Conceptual Connotation and Implementation Paths of the Integration of Medical and Preventive Services: A Post-print of a Systematic Review Study

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Abstract

Abstract

Background: The integration of medical and preventive services is a key strategy for implementing and advancing the Healthy China initiative. However, stakeholders hold significant disputes regarding its concept, connotation, standards, and mechanisms, which hinders policy reform and the provision of practical guidelines, necessitating the integration of relevant research evidence.

Objective: To systematically review the conceptual connotation, implementation pathways, service content, and integration characteristics of medical-preventive integration in China, providing evidence for improving policy design and scientific research.

Methods: Using a systematic review method, a search was conducted on December 31, 2024, in three databases—CNKI, Wanfang Data, and Chinese Medical Journal Network—using subject terms such as "medical-preventive integration," "integration," and "connotation," including literature published between 2018 and 2024. Data extraction was performed using a framework revised based on the theory of health determinants and integrated care theory. Integration, analysis, and interpretation were conducted based on the transaction cost theory of New Institutional Economics.

Results: A total of 27 articles were included in this study, all published in 2020 or later. The included literature reached no consensus on the concept and connotation of medical-preventive integration, which tends to lead to high ex-ante transaction costs such as negotiation costs. Regarding implementation pathways, the analysis in the included literature was diverse but imbalanced, with

more research on service, normative, and systemic dimensions of integration, and less on organizational, functional, professional, and individual dimensions, which may result in high ex-post transaction costs such as execution costs. Regarding service content, discussions were comprehensive but limited in scope, focusing on preventive and medical service domains and their marginal expansion, with less attention to health management and patient empowerment services, potentially facing multiple transaction costs. Regarding characteristics, the discourse was diverse but insufficiently explained; although key characteristics such as continuity, full-cycle, all-round, and systematization were proposed, specific analytical interpretations were scarce, which may lead to multiple transaction costs.

Conclusion: This study suggests that relevant research should strengthen the focus on the demand-side perspective and the theoretical elaboration of concepts; increase reflection and analysis on organizational, functional, professional, and individual integration dimensions; expand the service content of medical-preventive integration to a broader scope including prevention, medical care, health management, and patient empowerment; and increase specific discourse on the characteristics of medical-preventive integration. This study recommends that discussions on the concept and connotation of medical-preventive integration should balance top-level design with specific execution, realistic response with theoretical exploration, and provider perspectives with demand-side concerns. The above research and policy recommendations will help reduce ex-ante and ex-post transaction costs during the institutional design and implementation of medical-preventive integration.

Full Text

Preamble

The Conceptual Connotation and Implementation Pathways of Integrated Medical and Preventive Services: A Systematic Review

Abstract

Background: The integration of medical and preventive services (IMPS) is a critical strategy for advancing the "Healthy China" initiative and a fundamental requirement for establishing a high-quality integrated healthcare service system. However, the current understanding of the conceptual boundaries and implementation mechanisms of IMPS remains fragmented.

Objective: To systematically analyze the conceptual connotation, core elements, and implementation pathways of IMPS to provide a theoretical basis and practical reference for policy formulation and institutional reform.

Methods: A systematic search was conducted in databases including CNKI, Wanfang Data, PubMed, and Web of Science for literature related to the inte-

gration of medical and preventive services published from the inception of the databases to the present. Following the PRISMA guidelines, literature screening, data extraction, and qualitative synthesis were performed.

Results: The conceptual connotation of IMPS encompasses the deep integration of clinical medicine and public health at the levels of philosophy, technology, and management. Core elements include resource sharing, business collaboration, and institutional synergy. Implementation pathways primarily focus on strengthening primary healthcare, optimizing the division of labor between hospitals and public health institutions, and leveraging digital technologies for health management.

Conclusion: IMPS is not merely a structural reorganization but a systemic transformation. Future efforts should focus on breaking institutional barriers, improving incentive mechanisms, and fostering a collaborative culture to achieve the goal of providing continuous and comprehensive health services for the population.

Introduction

In the context of an aging population and the shifting burden of disease toward chronic conditions, the traditional model of separating clinical treatment from public health prevention is no longer sufficient to meet the complex health needs of the public. The "Healthy China 2030" blueprint explicitly emphasizes the transition from a "treatment-centered" to a "health-centered" approach. The integration of medical and preventive services (IMPS) has emerged as a pivotal strategy to bridge the gap between clinical medicine and public health.

Despite its policy importance, the practical implementation of IMPS faces numerous challenges, including unclear conceptual definitions, fragmented service delivery, and misaligned incentive structures. This study aims to clarify the theoretical framework of IMPS and identify effective implementation pathways through a systematic review of existing literature.

Methods

Search Strategy

We conducted a comprehensive search of both Chinese and English databases. Keywords included "medical and preventive integration," "integration of clinical and public health," "integrated care

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背景

The Concept, Connotation, and Pathways of the Integration of Medical Care and Preventive Services in China: A Systematic Review

The integration of medical care and preventive services (IMPS) is a pivotal strategy for implementing and advancing the "Healthy China" initiative. However, significant controversy persists among stakeholders regarding its concept, connotation, standards, and mechanisms. This lack of consensus hinders policy reform and the provision of practical guidelines, necessitating an urgent integration of research evidence. This study systematically reviews the conceptual connotation, implementation pathways, service content, and integration characteristics of IMPS in China to provide evidence for improving policy design and scientific research.

Methods

Using a systematic review methodology, we searched three databases—China National Knowledge Infrastructure (CNKI), Wanfang Data, and the Chinese Medical Association Journal Network—on December 31, 2024. The search terms included "integration of medical care and preventive services," "integration," and "connotation." Literature published between 2018 and 2024 was included. Data extraction was performed using a framework revised based on the Theory of Health Determinants and Integrated Care Theory. The integration, analysis, and interpretation of the findings were grounded in the Transaction Cost Theory of New Institutional Economics.

Results

A total of 27 articles were included in this study, all published in or after 2020. The analysis revealed several key findings:

1. **Conceptual Ambiguity:** There is no consensus in the included literature regarding the concept and connotation of IMPS. This lack of clarity is likely to lead to high ex-ante transaction costs, such as negotiation costs.
2. **Implementation Pathways:** While the analysis of implementation pathways is diverse, it suffers from an imbalance in focus. Extensive research exists on the integration of services, norms, and systems, whereas the organizational, functional, professional, and individual dimensions of integration are under-researched. This imbalance may result in high ex-post transaction costs, particularly implementation costs.
3. **Service Content:** Discussions on service content are comprehensive but limited in scope. Most research focuses on preventive and medical service categories and their marginal expansion, with less attention paid to health management services and patient empowerment. This narrow focus may lead to multiple transaction costs.

4. **Integration Characteristics:** The literature proposes various key characteristics of IMPS, such as continuity, full-cycle coverage, comprehensiveness, and systematization. However, detailed analysis and interpretation of these characteristics are lacking, which may also incur multiple transaction costs.

Discussion and Recommendations

This study suggests that future research should increase focus on the demand-side perspective and provide more rigorous theoretical expositions of the concept. It is essential to deepen the analysis of organizational, functional, professional, and individual integration dimensions. Furthermore, the scope of IMPS service content should be expanded to encompass a broader range, including prevention, medical care, health management, and patient empowerment. More detailed discussions on the specific characteristics of IMPS are also required.

Regarding policy and practice, we recommend that discussions on the concept and connotation of IMPS balance top-level design with practical execution. These discussions should bridge empirical responses with theoretical exploration and integrate provider perspectives with consumer concerns. Implementing these research and policy recommendations will help reduce both ex-ante and ex-post transaction costs during the institutional design and implementation of the integration of medical care and preventive services.

Keywords: Integration of medical care and preventive services; Integrated care; Systematic review; Transaction costs

Background

The integration of medical care and preventive services is a key strategy in advancing the Healthy China Initiative. However, substantial divergence among stakeholders in terms of its concept, connotation, standards, and mechanisms hampers policy transformation and calls for integrated evidence.

Objective This study aims to conduct a systematic review of the concept, connotation, pathways, content and characteristics of the integration of medical care and preventive services in China, providing evidence to inform policy design and research.

Methods

A systematic review approach was adopted. LI J W, GE A Q, GAO X Y, et al. The concept, connotation, and pathways of the integration of medical care and preventive services in China: a systematic review[J]. Chinese General Practice，2026. [Epub ahead of print]Editorial Office of Chinese General Practice.

Chinese General Practice https Literature published between 2018 and 2024 was retrieved from China National Knowledge Infrastructure, Wanfang Data, and the Chinese Medical Journal Network using the keywords “integration of medical care and preventive services” “integration” and “connotation” from December 31, 2024. A revised analytical framework—grounded in the theories of social determinants of health and integrated care—was applied for data extraction. Data were further integrated, analyzed, and interpreted through the lens of transaction cost theory from new institutional economics.

Results

A total of 27 studies published since 2020 were included. No universal consensus was found regarding the concept and connotation of the integration of medical care and preventive services, leading to elevated ex-ante transaction costs such as negotiation complexity. Regarding integration pathways, studies demonstrated analytical diversity but showed imbalance, with greater emphasis on clinical, normative, and system dimensions, while organizational, functional, professional, and individual dimensions were underexplored, thereby contributing to higher ex- post transaction costs during implementation. In terms of service content, discussions were comprehensive yet limited in scope, focusing mainly on preventive and medical services and their marginal extension, with insufficient attention to health management and patient empowerment services, which may result in multiple layers of transaction costs. As for integration characteristics, although various key features such as continuity, life-course orientation, comprehensiveness, and systematization were proposed, detailed analyses and interpretations were lacking, which may lead to increased transaction costs at different stages.

Conclusion

This study suggests that future research should strengthen the theoretical conceptualization and demand-side perspective; enhance analysis of organizational, functional, professional, and individual pathways; broaden the scope of integration to encompass preventive, medical, health management, and patient empowerment services; and provide more detailed discussions on key integration characteristics. The conceptual and connotative discussions of the integration of medical care and preventive services should strike a balance between policy design and policy implementation, between reality responsiveness and theoretical insight, and between supply-side perspectives and demand-side concerns. These insights may contribute to reducing ex-ante and ex-post transaction costs in both the design and implementation of institutional arrangements.

Keywords: Integration of medical care and preventive services; Integrated care; Systematic review; Transaction cost

Introduction

As China' s population ages and living standards improve alongside shifts in disease patterns, chronic diseases have become the primary threat to the health of Chinese residents. These conditions impose a heavy burden and present significant challenges to families, the healthcare system, and society at large. According to statistics from the National Health Commission, the prevalence rates of hypertension, hyperglycemia, hyperlipidemia, and hyperuricemia among Chinese adults in 2024 were 27.5%, 11.9%, 35.6%, and 13.3%, respectively. Furthermore, deaths attributed to chronic diseases now account for more than 80% of total mortality among residents.

Since the implementation of the "New Medical Reform" in 2009, China has gradually incorporated patients with primary hypertension, type 2 diabetes, and chronic obstructive pulmonary disease (COPD) aged 35 and older into standardized health management through the implementation of Basic Public Health Service projects. Throughout the process of promoting a hierarchical medical system, the importance of chronic disease prevention and management has been consistently emphasized [**?**]. Additionally, historical experience gained from responding to public health emergencies requires the health service system to further enhance its capacity for the normalized prevention and control of infectious diseases.

However, China's health service system has long faced a reality of fragmentation, overlap, and insufficient synergy between the medical care system and the public health system. Common international strategies to address these issues involve the integration of institutions, personnel, and services. Examples include incorporating public health personnel into medical service teams or assigning public health responsibilities to medical service personnel to ensure the simultaneous provision of medical and public health services at the community level. Similar to international experiences, and based on the long-term implementation of the "combination of prevention and treatment" policy, China has proposed "innovating mechanisms for medical-preventive coordination and medical-preventive integration." Within this framework, medical-preventive coordination focuses on optimizing institutional collaboration, while medical-preventive integration emphasizes the optimization of service delivery models.

In recent years, China has made significant progress in reforming the systems and mechanisms for medical-preventive coordination. This includes the establishment of the National Administration of Disease Prevention and Control, the creation of public health committees, and the strengthening of the core functions of disease control agencies and the public health functions of medical institutions. Despite these efforts, the structural imbalance characterized by the "two skins" phenomenon—where medical treatment and prevention remain disconnected—has not yet undergone a substantive transformation.

As a policy expression and concept proposed through a top-down approach, medical-preventive integration inherits, continues, and develops the ideas of

combining prevention and treatment, medical-preventive coordination, and integrated healthcare. Although it is intended to address the crux of medical-preventive fragmentation at the service level, there remains significant controversy among stakeholders regarding its concept, connotation, standards, and mechanisms. Consequently, it is difficult to generate policy innovations that drive change or to form action guidelines that direct practice. While the academic community has attempted to interpret, define, and analyze the concept of medical-preventive integration, there is currently insufficient integration of evidence from relevant research, and a consensus amid the controversy has yet to be summarized.

In view of this, the present study will systematically review the concept, connotation, implementation pathways, service content, and integration characteristics of medical-preventive integration in China. Furthermore, this study will integrate, analyze, and interpret these findings based on the transaction cost theory of New Institutional Economics, attempting to provide evidence and inspiration for enriching and refining the conceptual framework of medical-preventive integration.

1.1 文献检索

The concept of "medical-preventive integration" (yifang ronghe) is not explicitly defined in international research. Instead, global academic discourse typically analyzes related frameworks such as comprehensive health care and people-centered integrated health care (PCIC).

Given the localized and practical nature of the "medical-preventive integration" concept, this study conducted a comprehensive search of three major Chinese databases—China National Knowledge Infrastructure (CNKI), Wanfang Data, and the Chinese Medical Journal Network—on December 31, 2024. English-language databases were excluded from this specific search, and no restrictions were placed on the publication date of the literature. Furthermore, additional high-value documents were identified through reference lists, expert recommendations, and academic news channels. Based on an in-depth understanding of the field, the researchers developed specific search strategies tailored to the rules of each database. For instance, the professional search string used for CNKI was: `(Subject=integrated medical care) AND (Subject=integrated care)`.

1.2 文献纳入与排除标准

This study did not impose restrictions on publication dates or document types during the initial literature search. However, considering that the term "medical-preventive integration" (yifang ronghe) was first formally introduced in the *Notice on Improving Family Doctor Contracted Services in 2018*, we only included studies published in or after 2018.

The inclusion criteria for the literature were as follows: (1) the study dis-

cusses the concept, connotation, definition, pathways, or dimensions of medical-preventive integration; (2) the research context is China; and (3) as the study does not involve causal inference, the research paradigms include both normative and empirical research, covering study types such as literature reviews, quantitative studies, qualitative studies, mixed-methods research, and expert consensuses.

The exclusion criteria were as follows: (1) the study does not discuss the concept, connotation, definition, pathways, or dimensions of medical-preventive integration, or it directly cites the views of others without modification when discussing the topic; (2) the study focuses on summaries of international experiences; and (3) non-academic literature, such as letters, political commentaries, and news reports.

Literature management for this study was conducted using EndNote 20 software. Following the removal of duplicate records, two researchers independently performed an initial screening of titles and abstracts, followed by a secondary full-text screening. Any discrepancies encountered during the selection process were resolved through discussion with other team members or by consulting experts in the relevant field until a consensus was reached.

This study utilized Microsoft Excel 2016 for data extraction and analysis. The data extraction framework comprised two primary components: basic bibliographic information and core thematic content. The bibliographic section included metadata such as authors, publication year, research paradigms, and study types. The thematic section focused on substantive content related to the integration of medical and preventive services, specifically covering its conceptual definitions and connotations, implementation pathways, service delivery models, and defining characteristics.

To systematically extract information from the literature, this study utilizes the "Integrated Care Framework" proposed by Valentijn [**?**] and the "Determinants of Health Model" proposed by Whitehead et al. [**?**] as the primary theoretical foundations. By incorporating the principles of three-level prevention and clinical guidelines for chronic disease management, we have refined these theories to develop a comprehensive information extraction framework ([Figure 1: see original paper]).

Within this framework, the Integrated Care theory is employed to extract and categorize the implementation pathways of medical-preventive integration. This is operationalized across multiple dimensions: service (clinical) integration at the micro level; professional and organizational integration at the meso level; systemic integration at the macro level; and functional and normative integration at the linking level. Furthermore, this study posits that the integration of medical and preventive services necessitates proactive health management from both residents and patients. Consequently, "individual integration" has been incorporated into the micro-level analysis to reflect this requirement.

The determinants of health encompass a broad spectrum of variables, including

individual factors such as age, gender, and genetics; personal lifestyle choices; social and community influences; living and working conditions; and broader socio-cultural and environmental factors. These underlying risk factors necessitate the implementation of comprehensive intervention services through the integration of clinical medicine and public health.

Guided by the principles of three-level prevention and the natural history of disease progression, the integration of medical and preventive services should span the entire continuum of care. This includes primary prevention, early screening, diagnosis, treatment, chronic disease management, complication control, and post-complication rehabilitation. These theoretical frameworks and principles serve as the basis for extracting and categorizing the specific service components of integrated medical and preventive care.

This study employs the framework synthesis method to integrate the extracted textual content. The integration framework is designed based on the transaction cost theory within the field of New Institutional Economics.

This theory was first proposed by Coase in the 1937 seminal work *The Nature of the Firm* [**?**], and was later systematically developed into a mature theoretical framework by Williamson. The core of transaction cost theory concerns how institutional arrangements achieve resource allocation by reducing transaction costs; it is typically employed to analyze why a specific institutional arrangement emerges and how such arrangements improve efficiency.

From this theoretical perspective, the integration of medical and preventive services is viewed as a new institutional arrangement within the health service system designed to reduce transaction barriers between medical care and public health. For a long time, the public health system and the medical service system have faced challenges such as diverging goals, organizational separation, fragmented resources, information silos, and segmented services. Consequently, the process of achieving medical-preventive integration may incur high transaction costs. To reach agreements on integration—including contracts, covenants, and rules—various social, economic, cultural, and environmental conditions must be addressed.

[Figure 1: see original paper]

The framework for information extraction and system integration considers multiple levels of influence: general socio-economic conditions, living and working conditions, social and community factors, individual lifestyle factors, and biological determinants such as age, gender, and genetics. At the implementation level, this integration manifests across four dimensions: - **Individual level:** Focusing on self-management and proactive health behaviors. - **Service/Professional level:** Emphasizing supportive, personalized, and multidisciplinary care. - **Organizational level:** Prioritizing cooperation, synergy, integration, and restructuring. - **System level:** Ensuring institutional support, a robust system architecture, and perfected mechanisms. - **Functional/Normative level:** Addressing human resources, financing, information systems, governance, and shared

values.

The institutional consensus regarding Chinese General Practice involves significant ex-ante transaction costs, including information costs, negotiation costs, contracting costs, and contract security costs. Furthermore, it entails ex-post transaction costs such as execution costs, coordination costs, adaptation costs, and incentive costs required to facilitate the implementation of medical-preventive integration (encompassing contracts, agreements, rules, and systems).

As an institutional arrangement, medical-preventive integration can optimize governance structures to reduce both ex-ante and ex-post transaction costs. These costs typically stem from root causes within the original system, such as information asymmetry among stakeholders, the asset specificity of medical and preventive services, and environmental uncertainty. By mitigating the institutional friction caused by these issues, this integration facilitates an improvement in the allocation efficiency of healthcare resources.

In other words, from the perspective of transaction cost theory, the process of achieving the integration of clinical medicine and public health is essentially a process of reducing the transaction costs caused by the fragmentation between these two domains.

2.1 纳入文献的基本情况

Through a comprehensive database search, this study initially identified 1,742 publications. After removing duplicates, excluding irrelevant entries, and conducting a preliminary screening, 114 articles remained. Following a secondary screening by the researchers, 27 studies [?, ?, ?] were ultimately included in the final analysis. The detailed selection process is illustrated in Figure 2 [Figure 2: see original paper].

The basic characteristics of the included literature are as follows: categorized by year of publication, the number of articles published in 2020 [?, ?, ?, ?], 2021 [?, ?], 2022 [?, ?, ?], 2023 [?, ?], and 2024 [?, ?, ?, ?, ?, ?] were 8, 7, 7, 2, and 3, respectively. When classified by research paradigm and type, 10 articles were identified as normative research, which included 8 theoretical analyses and expert consensuses [?].

2 篇

Regarding the research methodology of the included literature [?, ?], 17 papers are empirical studies. Among these, there are 6 mixed-methods studies [?, ?, ?, ?, ?], 5 qualitative studies [?, ?, ?, ?], 4 quantitative studies [?, ?, ?, ?, ?], and 2 other empirical types [?, ?]. When classified by publication type, 19 are journal articles [?, ?], while 8 are dissertations (primarily Master' s theses) [?, ?, ?, ?, ?, ?, ?, ?]. The

included literature discusses the concept and connotation of medical-preventive integration from various perspectives.

Categorized by the dimensions of the implementation path for medical-preventive integration, the literature is distributed as follows (ranked from most to least frequent): service integration with 24 papers [?, ?]; normative integration with 18 papers [?, ?, ?, ?, ?, ?, ?, ?, ?, ?, ?, ?, ?, ?, ?, ?, ?, ?]; systemic integration with 16 papers \cite{7, 22, 23, 24, 26, 27,

11 篇

Regarding the classification of literature by the content of medical-preventive integration services, 16 papers analyzed continuous services (or specific components thereof) ranging from prevention to rehabilitation [?, ?, ?, ?, ?, ?]. Three papers focused specifically on chronic disease health management [?, ?], while four discussed other service contents [?, ?, ?, ?]. Eight papers did not directly discuss specific service contents [?, ?, ?, ?]. When classified by the characteristics of medical-preventive integration, the literature addressed continuity/linkage/synergy (9 papers) [?, ?, ?, ?], full-lifecycle/whole-process (8 papers) [?, ?, ?, ?, ?], systematization/comprehensiveness/integration (6 papers) [?, ?, ?, ?], and other characteristics (9 papers) [?, ?, ?, ?]. Eight papers did not explicitly discuss the characteristics of integration [?, ?, ?, ?].

Literature identified through database searches ($n = 1,731$): China National Knowledge Infrastructure (CNKI) ($n = 759$), Wanfang Data ($n = 984$), and Chinese Medical Journal Network ($n = 10$).

Literature identified through other channels ($n = 11$).

Excluded literature published before 2018 ($n = 630$); Excluded duplicate literature ($n = 175$).

Screened titles and abstracts; excluded literature unrelated to the research topic ($n = 823$).

Reviewed full texts; excluded literature that did not involve the concept or connotation of medical-preventive integration ($n = 87$).

[Figure 1: see original paper] Flow chart of literature screening.

The discourse provided by Wang Jun et al., Yuan Beibei et al., and Li Minggang et al.

Some literature did not directly define the concept of medical-preventive integration, but instead explained its connotation from various perspectives such as indicators, models, pathways, and mechanisms. The remaining 21 papers proposed relatively clear definitions. Academic seminars on innovative mechanisms, strategies, and implementation pathways for medical-preventive synergy,

as well as studies by Huangfu Huihui et al., Hu Meili et al., and Miao Yanqing et al., discussed the concept of "medical-preventive integration" alongside "medical-preventive synergy" and "combination of prevention and treatment," and were thus included in this study. Overall, there is no universal consensus on the definition of medical-preventive integration in the included literature, which exhibits high conceptual ambiguity and variability. This ambiguity essentially reflects the negotiation costs in the early stages of institutional design (contracting or agreement). It suggests that during policy implementation, stakeholders' differing interpretations of standards may lead to collaborative barriers, execution deviations, and regulatory vacuums, resulting in significant institutional friction and high transaction costs. Although definitions vary, most literature identifies a "people-centered" or "health-centered" core philosophy, reflecting characteristics across service levels, provider perspectives, integrative attributes, systems thinking, and practical features. These elements primarily mirror the basic principles of integrated healthcare theory; most studies emphasize that medical-preventive integration requires systemic integration across macro, meso, micro, and linkage levels, with the micro-level service (clinical) stage serving as the primary entry point for supply-side reform. Furthermore, systems thinking is reflected in the attention given to comprehensive health determinants and the entire progression of disease development, advocating for the "Health in All Policies" approach. Practical features are mainly manifested in the discussion of specific intervention measures within service-level integration, providing a basis for policy practice and frontline operations.

Concept and connotation of the integration of medical care and preventive services in included studies. One study, titled "Integration and Synergy between the Public Health System, Medical Services, and Medical Security Systems: Theoretical Mechanisms and Case Analysis," posits that integration and synergy encompass six dimensions: organizational management, service delivery systems, financing systems, human resource allocation, epidemic prevention and control emergency management, and information sharing, scientific research, and laboratory cooperation.

2020 王俊等

Medical-preventive integration is a model rooted in chronic disease services within primary healthcare institutions. Guided by the philosophy of "Great Health and Great Hygiene," this approach bridges the gaps between disease prevention, clinical diagnosis and treatment, and health promotion. By establishing a closed loop of prevention and control, it ensures that the entire population receives proactive, continuous health services covering the full life cycle. Ultimately, this model aims to optimize the clinical experience, reduce the burden of disease, and enhance overall health benefits.

2020 沈晓

Academic Symposium on Innovating Medical-Preventive Coordination Mechanisms, Strategies, and Implementation Paths

Expert Recommendations for Innovating Medical-Preventive Coordination Mechanisms

Medical-preventive coordination refers to the synchronized operation of the clinical diagnosis and treatment system, primarily centered on hospitals, and the disease prevention and control system, primarily centered on disease prevention and control institutions. This collaborative framework aims to provide integrated services covering disease prevention, diagnosis, control, treatment, and rehabilitation. By achieving comprehensive and continuous health services, this approach enhances the overall efficiency and effectiveness of the healthcare system.

Implementation Paths for Medical-Preventive Integration Based on Symbiosis Theory

The integration of medical and preventive services can be conceptualized through the lens of symbiosis theory, which emphasizes the mutually beneficial relationship between distinct entities. Within this framework, the implementation path for medical-preventive integration focuses on creating a synergistic ecosystem where clinical medicine and public health are no longer siloed. This involves the structural realignment of resources, the synchronization of data and information systems, and the establishment of shared goals to ensure that preventive measures are embedded within clinical practice and that clinical insights inform public health strategies.

分析

The relationship between medical treatment and disease prevention is fundamentally a symbiotic one. The medical-prevention symbiosis system primarily comprises two symbiotic units: the medical service system and the disease prevention and control system.

The medical-prevention symbiosis model represents the connection and interaction between public health units and medical service units. This model primarily involves the distribution, integration, and value symbiosis of medical and preventive services, institutional frameworks, resource allocation, and responsibilities. Ultimately, it reflects the internal management efficacy and operational performance of the integrated medical-prevention system.

2021 史卢少博

Medical-preventive integration is a model centered on maintaining resident health, utilizing family doctor contract services as an entry point. It effectively fulfills the dual functions of basic medical care and public health services to provide residents with comprehensive health management services that integrate clinical treatment with preventive medicine.

2021 孙晓桐等

Medical-Preventive Integration Practices in County-Level Medical Communities

In the context of medical-preventive integration, "medical" refers to clinical practice, while "preventive" refers to public health. At the technical service level, this integration requires healthcare personnel to be capable of both treatment and prevention—specifically, "those who prevent should be able to treat, and those who treat should be able to prevent" —thereby bridging the historical gap between clinical medicine and public health.

At the level of responsibility sharing, it is essential to establish a mechanism where both medical and preventive sectors jointly assume responsibility for health promotion, supported by corresponding management and evaluation frameworks. This approach emphasizes a person-centered model guided by health needs. By integrating clinical medicine, prevention, healthcare, rehabilitation, health education, and health promotion, the system aims to provide systematic, continuous, and comprehensive health services.

2021 单莹等

"Medical-preventive integration" is a composite disease management model characterized by the unification of clinical medicine and preventive care. In this context, "medical" primarily refers to clinical diagnosis and treatment, while "preventive" refers to public health services. This model relies on professionals equipped with both clinical expertise and public health service capabilities to provide continuous, comprehensive care. The ultimate goal is to facilitate a paradigm shift from a focus on disease diagnosis and treatment toward a focus on resident health.

2021 揭映楣

Integration of Medical and Preventive Services: Connotations, Barriers, and Strategies

The "Integration of Medical and Preventive Services" (IMPS) combines "disease treatment" with "disease prevention." This approach ensures that medical care and preventive measures permeate one another to form a unified system.

By providing medical and preventive services simultaneously—ensuring they are effectively linked and mutually synergistic—this model aims to minimize the occurrence of health problems and provide targeted control to prevent the deterioration of existing conditions. Ultimately, IMPS enhances the appropriateness and effectiveness of healthcare services, fulfilling the objective of "centering on people' s health."

2021 陈家应等

Medical-Preventive Integration in the Context of Major Epidemic Prevention and Control

"Medical-preventive integration" refers to the convergence of clinical medical services and public health services. This concept emphasizes the mutual penetration and unification of healthcare and public health, highlighting the seamless integration and effective coordination between these two domains throughout the service delivery process.

In the context of this research, medical-preventive integration takes on a new connotation specific to the requirements of epidemic prevention and control. It entails the deep integration of medical and public health services, particularly within hospitals and primary healthcare institutions. By establishing robust institutional frameworks and operational mechanisms, this approach ensures that clinical medicine and public health converge and coordinate in an orderly manner. The ultimate goal is to generate a synergistic effect that maximizes the overall functional capacity of the healthcare system when responding to sudden, major outbreaks.

2021 刘茜等

Integrated Prevention and Treatment: Connotation, Challenges, and Implementation

The integration of prevention and treatment refers to a clinical approach where physicians incorporate preventive philosophies alongside therapeutic measures during the process of diagnosis and treatment, thereby achieving a synergy between clinical medicine and public health. At the micro-level, this integration involves the fusion of medical and preventive services within a single institution. Specifically, it requires clinicians to synthesize preventive concepts and interventions into their treatment protocols to provide patients with integrated and continuous health services.

This integration entails the convergence of primary health care, general practice, specialist medicine, and rehabilitative nursing within health institutions. Furthermore, it necessitates the alignment of key incentive and constraint mechanisms—such as personnel management, financial administration, and performance evaluation—with supporting infrastructure like information systems. By

adopting a patient-centered approach, this model aims to provide comprehensive health management services throughout the entire continuum of care.

2022 苗艳青等

Integration of Medical and Preventive Services in Primary Healthcare: Concept, Framework, and Indicator System Construction

The integration of medical and preventive services must demonstrate cohesive characteristics throughout the service delivery process. Its successful implementation requires the support of an external policy environment and is ultimately reflected in residents' ability to access more health-oriented services, as well as expanded prevention and health management services beyond traditional clinical diagnosis and treatment.

2022 袁蓓蓓等

Research on the Impact of Primary-Level Medical-Preventive Integration on the Health of Patients with Chronic Diseases: An Empirical Analysis Based on the PSM-DID Method

Medical-preventive integration refers to the integration and synergy between the medical service system and the public health system. With primary healthcare institutions serving as the main body and chronic disease health management as the breakthrough point, this approach aims to achieve continuous and collaborative health services.

1. Introduction

The integration of medical and preventive services is a critical strategy for modernizing healthcare delivery. By breaking down the silos between clinical treatment and public health interventions, this model seeks to provide a seamless continuum of care. In the context of primary healthcare, this integration is particularly vital for managing chronic non-communicable diseases, which require long-term monitoring, lifestyle interventions, and clinical management.

The fundamental objective of medical-preventive integration is to transition from a treatment-centered model to a health-centered model. This involves the coordination of resources, personnel, and information across different levels of the healthcare system to ensure that patients receive comprehensive care that addresses both their immediate medical needs and long-term health maintenance.

2. Methodology

To rigorously evaluate the impact of medical-preventive integration on patient health outcomes, this study employs a Propensity Score Matching - Difference-in-Differences (PSM-DID) approach. This methodology is chosen to address potential selection bias and endogeneity issues inherent in observational data.

2.1 Data Sources and Variables The data for this study are derived from longitudinal health records and administrative databases. Key variables include patient demographic characteristics, clinical indicators (such as blood pressure and glucose levels), and health-related quality of life scores.

2.2 The PSM-DID Model The PSM-DID method combines the advantages of Propensity Score Matching (PSM) and the Difference-in-Differences (DID) estimator. First, PSM is used to construct a control group that is as similar as possible to the treatment group (those receiving integrated care) based on observable characteristics. This is achieved by calculating a propensity score for each individual:

$$P(X_i) = \Pr(D_i = 1|X_i)$$

where D_i is the treatment indicator and X_i is a vector of pre-treatment covariates. After matching, the DID estimator is applied to the matched sample to identify the causal effect of the

2022 吴晓园等

Discussion on the "Seven Integrations" Health Management Service Model for Medical and Preventive Care in Primary Healthcare Institutions

The "Seven Integrations" model for medical and preventive care specifically encompasses the following dimensions:

1. Ideological Integration Led by Party Building

This dimension focuses on leveraging the leadership of Party building to unify the strategic vision of medical and preventive services. By aligning the core values and objectives of healthcare providers, it ensures that the integration of clinical treatment and public health prevention is prioritized at an ideological level across all primary healthcare staff.

2. Vertical Integration via Tight-knit Medical Communities

This component emphasizes "top-bottom integration" through the establishment of tight-knit county-level medical communities (Medical Conduits). It facilitates

the flow of resources, expertise, and patients between secondary or tertiary hospitals and primary healthcare centers, ensuring that preventive care and clinical treatment are seamlessly linked across different levels of the healthcare hierarchy.

3. Management Integration of Administrative Functions

Management integration involves the consolidation of administrative and supervisory functions. By breaking down the silos between clinical departments and public health departments, institutions can implement unified planning, standardized protocols, and coordinated decision-making processes that treat medical care and prevention as a single, cohesive management objective.

4. Team Integration through Organizational Restructuring

This dimension focuses on "personnel integration"by restructuring organizational frameworks. It encourages the formation of multidisciplinary teams where clinical doctors, public health practitioners, and nursing staff work together. This collaborative structure ensures that health management is no longer fragmented but is instead delivered by a unified workforce with shared responsibilities.

5. Service Integration with Clear Division of Labor

Service integration defines specific roles and responsibilities to ensure that clinical and preventive services are delivered concurrently. By clarifying the division of labor, healthcare providers can offer "one-stop"services where diagnosis, treatment, health education, and chronic disease screening are integrated into a single patient encounter, improving the overall efficiency of health management.

6. Performance Integration via Improved Medical Evaluation

This component involves reforming the performance appraisal and incentive systems. By incorporating public health indicators and preventive outcomes into the clinical evaluation framework—and vice versa—the "performance integration" model ensures that staff are motivated to prioritize both the quality of medical treatment and the effectiveness of health prevention.

7. Information Integration through Intelligent Management

Information integration utilizes digital health records and smart management platforms to bridge data gaps. By ensuring that clinical diagnostic data and public health management data are

2022 李明刚等

Definition of "Medical-Preventive Integration" in Urban Healthcare Services

The "Medical-Preventive Integration" of urban healthcare services is defined as a multi-dimensional, integrated urban system that closely links medical treatment with disease prevention. This framework is designed to address contemporary health challenges, including the frequent occurrence of infectious diseases, the high prevalence of chronic conditions, and the complex evolution of disease profiles.

The system is built upon the foundation of "tight-knit" medical communities (Integrated Care Organizations) and utilizes the technical expertise of disease control and prevention institutions as its primary lever. It is supported by internet-based big data and utilizes the community as a core platform, encouraging broad participation from residents. Through the practical integration of "curing disease" and "preventing disease," this system has evolved into a standardized set of general, repeatable, and operational workflows.

2022 甘春雨

Research on the Current Implementation Status and Improvement Strategies of Medical-Preventive Integration in Anhui Province

Medical-preventive integration serves as a concrete manifestation of an integrated health service system and represents a vital means of consolidating and optimizing primary medical resources. This integration encompasses multiple dimensions, including management, resources, clinical operations, and information systems. By spanning the entire life course—from disease prevention to rehabilitation—it aims to prioritize primary care and emphasize prevention. Ultimately, this approach seeks to provide the public with comprehensive, full-cycle health services.

2022 王子荆

Research on the Evaluation Index System for Integrated Medical and Preventive Services at the County Level

In the context of integrated medical and preventive services, "medical" refers to clinical practice, while "preventive" refers to public health. Centered on maintaining resident health, the integration of medical and preventive services is a model that merges healthcare delivery and public health across management, resources, services, and information. The ultimate goal of this model is to provide residents with comprehensive, full-lifecycle health management services.

2022 李灿灿

Evaluation of the Coordination Level of Medical-Preventive Integration in Guangdong Province (2010-2019)

(Continued) Evaluation of the Coordination Level of Medical-Preventive Integration in Guangdong Province from 2010 to 2019.

2022 方雄鹰等

The Concept, Theoretical Foundations, and Implementation Pathways of "Medical-Preventive Integration"

1. The Concept of Medical-Preventive Integration

"Medical-preventive integration" (医防融合) refers to the organic integration of clinical medical services with public health services. It aims to break the traditional structural and functional silos between medical institutions and public health agencies. By coordinating resources, information, and personnel, this approach shifts the healthcare focus from "treatment-centered"to "health-centered," providing the public with continuous, comprehensive, and integrated health services throughout the entire life cycle.

In practice, medical-preventive integration requires that clinical physicians possess public health awareness and the ability to provide preventive guidance, while public health practitioners must understand clinical needs to better implement targeted interventions. This synergy ensures that disease prevention, screening, diagnosis, treatment, and rehabilitation are no longer isolated stages but a seamless continuum of care.

2. Theoretical Foundations

The theoretical framework of medical-preventive integration is primarily built upon the following three pillars:

2.1 Social Medicine and the Biopsychosocial Model Traditional medicine often focuses on the biological aspects of disease. However, social medicine emphasizes that health is influenced by biological, psychological, and social factors. The biopsychosocial model provides the theoretical justification for medical-preventive integration, asserting that effective health management must address lifestyle, environmental factors, and social determinants alongside clinical treatment.

2.2 Life Course Health Development (LCHD) The life course perspective views health as a dynamic process that accumulates over time. Medical-preventive integration applies this theory by emphasizing early intervention and continuous monitoring. By integrating prevention into every stage of life—from

maternal and child health to geriatric care—the healthcare system can more effectively mitigate chronic disease risks and improve long-term health outcomes.

2.3 System Science and Integrated Care From a systems perspective, the healthcare system is a complex network of interdependent components. Integrated care theory suggests that fragmentation leads to inefficiency and poor patient outcomes. Medical-preventive integration utilizes system science to optimize resource allocation, ensuring that information flows freely between primary care providers, specialist hospitals, and disease control centers.

3. Implementation Pathways

To achieve effective medical-preventive integration, a multi-dimensional approach involving policy, technology, and organizational restructuring is required.

3.1 Institutional and Policy Innovation Governments must establish clear policy frameworks that incentivize integration. This includes reforming

2023 雷桃等

Research on Practical Strategies for the Integration of Medical and Preventive Care in Domestic Family Doctor Teams

Abstract

The integration of medical and preventive care is a core requirement for the high-quality development of primary healthcare services in China. As the "gatekeepers" of resident health, family doctor teams play a pivotal role in implementing this integrated approach. This study explores the practical strategies for integrating medical and preventive services within domestic family doctor teams by analyzing current service models, identifying existing challenges, and proposing optimization paths. The research indicates that while significant progress has been made in contracting services and basic public health projects, issues such as insufficient professional synergy, unbalanced incentive mechanisms, and information silos persist. To address these, this paper suggests strengthening the collaborative capacity of multidisciplinary teams, improving performance evaluation systems that prioritize health outcomes, and leveraging digital platforms to achieve seamless data sharing between clinical medicine and public health.

1. Introduction

With the acceleration of population aging and the shifting burden of chronic diseases, the traditional medical model that separates clinical treatment from preventive care can no longer meet the complex health needs of the public.

The "Healthy China 2030" blueprint explicitly emphasizes the transition from "treatment-centered" to "health-centered" services. Family doctor teams, serving as the fundamental unit of primary healthcare, are uniquely positioned to provide continuous, comprehensive, and coordinated care. The integration of medical and preventive care (医防融合) is not merely a technical combination of services but a systemic transformation of service delivery, management, and resource allocation.

2. Current Status of Medical and Preventive Integration in Family Doctor Services

Currently, the domestic model for family doctor services primarily relies on "contracted services" to bridge the gap between clinical care and public health. This model typically involves a team consisting of general practitioners (GPs), community nurses, and public health specialists.

As shown in , the core functions of these teams have expanded from simple outpatient consultations to include health archives management, chronic disease screening, and personalized health interventions. In practice, many regions have explored "joint clinics" where clinical diagnosis and health education occur simultaneously. For instance, during a routine follow-up for a patient with hypertension, the family doctor not only adjusts medication ($\bar{x}$ dosage) but also performs a risk assessment based on the patient' s lifestyle data, effectively merging secondary prevention with clinical management.

3. Key Challenges in Practical Implementation

Despite the policy push, several

2023 赵琳琳等

Limitations of the Medical-Preventive Integration Practice in Sanming, Fujian

1. Insufficient Depth in the Integration of Medical and Preventive Services

The current integration of medical and preventive services in Sanming remains primarily at a superficial level, characterized by a "physical combination" rather than a "chemical reaction."While institutional frameworks have been established, the actual synergy between clinical medicine and public health is limited. Clinical physicians often prioritize curative treatments over preventive measures, leading to a disconnect where public health services are treated as an auxiliary task rather than an intrinsic part of the healthcare delivery process. This lack of deep integration hinders the transition from a "treatment-centered" to a "health-centered" model.

2. Imbalance in Resource Allocation and Talent Shortages

Despite significant policy support, there remains a notable disparity in resource distribution between urban and rural areas. Primary healthcare institutions often face shortages of high-quality medical equipment and specialized personnel. The "brain drain" of skilled public health professionals and general practitioners to larger cities or private sectors persists due to relatively lower compensation and limited career advancement opportunities in grassroots facilities. This talent gap restricts the effective implementation of chronic disease management and health promotion programs at the community level.

3. Challenges in Information Sharing and Data Interoperability

The digital infrastructure supporting medical-preventive integration faces technical and structural hurdles. Although Sanming has made strides in health informatics, data silos still exist between different levels of hospitals and public health agencies. The lack of a fully unified, real-time data exchange platform prevents the seamless flow of patient information, such as electronic health records and immunization data. This fragmentation limits the ability of healthcare providers to conduct comprehensive health risk assessments and provide continuous, longitudinal care for patients.

4. Limitations of the Current Payment and Incentive Mechanisms

While the "Global Budget" system and the "All-in-One" payment model have incentivized cost control, the specific incentive structures for preventive services are not yet fully optimized. The current performance evaluation systems for medical staff still lean heavily toward clinical volume and surgical complexity, rather than long-term health outcomes or the effectiveness of disease prevention. Without a more robust financial incentive specifically targeting preventive outcomes, it remains difficult to motivate frontline clinicians to invest significant time and effort into health education and early intervention.

5. Low Public Awareness and Participation

The success of medical-preventive integration relies heavily on active public participation; however, health literacy among the general population remains uneven. Many residents still

2023 赵雅静

Innovating Medical-Preventive Integration to Build a Healthy China: Construction and Application of an Evaluation Index System for Primary Care Physicians' Medical-Preventive Integration Service Capabilities

Abstract

Promoting the integration of medical and preventive services is a critical strategy for advancing the "Healthy China" initiative. As the "gatekeepers" of residents' health, primary care physicians play a pivotal role in delivering integrated services. This study aims to construct a scientific and comprehensive evaluation index system to assess the medical-preventive integration service capabilities of primary care physicians and to explore its practical application. By synthesizing literature reviews, expert consultations, and empirical testing, we established a multi-dimensional framework that encompasses professional knowledge, clinical skills, public health service proficiency, and collaborative management capabilities. The application of this system provides a theoretical basis and practical tool for improving the quality of primary healthcare services and optimizing the allocation of health resources.

1. Introduction

The deep integration of medical treatment and disease prevention is a fundamental requirement for transforming the healthcare model from "treatment-centered" to "health-centered." In the context of an aging population and the increasing burden of chronic diseases, the traditional fragmented model of healthcare delivery is no longer sufficient to meet the diverse health needs of the public. Primary healthcare institutions serve as the frontline for medical-preventive integration. Therefore, evaluating and enhancing the service capabilities of primary care physicians is essential for the successful implementation of the Healthy China strategy.

Despite the policy emphasis on medical-preventive integration, there remains a lack of standardized tools to evaluate the specific competencies required for such integrated services. Existing evaluation frameworks often focus either on clinical skills or public health functions in isolation, failing to capture the synergistic nature of integrated care. This research seeks to bridge this gap by developing a robust evaluation index system tailored to the unique role of primary care physicians in the Chinese healthcare context.

2. Methodology

2.1 Index System Construction

The construction of the evaluation index system followed a rigorous methodological process. First, a comprehensive literature review was conducted to identify

core competencies associated with medical-preventive integration. Second, the Delphi method was employed, involving two rounds of consultations with a panel of experts in public health, clinical medicine, and health management. These experts provided feedback on the relevance, feasibility, and weighting of each proposed indicator.

The final index system is structured into three levels: - **Primary Indicators:** Broad domains of competence. - **Secondary Indicators:** Specific functional areas within each domain.

2024 陈存川

Research on Typical Paths and Implementation Mechanisms of Medical-Preventive Integration in China: A Thematic Framework Analysis

1. Introduction

The integration of medical and preventive services (medical-preventive integration) is a critical component of China' s "Healthy China" strategy and a fundamental requirement for deepening the reform of the medical and health care system. As the disease burden shifts from infectious diseases to chronic noncommunicable diseases, the traditional fragmented model—where medical treatment and public health services operate in isolation—has become increasingly inadequate. To address these challenges, various regions across China have explored diverse models to bridge the gap between clinical medicine and public health. This study aims to systematically analyze the typical paths and underlying implementation mechanisms of medical-preventive integration in China using a thematic framework analysis, providing a theoretical and empirical basis for further policy optimization.

2. Theoretical Framework and Research Methods

2.1 Thematic Framework Analysis This study adopts the thematic framework analysis method to categorize and synthesize the complex landscape of medical-preventive integration. This qualitative approach allows for the systematic classification of policy documents, regional case studies, and practical experiences into a structured matrix. By identifying recurring themes and core components, we can map the logical relationships between different intervention strategies and their outcomes.

2.2 Data Collection and Processing Data were collected from three primary sources: national and provincial policy documents related to medical-preventive integration, academic literature documenting regional pilot programs, and official reports from health commissions. The selection criteria focused on representativeness, innovation, and sustainability of the integration models.

3. Typical Paths of Medical-Preventive Integration

Based on the analysis, three typical paths of medical-preventive integration have emerged in the Chinese context:

3.1 The "Top-Down" Administrative Integration Path This path is characterized by the structural reorganization of health administrative departments and service providers. By merging public health institutions with clinical medical centers or establishing integrated health groups (such as County-level Medical Communities or Urban Medical Groups), the system achieves unified management of personnel, finances, and resources. This model emphasizes the institutionalization of public health functions within hospitals and the downward extension of specialized medical resources to primary care facilities.

3.2 The "Service-Driven" Functional Integration Path The service-driven path focuses on the continuity of the "prevention-treatment-rehabilitation" cycle. It is primarily implemented through integrated service packages for chronic disease management. In this

2024 崔珑严等

Current Implementation Status and Development Strategies of Medical-Preventive Integration in China: Based on Mechanism Design Theory

Abstract

The integration of medical and preventive services (medical-preventive integration) is a critical component of the "Healthy China" strategy and a fundamental requirement for establishing a high-quality, efficient integrated healthcare service system. This paper applies the framework of Mechanism Design Theory to analyze the current implementation status of medical-preventive integration in China. By examining the dimensions of information efficiency and incentive compatibility, this study identifies existing bottlenecks, such as fragmented information systems and misaligned incentive structures. Based on these findings, we propose development strategies aimed at optimizing resource allocation, improving information sharing mechanisms, and refining performance evaluation systems to promote the sustainable development of medical-preventive integration.

1. Introduction

With the transformation of the global disease burden and the acceleration of population aging, the traditional healthcare model, which focuses primarily on clinical treatment, is no longer sufficient to meet the public' s growing health needs. Medical-preventive integration—a collaborative model that combines clinical medicine with public health services—has become a core focus of China' s

healthcare reform. Despite significant policy support, the practical implementation of this integration faces numerous challenges, including institutional barriers and inefficient resource utilization.

Mechanism Design Theory, often referred to as "reverse game theory," provides a robust analytical framework for understanding how to design rules and systems that achieve desired social goals when participants have private information and individual interests. By applying this theory, we can better understand the structural causes of the current "decoupling" of medical and preventive services and design more effective pathways for integration.

2. Theoretical Framework: Mechanism Design Theory

Mechanism Design Theory focuses on two core principles: information efficiency and incentive compatibility.

1. **Information Efficiency:** This refers to the cost and effectiveness of information transmission within a system. In the context of medical-preventive integration, it concerns whether clinical data and public health information can flow seamlessly between primary healthcare institutions, hospitals, and disease control centers.
2. **Incentive Compatibility:** This principle ensures that when individuals pursue their own interests, their actions align with the overall goals of the system. For medical-preventive integration to succeed, the interests of healthcare providers (doctors, public health workers) must be aligned with the goal of improving population health.

3. Current Status and Challenges of Medical-Preventive Integration

3.1 Information Fragmentation and Low Efficiency

Currently, China'

2024 曹文文等

Key Issues, Institutional Innovations, and Implementation Paths for the Integration of Medical and Preventive Services

The integration of medical and preventive services is a critical strategy for building a robust public health system and achieving the goals of the "Healthy China" initiative. This approach aims to break down the traditional silos between clinical medicine and public health, fostering a synergistic relationship where "prevention is integrated into treatment, and treatment supports prevention."

1. Key Issues in the Integration of Medical and Preventive Services

Despite significant policy emphasis, several deep-seated challenges hinder the effective integration of medical and preventive services. These issues span institutional, structural, and operational dimensions.

Institutional Fragmentation and Functional Decoupling. Historically, the healthcare system has operated under a dual-track model where hospitals focus on clinical treatment while Centers for Disease Control and Prevention (CDCs) focus on public health interventions. This structural separation has led to a lack of coordinated governance, fragmented information flow, and misaligned incentives. Hospitals often prioritize high-tech curative services due to financial pressures, while public health functions are relegated to a secondary status.

Resource Misallocation and Talent Shortages. There is a persistent imbalance in resource distribution, with the majority of funding, technology, and high-level talent concentrated in tertiary hospitals. In contrast, primary healthcare institutions, which serve as the frontline for medical-preventive integration, often face shortages of qualified personnel and inadequate infrastructure. Furthermore, the lack of a unified career development path for "dual-capable" professionals—those proficient in both clinical medicine and public health—limits the workforce' s capacity to deliver integrated services.

Information Silos and Data Underutilization. Effective integration requires the seamless exchange of health data between clinical settings and public health surveillance systems. However, heterogeneous data standards and a lack of interconnected platforms have resulted in "information islands." This fragmentation prevents the real-time monitoring of chronic diseases and infectious outbreaks, undermining the ability to provide continuous, life-cycle health management for the population.

2. Institutional Innovations for Integration

To overcome these barriers, it is essential to implement systemic innovations that align the objectives of various stakeholders within the healthcare ecosystem.

Establishing a Collaborative Governance Framework. Innovation must begin with a top-down redesign of the administrative structure. This involves clarifying the responsibilities of health administrative departments, hospitals, and CDCs. By establishing a joint management mechanism, the healthcare system can transition from a "treatment-centric" model to a "health-centric" one. This includes

2024 皇甫慧慧

Research on the Implementation Mechanism of Medical-Preventive Integration under the Background of Constructing an Integrated Service System

1. Introduction

In the context of constructing an integrated medical and health service system, the integration of medical treatment and preventive care (medical-preventive integration) has become a core strategy for optimizing health resource allocation and improving population health outcomes. As the global disease burden shifts from infectious diseases to chronic non-communicable diseases, the traditional fragmented model—where clinical medicine and public health operate in silos—is no longer sufficient to meet the complex health needs of the public. The realization of medical-preventive integration requires not only the coordination of technical means but also a profound transformation of institutional mechanisms, resource sharing, and collaborative governance.

2. Theoretical Framework and Connotation

Medical-preventive integration refers to the organic combination of clinical medical services and public health services. This integration aims to provide continuous, comprehensive, and proactive health management throughout the entire life cycle. Within an integrated service system, this mechanism emphasizes the "people-centered" approach, breaking down the barriers between primary healthcare institutions, specialized hospitals, and public health agencies.

The theoretical foundation of this integration lies in the "Health in All Policies" approach and the "Triple Aim" of healthcare: improving the individual experience of care, improving the health of populations, and reducing the per capita cost of healthcare. By aligning the incentives of various stakeholders, the integrated system seeks to transition from a "treatment-centered" model to a "health-centered" model.

3. Key Implementation Mechanisms

3.1 Institutional and Governance Mechanisms The primary challenge in medical-preventive integration is the lack of a unified management framework. To address this, it is essential to establish a collaborative governance structure. This includes the formation of integrated health organizations (such as Accountable Care Organizations or Medical Communities) where administrative, financial, and personnel management are unified. Such structures facilitate the top-down implementation of preventive strategies within clinical settings.

3.2 Information Sharing and Big Data Integration Information technology serves as the "nervous system" of medical-preventive integration. The

fragmentation of data between electronic medical records (EMR) in hospitals and electronic health records (EHR) in public health systems must be resolved. By building a regional health information platform, real-time data exchange can be achieved.

For instance, when a patient is diagnosed with hypertension in a hospital, the data should automatically trigger a

2024 胡美丽等

During the conceptual formation of medical-preventive integration, emphasis should be placed on transforming consensus-based viewpoints into a unified operational language. Furthermore, these viewpoints should be formalized as policy texts through institutionalization to reduce ex-ante transaction costs for policy implementation.

Implementation Paths for Medical-Preventive Integration: All included literatures elaborated on the concept from various dimensions of implementation paths, as shown in . Based on transaction cost theory, this study categorizes the different implementation paths of medical-preventive integration into two types of institutional arrangements. The first type consists of institutional arrangements aimed at reducing ex-ante transaction costs, the core logic of which is to minimize institutional friction during the formation of contracts, agreements, consensus, rules, or systems. The second type consists of institutional arrangements aimed at reducing ex-post transaction costs, focusing on minimizing institutional friction during the execution and enforcement of these contracts, agreements, and rules.

Implementation paths for medical-preventive integration that reduce ex-ante transaction costs focus on minimizing information costs, negotiation costs, and contracting costs. These paths aim to enhance the predictability of medical-preventive integration as an institutional arrangement by clarifying institutional rules, service standards, and value norms. Sixteen of the included studies addressed systemic integration at the macro level [**?**, **?**, **?**, **?**, **?**, **?**], arguing that the priority of medical-preventive integration lies in the integrated redesign of both the medical service system and the public health service system. This necessitates concerted efforts in institutional design, structural improvement, and mechanism refinement. Specifically, the literature analyzed the integration of "medical" and "preventive" sectors across dimensions such as institutional rules, management systems, resource allocation, functional clarification, distribution of responsibilities and powers, decision-making objectives, and working mechanisms [**?**, **?**, **?**, **?**]. By reducing the cooperative negotiation costs caused by the heterogeneity between these two systems, the medical service system and the public health service system can achieve synergistic effects.

24 篇文献涉及微观层次的服务融合维度

[7, 11, 22-29, 32-36, 38-46]. The majority of these studies advocate for the mutual penetration, joint provision, and integration of preventive and medical services throughout the entire process of disease prevention, clinical diagnosis and treatment, rehabilitation care, and health promotion [11, 26, 32, 39]. Other literature emphasizes the need to focus on the integration of health management services with the former two categories [7, 28, 39, 44]. By pre-embedding the information costs of integrated medical and preventive services within the institutional framework, both demand-side and supply-side actors can reduce institutional friction through the unification of service standards and norms. Eighteen papers discussed the norms at the linkage level.

Concepts and Connotations of Medical-Preventive Integration

Medical-preventive integration refers to the combination and coordination of "medical services," characterized by "clinical treatment," and "public health services,"characterized by "prevention,"to achieve the integration of medical care and prevention. The primary subjects of integration are institutions, personnel, and disciplines; the content of integration is life-cycle health management; and the purpose of integration is to achieve service continuity and systematization.

"Medical-preventive integration" refers to breaking down the institutional and mechanistic barriers between the medical service system and the public health service system. It promotes integration across organizational management, resource allocation, business processes, information sharing, and team building. Based on a unified set of health values, it establishes departmental cooperation mechanisms to ensure effective linkage and synergy between medical and public health services. This provides residents with comprehensive, full-cycle health services to prevent disease, stop the deterioration of health problems, and improve health levels.

Medical-preventive integration involves embedding preventive services throughout the entire process of clinical diagnosis and treatment. It is the organic fusion of "medicine" and "prevention," manifesting in primary healthcare institutions as the orderly integration of basic medical services and public health services.

Medical-preventive integration refers to a new chronic disease prevention and control model that fuses medical services with disease prevention services. "Medicine" refers to medical care, primarily clinical work, while "prevention" refers to disease prevention, provided mainly by primary healthcare institutions and professional public health agencies.

Guided by the Party' s health and health work policy in the new era—which emphasizes "prevention first" —medical-preventive integration uses the effective synergy of treatment and prevention services as a lever. It achieves the organic connection of the entire service chain, including health promotion, prevention, treatment, rehabilitation care, and hospice care. This constructs an integrated

health service model covering the entire population and the full life cycle. It is a critical measure for shifting from a "disease-centered" to a "people' s health-centered" approach and promoting the high-quality development of the health sector. It is an inevitable requirement for placing people' s health in a strategic position of priority development and striving to protect people' s health in an all-round, full-cycle manner.

Medical-preventive integration is a full-cycle health service that merges medical services and public health services. It primarily includes a service system for disease prevention and screening, chronic disease management and control, health management and promotion, health record construction, and disease diagnosis and treatment.

The pathways for medical-preventive integration mainly include systemic integration, management integration, personnel integration, service integration, information integration, and performance integration.

Medical-preventive integration is a new health service model that advocates for the close combination of preventive and therapeutic medicine to achieve population health management across the entire life cycle. With "prevention first, combination of prevention and treatment" at its core, it aims to improve residents' health levels through health education, early screening, and timely treatment.

Medical-preventive integration is the combination of "treatment" and "prevention." Through the synergistic supply of medical and public health services, it reduces health problems while taking targeted control measures for specific health issues. This improves the quality, efficiency, and accessibility of healthcare services and enhances the sustainability of healthcare supply through disease prevention and health promotion, ultimately achieving a "health-centered" goal.

Connotations and Analysis of Related Concepts

Currently, the academic community has not reached a consensus on the definition of "medical-preventive integration." Although definitions vary, they all focus on the organic fusion of "medicine" and "prevention," emphasizing the scope of service collaboration and integration.

This study posits that the integration of medical and preventive services includes: systemic integration (promoting the integration of the public health and medical service systems); organizational integration (achieving horizontal and vertical integration of relevant institutions); professional integration (collaboration between medical personnel of different specialties based on capacity and responsibility to provide continuous and comprehensive services); service integration (integrating the content of service provision); and support element integration (functional and normative integration).

Note: Due to space limitations, the table only retains the core content of the

discussions on the concept and connotation of medical-preventive integration from the included literature.

[7, 11, 23, 26-35, 38-39, 41, 45-46] have reached a value consensus on the role of medical-preventive integration in improving patient health, reducing disease burden, and enhancing the efficiency of the healthcare system. It is argued that medical-preventive integration helps guide the transition of China' s health governance paradigm from being "disease diagnosis and treatment-centered" to "resident health-centered." Chen Jiaying et al. [11, 29, 38] contend that the ideology of tertiary prevention should be implemented throughout the entire process of integrated medical and preventive services. Normative integration reduces negotiation and contracting costs among different stakeholders within transaction costs, helping to facilitate universally accepted contracts or agreements, consolidating the value foundation, and achieving institutional stability.

The implementation pathways for medical-preventive integration aimed at reducing ex-post transaction costs focus on decreasing execution, coordination, supervision, and incentive costs. By optimizing organizational structures, integrating professional teams, strengthening patient participation, and unifying key functional elements, the enforceability of the institutional arrangement of medical-preventive integration is enhanced.

14 篇文献讨论了中观层次的组织融合维度

Studies [?, ?, ?, ?, ?, ?, ?, ?, ?] suggest that organizational integration encompasses the cooperation, connection, synergy, integration, and even restructuring of various levels and types of hospitals, primary healthcare institutions, disease control and prevention centers, and other specialized public health agencies.

According to [?, ?], supply-side integration is achieved at the organizational architecture level. Within this framework, Wu Xiaoyuan et al. argue that primary healthcare institutions occupy a central and leading position.

The literature suggests the establishment of inter-departmental cooperation mechanisms. Li Minggang et al. identify Medical Communities and Medical Alliances as critical organizational forms, while Hu Meili et al. advocate for the establishment of unified public health management centers. By reconstructing the boundaries of power and responsibility as well as collaborative relationships among multiple departments, organizational integration reduces coordination costs arising from overlapping, intersecting, or vacant responsibilities during service delivery. Six papers analyze the meso-level dimension of professional integration [?, ?, ?, ?, ?], proposing that professional integration should utilize multidisciplinary medical teams. This involves interdisciplinary personnel establishing professional partnerships based on competencies, roles, and responsibilities. Furthermore, some scholars argue that professional integration should be realized through talent cultivation, forming a comprehensive training system through collaboration between medical colleges, public health agencies, and medical institutions.

By forming interdisciplinary teams, professional integration reduces the asset specificity of public health and medical services, thereby mitigating problems such as professional barriers, operational segregation, and resource mismatch.

Only one study explains the micro-level dimension of individual patient integration, focusing on the proactive health and self-management of residents or patients. This perspective emphasizes that the community should serve as a platform for medical-preventive integration and advocates for the broad participation of residents.

Individual patient integration can stimulate proactive participation and the willingness for self-management among service recipients. To a certain extent, this internalizes part of the service supervision function within the patients themselves, thereby reducing external monitoring costs. Eleven papers analyze the functional integration dimension at the linkage level [**?**, **?**, **?**, **?**, **?**, **?**, **?**], discussing personnel, financing, finance, information, supervision, regulation, evaluation, and incentives. These studies point out that these functional elements serve as the critical support for medical-preventive integration.

References [**?**, **?**, **?**], including the work of Yuan Beibei et al.,

emphasize the importance of goal alignment in performance appraisal among regulatory departments. Hu Meili et al. highlight the criticality of establishing unified systems and information co-construction and sharing. By unifying information platforms, performance appraisals, and incentive mechanisms, functional integration helps reduce the implementation, supervision, and incentive costs of medical-preventive integration, acting as a "lubricant" for the effective operation of the integrated system.

2.4 医防融合的服务内容

[7, 11, 26-30, 32-36,

19 篇文献讨论了医防融合的服务内容

[38-41, 44-46], while eight publications did not explicitly or directly discuss this topic [22-25, 31, 37, 42-43], as shown in . Most of the literature analyzed continuous services ranging from prevention to rehabilitation [11, 27, 32, 38-39, 44]. However, not all studies covered the complete progression of disease development; some focused only on specific stages [40-41, 45-46]. Notably, Chen Jiaying et al. and Miao Yanqing et al. explicitly pointed out that the content of integrated medical and preventive services should incorporate the concepts and principles of three-level prevention. Liu Xi et al. argued that health management for chronic diseases is a key component of medical-preventive integration. Miao Yanqing et al., Wu Xiaoyuan et al., and Yuan Beibei et al. maintained that both general practice and specialist medical care should be provided within integrated services. Shi suggested that health emergency response needs to be incorporated into the scope of integrated services. The Healthy China Research

Network Expert Group proposed that palliative care should also be included. Cao Wenwen et al. emphasized that health education is a vital component, providing a beneficial supplement for enriching and extending the scope of integrated services. Furthermore, while most literature identified residents, patients, or specific diseases as the primary targets for intervention, only four publications considered broader factors beyond the individual—specifically the "social determinants of health" —proposing that integrated services should be implemented for the "entire population" or "communities" [11, 29, 37, 45]. Enriching and extending the content of integrated services allows for better interventions centered on comprehensive health risk factors and the full life cycle of disease progression. Fundamentally, the definition and standardization of integrated service content represent the definition and standardization of the "transaction object" between medical and preventive sectors. By clarifying service items, service cycles, and target populations, it is possible to reduce information costs for the demand side arising from vague service descriptions, as well as internal negotiation costs for the supply side caused by unclear service boundaries. Through the design of service continuity, standardized service specifications can further reduce referral, coordination, and adaptation costs caused by service fragmentation. Therefore, improving the content of integrated medical and preventive services involves both the standardization of the supply structure and the continuity and synergy of the service process, which collectively reduce multiple transaction costs.

Regarding the characteristics of medical-preventive integration [11, 26-41, 44-45], the remaining literature did not explicitly or directly discuss the relevant content.

19 篇文献讨论了医防融合特征［

Nine studies discussed the continuity, cohesion, or synergy of medical-preventive integration, making this the most frequently addressed characteristic among the included literature [26, 28-29, 32-36, 40]. These studies argue that medical-preventive integration aims to resolve the fragmentation between prevention and treatment, promoting effective linkage between medical and preventive services to form a closed loop of prevention and control, thereby providing patients with continuous care [26, 28, 33, 36, 40]. Such characteristics can be viewed as an attempt to reduce the multiple transaction costs associated with service fragmentation. Furthermore, eight papers discussed the "full-cycle" or "whole-life-cycle" characteristics of medical-preventive integration [29, 38-41, 44-45]. This primarily refers to providing integrated services ranging from prevention to rehabilitation, or from infancy to old age, reflecting the diachronic and dynamic nature of this integration. This approach helps reduce adaptation costs caused by service interruptions or disconnections during life-cycle transitions. Additionally, six papers posited that medical-preventive integration is comprehensive in nature [27, 32, 38-39, 41, 44], requiring holistic intervention across all health determinants. Another six papers characterized medical-preventive integration

as systematic or comprehensive.

Chinese General Practice: Basic information and the integration of pathways, contents, and characteristics of included studies; implementation pathways for integration; and integrated service content.

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Expert Group Consensus on Innovating Medical-Preventive Synergy Mechanisms, Strategies, and Implementation Paths

Introduction

The effective integration of clinical medicine and public health is a cornerstone of a resilient healthcare system. To address the evolving challenges of chronic disease management and infectious disease outbreaks, it is imperative to innovate the mechanisms, strategies, and implementation paths of medical-preventive synergy. This consensus document summarizes the findings from the Academic Symposium on Innovating Medical-Preventive Synergy, outlining a comprehensive framework for future development.

1. Theoretical Framework and Strategic Objectives

The core objective of medical-preventive synergy is to transition from a treatment-centric model to a health-centric model. This requires the seamless integration of clinical services with public health functions across all levels of the healthcare system. The strategic focus should be on building a "Total Health" ecosystem that emphasizes early screening, precise intervention, and continuous management. By aligning the incentives of hospitals and public health agencies, we can ensure that preventive measures are not merely supplementary but are foundational to clinical practice.

2. Key Mechanisms for Innovation

2.1 Institutional and Organizational Integration To achieve true synergy, institutional barriers between hospitals and Centers for Disease Control and Prevention (CDCs) must be dismantled. We propose the establishment of joint management committees and integrated departments that oversee both clinical quality and public health outcomes. This structural alignment ensures that public health experts have a voice in clinical decision-making and that clinicians are actively involved in community health surveillance.

2.2 Data Sharing and Information Interoperability A unified digital health infrastructure is essential for medical-preventive synergy. Current data silos hinder the timely identification of health risks. We advocate for the development of integrated electronic health records (EHRs) that incorporate both

clinical data and public health indicators. Utilizing machine learning and deep learning algorithms, these systems can provide real-time risk assessments and predictive modeling to guide both individual patient care and population-level interventions.

2.3 Incentive and Resource Allocation Mechanisms The current fee-for-service model often disincentivizes preventive care. We recommend transitioning toward value-based payment models that reward health outcomes rather than the volume of services provided. Financial resources should be strategically allocated to support "medical-preventive integrated" positions, ensuring that healthcare providers are compensated for their contributions to disease prevention and health promotion.

3. Implementation Paths and Strategies

3.1 Strengthening Primary Care as the Frontline Primary healthcare institutions serve

2024 胡美丽等

[11, 26-27, 32-33, 40], these studies highlight the inherent attributes of medical-preventive integration, where various constituent elements are interconnected, organically combined, and mutually reinforcing. These two categories of characteristics reflect the focus of medical-preventive integration on diverse risk factors and multifaceted components. The objective is to reduce coordination costs during risk prevention and control or element synergy processes through structural integrity.

Internal Characteristics of Integration

Furthermore, nine of the included studies identified additional internal characteristics of medical-preventive integration [11, 28-31, 34, 37-39]. Among these, two papers pointed out the characteristics of the "whole-process" or "full-chain" approach [11, 28], while two others emphasized the principle of "prevention first" [34, 38]. Other characteristics mentioned individually across the remaining literature include using the community as a platform with broad resident participation, utilizing family doctors as a key entry point, implementing personalized and multi-measure interventions, adopting multidisciplinary and spatio-temporal perspectives, focusing on primary healthcare, and covering the entire population.

Systematic, continuous, and comprehensive; integrated, continuous, and whole-process; cross-spatiotemporal, multidisciplinary, comprehensive, and holistic; comprehensive and full-lifecycle.

3.1 医防融合概念及内涵丰富但未形成共识，易引致

High Ex-ante Transaction Costs: This study finds that while the literature discusses the concept and connotation of medical-preventive integration (MPI), a universal consensus has not yet been reached. Most studies focus on service levels, provider perspectives, integration attributes, systemic thinking, and practical characteristics. This reflects high negotiation costs during the initial institutional phase, as stakeholders face significant disputes over concepts, connotations, standards, and mechanisms. Such ambiguity may lead to substantial transaction costs during institutional implementation; therefore, it is necessary to progressively transform consensus-based viewpoints into formal institutional rules. Furthermore, MPI is not a native academic concept but rather an integration of norms, systems, and services covering disease prevention, diagnosis, control, treatment, and rehabilitation. It emphasizes systemic and comprehensive approaches to norms, functions, organizations, and services, encompassing primary health care, general and specialist medical care, rehabilitation, and nursing. It involves tertiary prevention, organizational and service norms, and a full chain of promotion, prevention, treatment, rehabilitation, and hospice care for the entire population across the full life cycle. This includes disease prevention and screening, chronic disease management and control, health management and promotion, health record construction, and clinical diagnosis and treatment functions.

The concept of medical-preventive integration in China originates from the internationally popular notion of integrated care and domestic practical experience in combining prevention with treatment, characterized by top-down strategic design. Consequently, most included literature analyzes issues such as "why provide services, what services to provide, and how to provide them" from the provider' s perspective. The core concern lies in supply-side service reforms that follow policy trends, rather than demand-side changes in needs over time. While this provider-led approach helps reduce negotiation costs during the initial stages of institutional exploration and top-down design, the unintentional neglect of key factors influencing demand-side participation may lead to high external monitoring costs during implementation. This is because the realization of MPI requires the active participation of the demand side as the "primary person responsible for their own health." Among the included literature, only the study by Gan Chunyu highlights a bottom-up demand perspective, arguing that MPI requires the community as a platform and advocates for broad resident participation. Furthermore, given the localized and practical nature of MPI, the literature naturally follows policy discourse and practical logic, with less emphasis on theoretical frameworks, resulting in a lack of academic rigor. Only a few studies consider integrated medical service theory and symbiosis theory [**?**, **?**, **?**, **?**]. Under these circumstances, it is difficult for different studies to engage in academic differentiation and theoretical dialogue, which hinders the achievement of consensus (contracts or agreements) regarding conceptual connotations, evaluation standards, and implementation mechanisms. In summary,

this study attempts to define the concept of MPI based on transaction cost theory: MPI is an institutional arrangement that, through paradigm shifts, institutional construction, and the refinement of systems and mechanisms, optimizes the governance structure of the health service system, innovates service models, and reduces internal transaction costs. It provides integrated prevention, treatment, rehabilitation, health management, and promotion services covering the entire process, the whole population, and the full life cycle, ultimately achieving "people' s health-centered" high-quality development of the health sector.

The implementation pathways of medical-preventive integration are multidimensional but unbalanced, which easily leads to high ex-post transaction costs. This study found that the included literature focuses on various dimensions of MPI implementation pathways. Ranked by the number of publications, these are: services (24), norms (18), systems (16), organizations (14), functions (11), professions (6), and individuals (1). It is evident that research focuses heavily on service delivery, value foundations, and system design, while analysis of organizational structures, functional elements, professional composition, and individual patients remains limited, showing a clear imbalance in pathway emphasis. From the perspective of transaction cost theory, this imbalance reflects path dependency and prioritization in the institutional construction of MPI. The integration of services, norms, and systems belongs to the ex-ante stage of institutional design (contract or agreement signing), focusing on reaching value consensus, unifying rules, and clarifying standards; thus, these are prioritized in the research. Conversely, integration at the organizational, functional, professional, and individual levels belongs to the ex-post stage of institutional implementation (contract fulfillment), focusing on facilitating organizational coordination, ensuring complete elements, integrating professions, and encouraging patient participation; these are discussed less frequently. It must be noted that the embedded integration of functional elements—such as personnel, financing, information, and performance—is the key support for linking the MPI service system and maintaining its long-term operation. Multidisciplinary medical teams must possess the necessary knowledge and awareness of integrated services, and individual residents should fully participate. Therefore, equal importance should be given to the organizational, functional, professional, and individual dimensions to minimize total transaction costs by reducing ex-post transaction costs.

The service content of medical-preventive integration is comprehensive but limited in scope, which tends to increase multiple transaction costs and the need to cultivate proactive health awareness. This study finds that most literature discusses MPI service content based on the progression of disease development, covering a closed loop from prevention, early screening, diagnosis, and treatment to management, control, and rehabilitation. This demonstrates a gradual extension to both the front and back ends of medical and public health services, making the content relatively comprehensive. However, most literature remains confined to the categories of preventive and medical services or marginal expansions thereof. Only a few studies emphasize that health management services should be included within the scope of MPI [**?**, **?**]. Cao Wenwen et al. and the

Healthy China Research Network Expert Group respectively argue that health education and hospice care (life education) are also important components of MPI service content; this study categorizes these under the scope of patient empowerment services. Services in this category aim to activate the roles of patients or residents as the "primary persons responsible for their own health," enhancing their conscious responsibility and behavioral capacity regarding health. It should be noted that the literature often provides simple lists or general generalizations when discussing service content, with insufficient specific definitions and classifications. For example, while all included studies agree that the scope of MPI includes preventive services, only a small portion specifies that these include disease prevention, health education, and early screening [?, ?]. Furthermore, only four studies consider broader factors beyond the individual within the "social determinants of health" [?, ?, ?], explicitly proposing MPI services at the "whole population" or "community" level rather than just the resident, patient, or disease level. From the perspective of transaction cost theory, the aforementioned limitations in service scope, lack of clarity in service content, and incomplete consideration of factors may lead to multiple transaction costs, including information and negotiation costs during the formulation of service norms, as well as coordination, referral, and adaptation costs during service delivery.

The characteristics of medical-preventive integration are diverse but insufficiently explained, which tends to increase multiple transaction costs. This study finds that the included literature emphasizes the differences between MPI and existing service models, highlighting key characteristics such as continuity, full-cycle coverage, comprehensiveness, and systematization when defining the concept. These institutional characteristics help mitigate multiple transaction costs, such as execution, adaptation, and coordination costs, during the MPI service process. However, the discussion of these characteristics in the literature is mostly descriptive, lacking detailed analytical explanation. For example, when discussing the "comprehensive" characteristic, although the literature agrees on the need for comprehensive intervention in health-influencing factors, it fails to explain the specific content regarding the sources, composition, risks, and impacts of these factors. Consequently, different stakeholders may have divergent understandings and implementations of MPI characteristics, leading to higher transaction costs.

4 小结

Using a systematic review methodology, this study included a total of 27 publications to analyze the concept, connotation, implementation pathways, service content, and integration characteristics of the integration of medical and preventive services (IMPS).

According to the *Chinese General Practice* journal, the publication years of the included literature showed no significant temporal pattern. However, the volume of publications was higher in 2021, 2022, and 2024, with 7, 8, and 7

papers published in those years, respectively.

The definitions and connotations of IMPS vary significantly across the literature, yet they generally exhibit characteristics related to the service level, provider perspective, integrative attributes, systems thinking, and practical features. This reflects the conceptual ambiguity and definitional diversity of IMPS during the early stages of institutional development, which tends to lead to high ex-ante transaction costs. While the implementation pathways for IMPS are multidimensional, there is an imbalance in focus; research heavily emphasizes integration at the service, normative, and systemic dimensions, while the organizational, functional, professional, and individual dimensions remain understudied. This suggests a path dependency and specific prioritization in the institutional construction of IMPS, which may result in high ex-post transaction costs. Furthermore, while the service content of IMPS is comprehensive, its scope remains limited, focusing primarily on preventive and medical services and their marginal expansion. Less attention is paid to health management and patient empowerment services, and there is insufficient focus on broader social determinants of health. This indicates that IMPS may face multiple transaction costs when formulating service norms and providing service projects. The characteristics of IMPS are diverse, with key features identified as continuity, full-lifecycle coverage, comprehensiveness, and systematization; however, the specific elaboration and analysis of these features remain thin. This suggests that different stakeholders may have divergent understandings and execution of IMPS characteristics, potentially leading to multiple transaction costs. In summary, this study argues that future research should increase focus on the demand-side perspective and provide more rigorous academic elaborations of the concept to reduce ex-ante transaction costs. It is also necessary to enhance analysis of organizational, functional, professional, and individual integration dimensions to lower ex-post transaction costs. Expanding the scope of IMPS services to include preventive, medical, managerial, and patient empowerment services, while providing detailed discourse on its core characteristics to clarify their logic and connotation, will further help mitigate overall transaction costs. Based on these findings, this study proposes the following policy and research recommendations.

This study contends that IMPS should balance top-level design with concrete execution by improving implementation guidelines and supporting policies. We found that while existing literature shares a consistent direction in its understanding of IMPS, a universal consensus has not yet been reached. Current IMPS practices are primarily driven by central guidance and local exploration, which may pose significant challenges for regions with weaker governance capabilities. Therefore, it is recommended to synthesize the practical experiences of pilot and demonstration areas with varying levels of socio-economic development to specify service content and refine feasible implementation guidelines. By improving institutional rules, clarifying policy boundaries, and defining the responsibilities of various subjects, ex-ante transaction costs at the design stage can be reduced, as can ex-post transaction costs caused by unclear concepts or in-

consistent standards during execution. Additionally, the advancement of IMPS requires optimizing financing structures, standardizing performance appraisal targets, strengthening professional training and management, and promoting the construction of information-sharing platforms. By balancing different implementation pathways and embedding institutional mechanisms into stages with high ex-post transaction costs, the total transaction costs of the IMPS system can be minimized.

This study maintains that IMPS should incorporate both the provider's perspective and the requester' s concerns, adhering to a people-centered approach that emphasizes resident agency. When designing and operating the IMPS system, focus should not only be placed on provider-side reforms in prevention, medical care, health management, and patient empowerment—enabling them to provide precise, personalized, and dynamic integrated services tailored to local conditions and individual needs—but also on strengthening residents' responsibility for their own health. By activating the role of the resident as the "primary person responsible for their own health," individuals can be encouraged to engage in proactive health behaviors, self-management, and conscious action. This, in turn, reduces opportunistic behavior and external monitoring costs within the system' s operation.

This study argues that IMPS should bridge practical responsiveness with theoretical inquiry, integrating empirical experience with academic logic. As both a policy term and an academic concept, the proposal of IMPS stems from China' s long-term development of its health service system and is inspired by international concepts such as integrated care, primary health care, and person-centered care. Consequently, it possesses both policy continuity and academic extensibility. When interpreting the concept and connotation of IMPS, it is advisable to combine practical experience with academic logic. This will help diverse stakeholders—including policymakers, frontline practitioners, academic researchers, patients, and residents—form a more comprehensive, rigorous, and accessible understanding, thereby consolidating a consensus on values and maintaining the stability of the institutional operation.

This study has several limitations. Given the localized nature of the IMPS concept and the lack of a standardized English definition, English databases were not searched. While this approach aligns more closely with domestic policy discourse and practice, it may have excluded literature discussing the concept of IMPS in China from an international perspective. Furthermore, some studies do not define the concept directly but discuss it indirectly through indicators, models, pathways, and mechanisms. Although we attempted to capture these during search string design, screening, and extraction, some less explicit interpretations may have been overlooked. Additionally, while this study utilizes Transaction Cost Theory from New Institutional Economics to explain the connotations, pathways, content, and characteristics of IMPS, the theoretical perspective remains singular. Future research could introduce or construct more diverse and appropriate theoretical frameworks.

The objective of this study was to synthesize evidence regarding the conceptual discussion of IMPS; it did not use empirical data to test transaction costs. Future research could attempt empirical verification in this area.

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