

Research Article

New Directions, New Perspectives, and New Pathways in the Development of Subspecialties in General Medicine

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Abstract

Research Background: General medicine integrates content from clinical medicine, rehabilitation medicine, and social humanities. In the field of clinical medicine, its horizontal scope encompasses internal medicine, surgery, obstetrics and gynecology, pediatrics, emergency medicine, and other related disciplines. **Research Objectives:** The subspecialty development of general medicine aims to establish a specialized field with distinctive features based on the foundation of general medicine. It provides an explanation for the in-depth development and research in general medicine. This approach makes it easier to retain and attract outstanding talents, fully unleashing the interests of general practitioners. The development of subspecialties in general medicine aligns with the practical needs of China's primary healthcare institutions. It seeks to break the deadlock of general medicine being broad but not precise, addressing issues such as reducing patient medical expenses, improving patient satisfaction, and truly solving difficulties in seeking medical care. This allows large specialized hospitals to focus on researching tumor diseases and various specialized surgical procedures, thereby enhancing the diagnosis and treatment rates of tumors and rare diseases. **Research Results:** With the progress and practical experiences in society, the development of subspecialties in general medicine is set to become a goal, a new direction, a new perspective, and a new pathway for the global development of primary healthcare institutions. **Research Conclusions:** Cultivating doctors with expertise in subspecialties of general medicine for grassroots healthcare is essential to address the spectrum of specialized diseases, truly embodying a patient-centric approach and ensuring tangible benefits for patients. Currently, the development of subspecialties in general medicine is still in the exploration stage.

Keywords

General Medicine, Subspecialty of General Medicine, Specialized Features, Development, New Directions, New Perspectives, New Pathways

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1. Introduction

The Development Foundation of Subspecialties in General Medicine. Since the development of general medicine in China until the establishment of a complete system in 2020, there has been a basic realization of having 2-3 qualified general practitioners per 10,000 residents in urban and rural areas. The services primarily focus on the diagnosis and treatment of common and prevalent internal medicine diseases [1], with limited provision of surgical disease management and skills. Currently, only 8% of the total number of doctors in China are engaged in general medical practice (excluding preventive healthcare physicians), in contrast to 34% in the United States, 50% in the United Kingdom, and 50% in Canada [2]. Although the number of registered general practitioners in China is relatively low compared to other countries, it has gradually increased over time, contributing to a certain level of supplementation of general practitioners in primary healthcare institutions. This has indeed alleviated difficulties in seeking medical care and reduced certain costs. However, the prevailing perception in domestic primary healthcare institutions is that general practitioners can treat any disease, leading to a lack of precision, depth, and specialization. General practitioners in China are often regarded as secondary doctors even by specialists. This hierarchical distinction creates a perception of general practitioners being lower in status than other specialists. Therefore, the development of subspecialties in general medicine is deemed necessary. It represents a new direction, a new mindset, and a new pathway for the development of general medicine. Currently, there is minimal emphasis on the de-

velopment of subspecialties in general medicine and the training of doctors in this field, with scarce related literature available.

2. Research Methodology

We conducted an analysis using clinical data from the General Medicine Center at Luodu Town Central Health Center in Yuechi County, Sichuan Province.

3. Research Results

Combining the analysis of the overall discharge situation at Luodu Town Central Health Center in Yuechi County, Sichuan Province, from January 1, 2023, to December 31, 2023, respiratory system diseases accounted for the highest proportion at 30%, predominantly involving chronic obstructive pulmonary disease. Cardiovascular system diseases followed at 15%, mainly comprising coronary heart disease and heart failure. Digestive system diseases accounted for 12%, with chronic gastritis being the most prevalent. Pediatric and neurological diseases both accounted for 11%, while surgical diseases represented 7%. Genitourinary and musculoskeletal system diseases each accounted for 4%, and the proportion of cancer-related diseases was 2%. Gynecological diseases constituted 1%, and the number of blood system disease discharges throughout the year was 2, which is statistically insignificant, as shown in Figure 1.

Distribution map of diseases in each system in Luodu Town Central Hospital in 2023

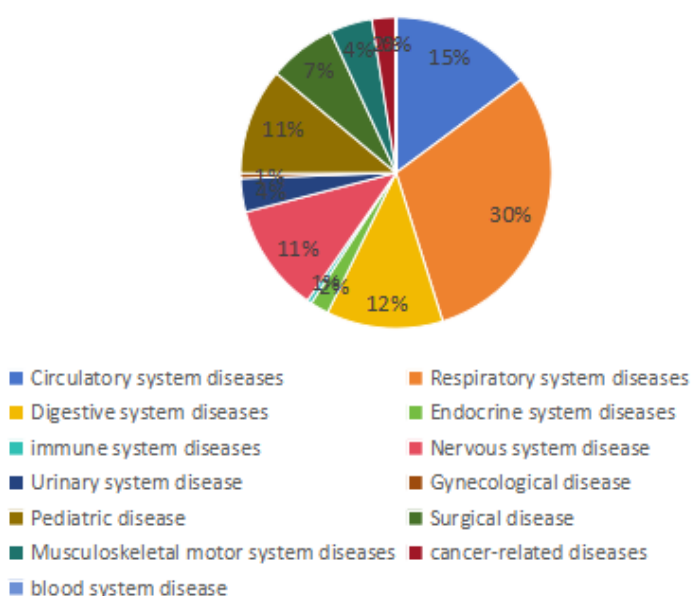


Figure 1. Distribution map of diseases in each system in LuoduTown Central Hospital in 2023.

Looking at the average age of patients for each system, respiratory, cardiovascular, digestive, endocrine, immune, neurological, and cancer-related diseases had an average age range of 68-73 years. In contrast, genitourinary, surgical, and musculoskeletal system diseases had an average age around 60 years, indicating a younger onset of diseases. Pediatric diseases had an average age of 7 years, with the highest hospitalization rate at 3 years, primarily due to respiratory symptoms, as depicted in Figure 2.

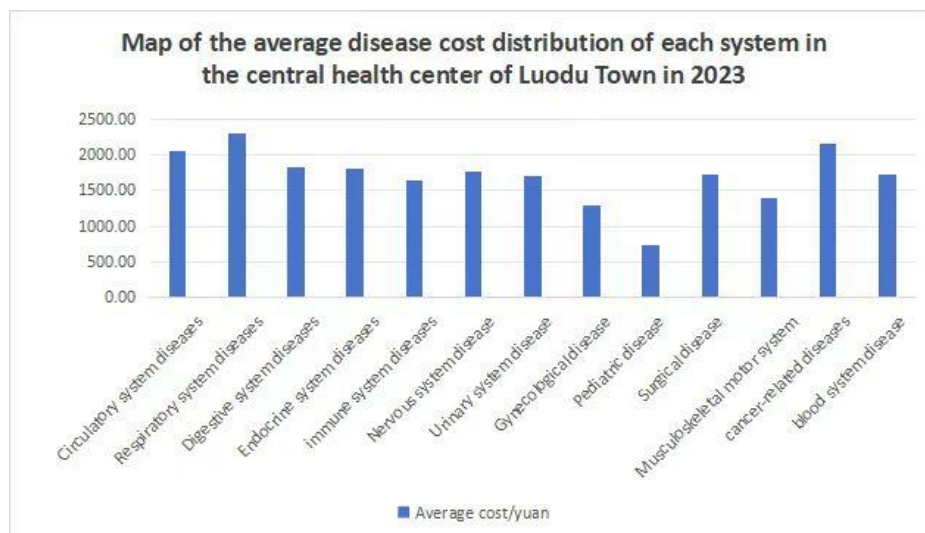


Figure 2. The average age distribution map of diseases in each system in the central health center of Luodu Town in 2023.

Examining the average hospitalization costs for diseases in each system, respiratory system diseases had the highest average hospitalization cost at 2310.69 yuan per person. The average hospitalization cost for cancer-related diseases was 2155.91 yuan per person, and cardiovascular system diseases had an average cost of 2052.64 yuan per person. The hospitalization costs for digestive, endocrine, immune, neurologi-

cal, and surgical diseases ranged from 1645.2 to 1818.9 yuan per person. Musculoskeletal system diseases had an average hospitalization cost of 1388.71 yuan per person, gynecological diseases had an average cost of 1298.53 yuan per person, and pediatric diseases had the lowest hospitalization cost at 733.35 yuan per person, as illustrated in Figure 3.

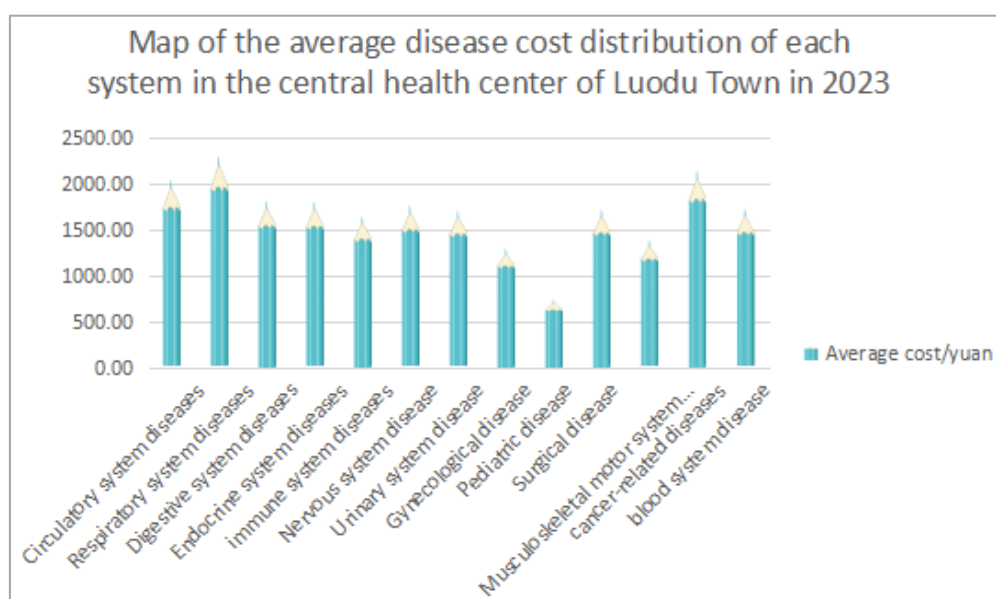


Figure 3. Map of the average disease cost distribution of each system in the central health center of Luodu Town in 2023.

The health center is recognized as one of the top 100 health centers in Sichuan Province. The internal medicine department has 8 doctors, including 2 associate chief physicians (1 in internal medicine and 1 in pediatrics), 4 attending physicians, and 3 resident physicians (1 practicing physician and 2 practicing assistant physicians). The surgery department has 4 doctors, the rehabilitation department has 6 doctors, and the emergency department has 5 doctors. The public health department has 1 doctor. In total, there are 9 general practitioners engaged in clinical work, with the majority working in internal medicine and a shortage of skills in surgery and emergency services.

4. Discussion

In the early establishment of general medicine in China, general practitioners were primarily specialists who switched to general practice, with a predominant focus on internal medicine [3]. This tendency has led to the development of general medicine having an internal medicine orientation [4]. Surgeons and other specialists are less inclined to transition to general practitioners. Therefore, one of the current challenges in general medicine is that all general medicine doctors tend to develop into roles resembling internal medicine specialists, leaving general practitioners with limited skills and knowledge in surgery, emergency care, and pediatrics [5]. At the grassroots level, various diseases, both minor and major, are encountered. However, general practitioners often lack skills and deep knowledge in specialties other than internal medicine, making it challenging to address practical issues at the grassroots level [6-9]. These clinical problems could be effectively handled by doctors specializing in subspecialties within general medicine. This constitutes the second difficulty in general medicine, as the inability to manage common diseases in other specialties may cause general practitioners to lose confidence and lead to the attrition of talented individuals interested in specific specialties. In primary care general medicine, due to a lack of precision in many skill areas, low income, and minimal subsidies, there exists a third challenge. This exacerbates the loss of excellent talent in general medicine. Subspecialties in general medicine represent an extension of general medicine. To restore confidence among general practitioners, enhance their ability to address clinical diseases in subspecialties, and reduce patient costs while improving satisfaction, the development of subspecialties in general medicine is positioned as the future direction [10-13]. How to cultivate doctors in subspecialties within general medicine? Based on the foundation of general medicine courses, doctors can choose to specialize according to their interests and preferences. This is the cornerstone of the development of subspecialties in general medicine. Doctors in subspecialties within general medicine, who have interests, are willing to endure hardship, and are committed to developing their skills and interests, can effectively ad-

dress specialized diseases at the grassroots level. Simultaneously, primary healthcare institutions can develop specific specialties, enhance overall operational capabilities, increase the income of general practitioners, satisfy the public, and reduce medical expenses. The development of subspecialties in general medicine introduces a new mindset and pathway, maintaining the training model while adjusting the duration. This progress is amenable to negotiation and acceptance across various departments [14-16]. For example, after completing a 5-year undergraduate program, general medicine students can undergo a 3-year standardized residency training as resident physicians. One year is dedicated to general medicine learning, and the subsequent two years focus on the specific interests and rotations of general practitioners in specialized departments to acquire specialized knowledge and skills. This approach allows general practitioners interested in public health to concentrate on public health studies for two years, while those inclined towards surgery can spend two years in surgical departments learning about specialized diseases and surgical skills. This strategy leverages individual strengths, retains talent, addresses the shortcomings of missing specialized doctors at the grassroots level, and effectively resolves practical issues in primary healthcare institutions.

5. Conclusion

Since the implementation of the hierarchical medical system in China, the increase in the number of general practitioners and the enhancement of their skills have further elevated the technical proficiency of primary healthcare, leading to an improvement in the shortage of medical resources. However, the practical situation in China's primary healthcare institutions indicates a persistent lack of physicians capable of addressing specialized disease spectra. Scholars such as Mei Renlang have suggested a weekly arrangement for general practitioners, including one session of surgical learning and two one-on-one surgical coaching sessions, aiming to cultivate general practitioners capable of performing emergency laparotomies. Both Australia and China have incorporated theoretical and practical learning of surgical science into their general medicine training systems. This illustrates that the development of subspecialties in general medicine is an inevitable trend in the future, unimpeded and unstoppable. Currently, grassroots healthcare institutions indeed lack clinical doctors capable of addressing the practical spectra of specialized diseases. However, specialized doctors are unwilling to work at the grassroots level, leading to a severe talent drain and a failure to retain professionals. Therefore, the development of subspecialties in general medicine is imperative. Doctors in subspecialties within general medicine are trained based on the foundation of general medicine courses, equipping them with specialized diagnostic and treatment characteristics as well as clinical

skills. This increases the operational capacity of grassroots healthcare institutions, rebuilds the confidence of general practitioners, develops their interests and preferences, retains talent, resolves common specialized diseases, reduces expenses for the public, and undoubtedly enhances satisfaction.

Abbreviations

Abbreviations are not used in this article.

Conflicts of Interest

This research received no financial support, and all authors declare no conflicts of interest. All original data were provided and interpreted by Shiyan Li.

References

- [1] National Health Professional and Technical Qualification Writing Expert Committee, et al. General Medicine [M]. 1st ed. Beijing: People's Health Publishing House, 2019: 55.
- [2] Chao Liu, Shi Yan Li, Shao Tao Xiang, Etc. Development and Exploration of Surgical Diseases and Skills in General Practice, Science Journal of Public Health. Volume 10, Issue 4, July 2022, 182-189.
- [3] General Office of the State Council of the People's Republic of China, et al. Guidance on Promoting the Construction of a Hierarchical Medical System [J], Issued by the General Office of the State Council of the People's Republic of China, 2015, 9: 70.
- [4] Mei Renlang, et al. Comprehensive Clinical Courses Based on Rural General Medicine - The Experience of the University of Flinders Medical School in Australia [J], Foreign Medicine, Medical Education Volume, 2002, 23(1): 20-25.
- [5] Xu Dongwu, Zheng Minghao, Chen Zhengfang, Li Zhangping, et al. Current Status and Enlightenment of Australia's General Medicine Talent Training System [J], China Higher Medical Education, 2016, 4: 16-18.
- [6] Chen Xi, Li Honglong, Wang Haijun, et al. Survey and Analysis of Undergraduate Teaching Satisfaction of General Medicine Majors in Medical Colleges [J]. Modern Medicine & Health, 2023, 39(20): 3574-3576.
- [7] Qi Dianjun, Jiang Nan, Yu Xiaosong. Investigation of Postgraduate Education in General Medicine in China [J]. Academic Journal of China Medical Education, 2023, 37(05): 628-632.
- [8] Liu Xuanxuan, Wu Xia, Cao Dan, et al. Research on Cultivation of Clinical Thinking Ability of General Medicine Major Students [J]. Continuing Medical Education, 2023, 37(07): 145-148.
- [9] Feng Tingting, Wang Jiahe. Practical Exploration of the Dual Mentorship System in the Training of General Medicine Master's Graduates [J]. Clinical Medicine and Education in General Medicine, 2023, 21(05): 385-387.
<https://doi.org/10.13558/j.cnki.issn1672-3686.2023.005.001>
- [10] Liu Siyan. Investigation on the Standardized Training of Residents in General Medicine in Shandong Province [D]. Shandong University, 2023.
<https://doi.org/10.27272/d.cnki.gshdu.2023.006451>
- [11] Zhao Tiefu, Zhang Bin, Ma Hanying, et al. Investigation on the Communication Skills Level of Outpatient Medical and Patient Communication of Master's Tutors in General Medicine in Beijing [J]. China General Medicine, 2023, 26(28): 3539-3543.
- [12] Liu Yang, Ding Hao, Lv Jie, et al. Comparison and Reflection on Clinical Engineering Technology and the Cultivation of Talents in General Medicine [J]. Health Vocational Education, 2022, 40(22): 1-4.
<https://doi.org/10.20037/j.issn.1671-1246.2022.22.01>
- [13] Huang Zhenjing, Zhou Shouhong, Yin Kai, et al. Current Situation and Countermeasures of Research Ability of General Medicine Postgraduates [J]. Clinical Medicine and Education in General Medicine, 2022, 20(09): 769-771.
<https://doi.org/10.13558/j.cnki.issn1672-3686.2022.009.001>
- [14] Zhao Yunli, Yang Jing, Zhang Jie, et al. Exploration of Preventive Medicine Teaching Reform in General Medicine Under the Epidemic of Novel Coronavirus Pneumonia [J]. Journal of Shenyang Medical College, 2022, 24(04): 432-435+439.
- [15] Wu Wei, Chen Zhuo, Wang Xiaofei, et al. Application of Mini-CEX Scale in the Standardized Training of General Medicine Postgraduates in the Background of "New Medical Science" [J]. Journal of Shenyang Medical College, 2022, 24(02): 209-212.
<https://doi.org/10.16753/j.cnki.1008-2344.2022.02.023>
- [16] Yang Xia, Wang Zengrui, Ning Zong. Reflection on the Sub-specialty Training Model in the Process of Training General Medicine Postgraduates [J]. Clinical Medicine and Education in General Medicine, 2022, 20(02): 97-99.