models Coordinated and standardized GP-specialty integrated outpatient clinic models facilitate rapid, large-scale practical implementation. Based on existing typical cases of GP-specialty integrated outpatient clinics at home and abroad, the following construction models are proposed: (1) Community GPs develop specialized diagnosis and treatment capabilities while providing general practice services, establishing community GP-specialty integrated outpatient clinics with senior community GPs as the core, general hospital specialists participating in guidance, GPs as the main force responsible for disease diagnosis and management, and specialists providing consultation, guiding treatment plans, and conducting regular specialized technical lectures. (2) Community GP teams and general hospital specialist teams jointly hold clinics, establishing GP-specialty integrated outpatient clinics in communities. Relying on regional medical consortia or the "1+1+1" contracted service system, general hospital experts and community GPs jointly participate to establish GP-specialty integrated teams, achieving rational allocation of regional medical resources and downward flow of high-quality medical resources through vertical integration of medical institutions.

5.3 Improving Incentive Schemes for Community GP-Specialty Integrated Outpatient Clinics Reasonable performance evaluation and incentive mechanisms for GP-specialty integrated team members can effectively promote participants' work enthusiasm. For example, in terms of financial support: establishing position allowance systems. In Shanghai' s Pudong New Area, different incremental assessment rewards are provided for GPs, public health physicians, other clinical physicians, and other health technicians in community health service centers across four types of regions [32], increasing the proportion of performance-based wages. Reasonable allowance systems and performance support are strong guarantees for the sustainability of community GP-specialty integrated outpatient clinics.

5.4 Enhancing Public Recognition and Reducing Regional Development Imbalances Currently, community residents have low awareness of GP-specialty integrated outpatient clinics and make arbitrary choices among different clinics, with convenience and disease outcomes being important criteria. To enhance public recognition, publicity about community GP-specialty integrated outpatient clinics should be strengthened to clarify their advantages, such as easier access to general hospital specialists, more convenient referrals, and access to examination equipment and medications not available in ordinary clinics [33]. Simultaneously, appropriate target populations should be selected, such as patients requiring chronic disease management, to gain their recognition through meticulous, comprehensive, and continuous disease management plans. Based on China' s national conditions, people-centered, demand-oriented, and context-adapted approaches that emphasize regional development differences and timely policy adjustments will significantly promote GP-specialty integrated outpatient clinic construction.

5.5 Establishing Evaluation Systems for GP-Specialty Integrated Outpatient Clinics Developing evaluation systems that meet China's community diagnosis and treatment requirements is the driving force for promoting GP-specialty integrated outpatient clinic construction. As a new medical service model, although GP-specialty integrated outpatient clinics have proven advantages in reducing referral rates, improving diagnostic efficiency, and enhancing GPs' professional knowledge and skills [34], whether they can better improve patient health outcomes and convenience for community residents requires further research. Establishing and improving evaluation standards for GP-specialty integrated outpatient clinic quality will help optimize practice methods [35].

In summary, by selecting scientific and comprehensive evaluation indicators to construct objective and accurate standards reflecting the quality of GP-specialty integrated outpatient medical services, the credibility of clinic quality can be enhanced, enabling GP-specialty integrated teams to identify problems and obtain solutions, providing a basis for the healthy and sustainable development of community GP-specialty integrated outpatient clinics.

Author Contributions: JIN Hua and YU Dehua proposed the research concept and designed the study protocol; SHI Jianjun was responsible for implementation; LU Yuan and YU Dehua reviewed the manuscript; SHI Jianjun was responsible for final revision and accountability for the manuscript.

Conflict of Interest: The authors declare no conflict of interest.

YU Dehua: https://orcid.org/0000-0001-7652-938X

References

[1] Shanghai Municipal Health Commission. Notice on Issuing the *Shanghai Community Hospital Construction Work Plan* [EB/OL]. [2020-12-31]. https://wsjkw.sh.gov.cn/jcws2/20201231/8381ffad701444babec49fbf7e08581a.html.

[2] YOU Lili, ZHAO Jinhong, CHEN Xinyue, et al. Ten-year evaluation of the National Essential Public Health Services Program (2009-2019) series report (II) —Progress and achievements of the National Essential Public Health Services Program in ten years of implementation [J]. Chinese General Practice, 2022, 25(26): 3209-3220. DOI: 10.12114/j.issn.1007-9572.2022.0407.

[3] AKBARI A, MAYHEW A, AL-ALAWI M A, et al. Interventions to improve outpatient referrals from primary care to secondary care [J]. Cochrane Database Syst Rev, 2008, 2008(4): CD005471. DOI: 10.1002/14651858.CD005471.pub2.

[4] GUTKIN C. Combining our skills to strengthen our future: family physicians with special-interest and focused practices [J]. Can Fam Physician, 2008, 54(8): 1200, 1199.

[5] SHENG Guoan, WANG Yibo, WANG Li, et al. Study on hospital-community joint standardized prevention and treatment of chronic heart failure [J]. Cardio-Cerebrovascular Disease Prevention and Treatment, 2010, 10(1): 54-56. DOI: 10.3969/j.issn.1009-816X.2010.01.024.

[6] Central Government Portal. Shanghai releases 2015 medical reform key points [EB/OL]. [2015-02-27]. http://www.gov.cn/xinwen/2015-02/27/content_{2822238}.htm.

[7] CHENG Jie, XU Xiangtian, WANG Zhe, et al. Study on the medical consortium "GP-specialty integration" chronic disease management model and its role in implementing tiered diagnosis and treatment [J]. Chinese General Practice, 2018, 21(34): 4178-4182. DOI: 10.12114/j.issn.1007-9572.2018.34.004.

[8] SAILLANT S, HUDELSON P, DOMINICÉ DAO M, et al. The primary care physician/psychiatrist joint consultation: a paradigm shift in caring for patients with mental health problems? [J]. Patient Educ Couns, 2016, 99(2): 279-283. DOI: 10.1016/j.pec.2015.08.028.

[9] WEI Xinping, QIU Jin, PAN Zhigang, et al. Construction and preliminary effectiveness of a community-based "GP-specialty integration" prevention and treatment model for chronic obstructive pulmonary disease based on research [J]. Chinese Journal of General Practitioners, 2019, 18(1): 89-91. DOI: 10.3760/cma.j.issn.1671-7368.2019.01.023.

[10] LUO Zhaoyang, LIU Li. Investigation on cognition of two-way referral among doctors and patients in a medical consortium in Chongqing [J]. Chinese General Practice, 2020, 23(12): 1535-1540.

[11] MEYERS D J, CHIEN A T, NGUYEN K H, et al. Association of Team-Based Primary Care With Health Care Utilization and Costs Among Chronically

III Patients [J]. Jama Internal Medicine, 2019, 179(1): 54-61.

[12] VIERHOUT W P, KNOTTNERUS J A, VANOOIJ A, et al. Effectiveness of joint consultation sessions of general practitioners and orthopaedic surgeons for locomotor-system disorders [J]. Lancet (London, England), 1995, 346(8981): 990-4.

[13] G J C SCHULPEN W V, D M VAN DER HEIJDE, R B LANDEWÉ, et al. Joint consultation of general practitioner and rheumatologist: does it matter? [J]. Extended Report, 2003, (62).

[14] VLEK J F, VIERHOUT W P M, KNOTTNERUS J A, et al. A randomised controlled trial of joint consultations with general practitioners and cardiologists in primary care [J]. The British journal of general practice: the journal of the Royal College of General Practitioners, 2003, 53(487): 108-12.

[15] SCAIOLI G, SCHAFER W L A, BOERMA W G W, et al. Communication between general practitioners and medical specialists in the referral process: a cross-sectional survey in 34 countries [J]. Bmc Fam Pract, 2020, 21(1): 54.

[16] LIU Lixia, LIAO Xiaoyang, WU Jia, et al. Research progress on GP-specialist joint clinics [J]. Chinese Journal of Hospital Administration, 2019, (11): 915-918.

[17] RIDSDALE L, DOHERTY J, MCCRONE P, et al. A new GP with special interest headache service: observational study [J]. Br J Gen Pract, 2008, 58(552): 478-483. DOI: 10.3399/bjgp08X319440.

[18] FUJIMOTO A, ICHIKAWA N, SATO K, et al. Inclusion of general physicians in the multidisciplinary treatment team for epilepsy may lead to an economic benefit [J]. Epilepsy Behav, 2019, 95: 56-60. DOI: 10.1016/j.yebeh.2019.03.041.

[19] QIAN Liqun, XU Liping, TU Liping, et al. Construction and preliminary effectiveness of a community atrial fibrillation tiered diagnosis and treatment "GP-specialty integration" prevention and treatment model within a medical consortium [J]. World Latest Medicine Information, 2021, 21(83): 336-337, 341. DOI: 10.3969/j.issn.1671-3141.2021.83.165.

[20] XIA Chu. GP-specialty integration, forging ahead with determination, accelerating innovative development [J]. Chinese Community Doctors, 2020, 36(12): 191. DOI: 10.3969/j.issn.1007-614x.2020.12.110.

[21] LIU Weifang, GE Lingyu, CHEN Xin, et al. Analysis of the application effect of the "specialist-GP-patient" integration model in patients with refractory hypertension [J]. Shanghai Medical & Pharmaceutical Journal, 2021, 42(22): 41-44. DOI: 10.3969/j.issn.1006-1533.2021.22.012.

[22] CHENG Zhiying, PAN Xiuping, LU Fei, CHENG Pan. Application effect of the GP-specialty integration model in patients with diabetic retinopathy [J]. Chinese General Practice: 24-26.

[23] ZHANG Qian. Effect of GP-specialty integration comprehensive intervention on related indicators of primary osteoporosis in elderly populations in some Shanghai communities [D]. Shanghai: Shanghai Jiao Tong University, 2020.

[24] WANG Lifei, LIAO Xiaoyang, LIU Changming, et al. Construction of an integrated atrial fibrillation management model with "GP-specialty integration" within a medical consortium [J]. Chinese Journal of General Practitioners, 2020, 19(10): 957-961. DOI: 10.3760/cma.j.cn114798-20200607-00686.

[25] DAI Huimin, LIU Wei, WU Peihong, et al. Study on the collaborative management model and current implementation status of "GP-specialty" tiered diagnosis and treatment for type 2 diabetes [J]. Chinese General Practice, 2018, 21(10): 1188-1192. DOI: 10.3969/j.issn.1007-9572.2018.10.009.

[26] WANG Rongying, HE Zhenyin, ZHAO Wenwen, et al. Research progress in chronic disease management [J]. Chinese General Practice, 2016, 19(17): 1989-1993. DOI: 10.3969/j.issn.1007-9572.2016.17.001.

[27] YANG Mei, JIA Wenjie. Discussion on the intervention practice effect of family doctors on refractory hypertension under the GP-specialty integration model in community hospitals [J]. Chinese Community Doctors, 2020, 36(27): 74-75. DOI: 10.3969/j.issn.1007-614x.2020.27.036.

[28] ZHU Qiong, ZHU Yan, SUN Ya, et al. Exploration and research on the GP-specialty integrated diagnosis and treatment model based on medical consortium architecture [J]. Shanghai Medical & Pharmaceutical Journal, 2022, 43(8): 7-10, 31. DOI: 10.3969/j.issn.1006-1533.2022.08.003.

[29] SHAWenya, ZHU Huirong. Analysis and improvement suggestions on the operation status of the "disease-specific clinic model"in community GP-specialty cooperation [J]. Health Management, 2021, (19): 121-124.

[30] YING Meike, LIU Ying, REN Jingjing. Study on specialists' attitudes toward GPs developing subspecialty expertise [J]. Chinese General Practice, 2019, 22(16): 1936-1939. DOI: 10.12114/j.issn.1007-9572.2019.00.288.

[31] Central Committee of the Communist Party of China and State Council. "*Healthy China 2030*"*Planning Outline* [EB/OL]. http://www.gov.cn/zhengce/2016-10/25/content_{5124174}.htm.

[32] ZHOU Rui, ZHAO Kun, QI Xueran. Discussion on several key aspects of current tiered diagnosis and treatment work in China [J]. Chinese General Practice, 2016, 19(10): 1116-1119. DOI: 10.3969/j.issn.1007-9572.2016.10.002.

[33] HUANG Shuangqing, PAN Yufeng, ZHOU Min, et al. Effectiveness evaluation of "GP-specialty"integrated team community management of stable chronic obstructive pulmonary disease [J]. Shanghai Medical & Pharmaceutical Journal, 2021, 42(2): 59-62.

[34] SEIERSTAD T G, BREKKE M, TOFTEMO I, et al. GPs'and child and adolescent psychiatry specialists'experiences of joint consultations in the GP's office:

a qualitative study [J]. BMC Res Notes, 2017, 10(1): 458. DOI: 10.1186/s13104-017-2765-4.

[35] VAN LEEUWEN A, WIND J, VAN WEERT H, et al. Experiences of general practitioners participating in oncology meetings with specialists to support GP-led survivorship care; an interview study from the Netherlands [J]. Eur J Gen Pract, 2018, 24(1): 171-176. DOI: 10.1080/13814788.2018.1478960.

(Received: October 2, 2023; Revised: January 24, 2024)

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