Politecnico di Torino

Master's Degree in Systemic Design
Academic Year 2024/2025

A Systemic Study On The Design Of Mental Health Care Services For Elderly People In The Community

—— The Case Of Jing'an District, Shanghai, China

Thesis project by Leyun Cai (s321110)
Supervised by Amina Pereno, Silvia Barbero, Wen Lu
Collegio di Architettura e Design

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Abstract

With the aging of China's population, mental health problems in the elderly have become increasingly prominent. Despite the government actively promoting the construction of home and community-based elderly care and mental health service systems, challenges remain. These include issues such as inadequate systems, poor service quality, and a shortage of professionals, particularly a lack of specialised care services for people at high risk of mental health problems (such as elderly people living alone). This study uses systemic design methods and service design tools to analyse the current state of community mental health services for the elderly in Jing'an District, Shanghai, China. The aim is to identify opportunities for improvement and the needs and pain points of elderly residents. Ultimately, a practical community mental health prevention and psychological support service plan will be proposed.

Based on extensive research, this study reveals the complex challenges of the community elderly mental health service system in Jing'an District and proposes design strategies for the community elderly mental health service system based on the principles of human-centred design, build relationships and act locally. The psychological comfort service platform and online-to-offline activities are designed to alleviate the loneliness of the elderly and help them build strong social networks. The management can monitor risks in real time and achieve timely referrals through data sharing.

This research provides a reference model and localised practical experience for constructing regional elderly care services. It also offers a basis for policymaking and promotes the professional development of community mental health services. However, the study has limitations, such as a lack of quantitative research to verify the validity of the conclusions and the need for further verification of the project's replicability.

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CHAPTER 01

The Research Topic And The Purpose

1.1 The Research Topic

This study aims to use systemic design methodologies to identify deficiencies in Jing'an District's community mental health service system in Shanghai. Through comprehensive research and analysis, the study will explore the mental health service needs and pain points of elderly residents. The study will address the following core question: 'How can design enhance the community's capacity for the dynamic management and personalised delivery of mental health services?'

This study focuses on the Jing'an District of Shanghai to explore the potential for developing systematic, community-based mental health services in urban Chinese communities. While considering the transferability of localised actions, the study aims to provide a reference case for expanding the model to other cities.

In this study, 'community elderly' refers to people aged 60 and over who live in the community, and 'community mental health services' refers to basic public health services organised by government departments.

This study was supervised by professors and researchers from the Systemic Design Lab at the Politecnico di Torino. The study was co-directed by Prof. Amina Pereno, researcher Wen Lu and Prof. Silvia Barbero. In addition, the Health Commission and the Civil Affairs Bureau of Jing'an District in Shanghai supported this study by providing the land for the project, based on their excellent practices in public mental healthcare for the elderly.

1.2 The Research Purpose

This study aims to analyse the mental health system in Jing'an District, Shanghai, using systemic design methods. The study will discover improvement opportunities in the existing system and accurately identify the mental health needs and pain points of elderly community dwellers. It will also propose a community service programme for preventing mental illness and providing mental comfort, with

practical application value. Finally, the study will provide a basis for promoting the precise development of community-based elderly care services.

This study will identify the common mental health needs of the elderly in the community through extensive research on their current living conditions. It will also seek to understand the key factors influencing their mental health and highlight the specific needs of high-risk groups, such as those living alone or of advanced age. The research goal is to construct a hierarchical community public service system based on the differences in demands, and improve the efficiency and accuracy of matching services with the demands of different elderly groups.

Furthermore, this research will use service design methodologies and tools to gain a deeper understanding of the internal architecture of the service system and to gain more detailed insights into the needs and pain points of service receivers. For example, the stakeholder map will help to systematically sort out the connections among stakeholders, distinguishing between core and non-core stakeholders. The service system map clearly illustrates the material, information and financial flows between various stakeholders in the current mental health service process.

This study expects to achieve the following goals through systemic analysis and future scheme design:

- **Propose feasible solutions to the mental health problems of the elderly**
- **To achieve unity between universality and difference.**
- **Ensure the precise utilisation of local resources.**
- **Realise the sustainability of future service system development.**

Through this study, combined with the understanding of system complexity, the complete framework of the mental health community service system in Jing 'an District, Shanghai will be depicted. Based on this, problem discovery and opportunity analysis will be carried out. A development plan for the future of the elderly mental health community service system in Jing'an District, Shanghai will then be proposed to help integrate local resources according to regional characteristics, optimise stakeholder cooperation within the system and achieve systematic optimisation.

We expect the results of this research to provide a referable system design solution for other urban communities in China, address the increasingly severe challenges posed by an ageing population, and support the well-being of elderly residents in future urban communities.

CHAPTER 02

Literature Research On Current Situation

2.1 The Current Situation Of China's Aging Population And The Elderly Care Services

China is experiencing accelerated population ageing and the elderly population continues to grow. According to data from the National Bureau of Statistics of China's National Economic and Social Development Statistics Bulletin (2023), by the end of 2023, the population aged 60 or over had reached 297 million, accounting for 21.1% of China's total population. Of this group, 217 million were aged 65 or over, accounting for 15.4%). Compared with the 2020 Seventh National Census, the total elderly population increased by 3.2%, while their proportion of the national population increased by 2.1% (National Bureau of Statistics of China, 2024).

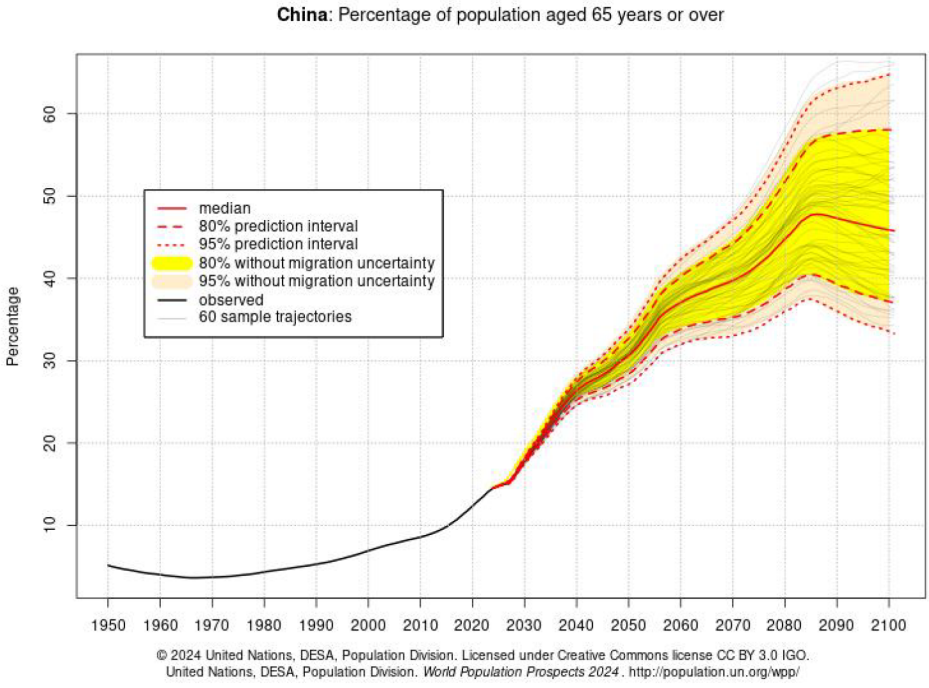


Figure 1. The percentage of the population in China aged 65 years or over (United Nations, 2024).

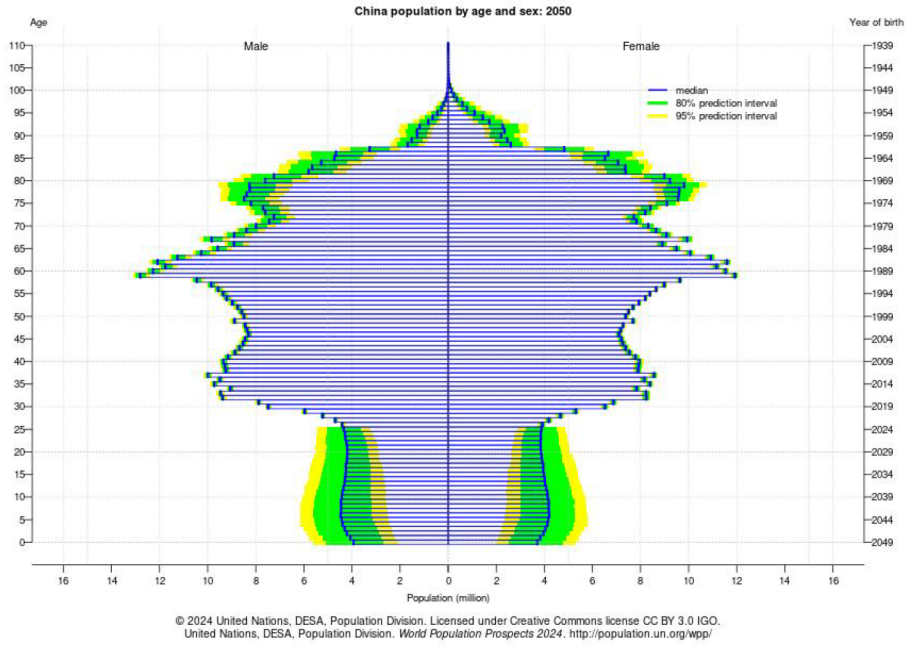


Figure 2. The demographic structure of China in 2050 (United Nations, 2024).

The rapid economic development of the past few decades has led to profound changes in Chinese residents' fertility concepts, and it is difficult to foresee a rapid rebound in the short term (Ge, et al., 2020). According to World Population Prospects 2024, published by the Population Division of the United Nations Department of Economic and Social Affairs, the proportion of the elderly population aged 65 years and older in China is predicted to climb to around 30% by 2050, with this figure continuing to rise over the next 50 years (United Nations, 2024).

In response to the severe challenges posed by an ageing population, China is implementing a national strategy to actively address this issue. The strategy focuses on improving the social security system and optimising the elderly service system.

At present, China's elderly care model presents a pattern of "home-based, community-based, and supplemented by institutions" (Li, & Wang, 2023). Statistics from the White Paper on the Development of China's Home-Based Elderly Care Industry (2021–2022) show that, by the end of 2021, less than 1% of elderly people in China were living in care institutions, with the vast majority choosing home and community-based care. This places significant strain on the basic care service system. It is worth mentioning that constructing China's elderly care service system requires addressing multiple complex factors, including demographic changes, shifts in family residence patterns, regional development imbalances, and other characteristics. These factors collectively lead to challenges in developing a home-based elderly care service model (Hu, 2024).

At a specific promotional level, China is actively developing a model that combines home and community care. The focus is on implementing home care services in urban and rural communities. In November 2021, the Chinese government issued the 'Opinions on Strengthening the Work of the Elderly in the New Era', which explicitly proposed pushing forward the high-quality development of elderly care and innovating the home and community care model by relying on the community (Central People's Government of the People's Republic of China, 2021). In January 2025, the government also issued the 'Opinions on Deepening the Reform and Development of Elderly Services', further emphasising the need to consolidate the fundamental role of home-based elderly care and strengthen the supporting role of community-based elderly care, expanding the effective supply of community-based elderly care services.

However, it should be noted that the implementation of this elderly care model still faces many challenges, including a lack of comprehensive legal protection, an inadequate system, insufficient elderly care organisations, substandard service quality, a shortage of professional care staff, and other practical issues (He, 2022).

In terms of service content, China's current basic elderly care system consists mainly of three categories: material support, living services, and caring services. The focus is on providing the elderly with basic, universal, and minimum protection (General Office of the Central Committee of the Communist Party of China & General Office of the State Council, 2023).

Material support can take the form of cash or material protection measures such as old-age pensions, assistance payments and living subsidies. Living services cover services such as help with house cleaning, meal assistance and mobility assistance. Caring services mainly manifest as caring measures such as Telephone consolation and community patrols for special groups such as elderly people living alone (People's Government of Xingyang, 2025). Following a lengthy development period, China's community-based home care routine service system has gradually improved; however, there is still a notable shortage of services for specific groups. Recently, some communities have started to develop specialised elderly care models for vulnerable groups, such as elderly people with advanced age, elderly people living alone, elderly families and disabled elderly people (Shanghai Municipal People's Government, 2023).

For instance, some districts in Shanghai have already implemented the "Senior Partner" service, guiding relatively healthy young elderly people to participate in community volunteer services, form partnerships with elderly people living alone, and provide them with some daily life assistance.The "elderly helping the

elderly" model not only has assisted many elderly people in need, but also many young volunteers have felt happy in "helping others to help themselves".

In order to cope with the situation in which the elderly home-based population continues to grow but the supply of services remains insufficient, it is impossible to meet demand solely through community services. Therefore, in addition to community services, China is trying to encourage social groups to participate in service provision through policy, stimulate the vitality of the elderly care market and integrate resources from various parties to help communities improve their service provision and quality.

Figure 3. The volunteer is sharing the latest city news with the elderly partner

2.2 Current Status Of Research On Mental Health Services For The Elderly

Mental health problems affecting the elderly are potentially universal and require more attention in the context of an increasing ageing global population. At the end of 2024, the results of research into the mental health status of the elderly in Beijing were published in the Blue Book on the Development of Mental Health Among Chinese Nationals, released by the Institute of Psychology of the Chinese Academy of Sciences (IPSC). The data showed that 19.05% of elderly people were experiencing mild depression, while 12.17% were experiencing moderate to severe depression.

Attention to the mental health of older adults in China is also increasing. In 2019, China's National Health Commission's Department of Elderly Health issued the 'Notice on the Implementation of the Mental Care Programme for Older Adults' (National Health Office of the Elderly Letter [2019] No. 322), setting out three goals: understanding and grasping older adults' mental health status and needs; improving grassroots staff's mental health service skills; and enhancing older adults' mental health awareness. In 2022, China's National Health Commission (NHC) announced its intention to implement a variety of pilot initiatives for geriatric mental healthcare across the country from 2022 to 2025. These initiatives will include staff training, mental health assessments and promotion for individuals over 65 years of age, as well as necessary interventions and referrals. With the joint efforts of organisations at all levels, a more comprehensive mental healthcare service network for the elderly is expected to be established in China in the future, with strengthened basic services such as problem screening, psychological counselling and crisis intervention.

After conducting a literature review on the community mental health service model for the elderly, we learned that the current community intervention measures for mental health in this age group can be classified into four categories: connector interventions, gateway approaches, direct interventions, and system approaches (Lee et al., 2022).

(1) Connector Interventions

This model focuses on elderly community members who do not participate in community activities. By contacting them and providing social activities, it will help these people to enhance their sense of community participation and obtain emotional support. For example, Giebel et al. conducted a study on a UK support service called 'Community Connectors', which provides local support for lonely and isolated elderly

people through community connectors recruited from the public. Research findings confirm that community liaison services alleviate underlying mental health problems by building social connections and new social networks (Giebel et al., 2022).

In addition to digital platforms, more traditional methods such as telephone communication and email can be adopted to provide comfort services for the elderly. For example, the UK's 24-hour help hotline helps older people to seek help and find information, while the telephone companionship service calls older people who are lonely and provides them with a free 30-minute conversation once a week (Preston et al., 2019). Similar services exist in China, such as the "Xiaodianzhang" service in Ningbo, which provides social support to elderly people living alone through an integrated online and offline chat system (Tang et al., 2023). Several cities have also set up municipal hotlines for psychological crisis intervention.

(2) Gateway Approaches

This model emphasises improving the accessibility of community services for the elderly by optimising community infrastructure, including improvements to the built environment, transport facilities and digital facilities. Digital facilities, in particular, can provide older people with access to psychological support in a cost-effective, remote manner. Recent studies have shown that they can help participants to expand their social networks, strengthen existing connections and build harmonious community relationships (Ibarra et al., 2020). For example, Borghouts et al.'s research indicates that, after using the MyStrength digital mental health platform for two months, 78% of elderly participants provided positive feedback and said they would recommend it to others. However, these results are based on the assumption that digital literacy training and employee support are provided for older people. To ensure the continuous effectiveness of digital platforms, attention must be paid to the various malfunctions experienced by older users of such platforms (Borghouts et al., 2022).

(3) Direct Interventions

This model refers to intervention methods, whether one-to-one or group-based, that improve the social participation of the elderly or provide mental health support. Peer support models and group therapy are common mental health intervention models that can be used to support the mental health of elderly people in the community. Liu's research provides psychological care services for elderly people with mild to moderate depressive symptoms, or who are at risk of depression, through a hierarchical management model. This service is provided in the form of group therapy. According to their risk level, participants are assigned to groups of six to ten people to discuss

topics such as pain, stress and cognitive behavioural therapy. Trained peer supporters are also involved in the service. The study's results also suggest that peer support and group therapy positively impact mental health, though cost-effectiveness requires further evaluation (Liu et al., 2022).

Peng Fei's research shows that group activities such as health science popularisation, art therapy and fitness classes can improve anxiety levels and sleep quality in participants (Peng & Zhou, 2020). Additionally, some studies have demonstrated improvements in the physical and mental state, social adaptation and social relationships of the elderly through music group therapy intervention (Zhou et al., 2022).

(4) System Approaches

The system approach requires the use of more resources, the collaboration of stakeholders from various fields, and the establishment of a multi-angle, multi-level service model to create an environment that promotes the mental health of the elderly. For example, Gosdin et al. verified a collaborative care model for depression in older adults, involving caregivers, administrators and primary care workers. This model extends existing services, strengthens collaboration models and helps build trust among socially vulnerable patients (Gosdin et al., 2024). Romero et al. carried out an intervention programme in Barcelona, involving primary healthcare nurses, family doctors, social workers, and neighbourhood community workers. The programme targeted elderly people aged 65 and over who experienced moderate or severe loneliness. The collaboration of multiple departments during the process made the elderly feel that social resources could be accessed. The results also suggest that this measure can increase social support for older adults and reduce depressive symptoms (Rodríguez-Romero et al., 2021). A few local Chinese scholars have suggested that a psychological assistance platform should be set up for elderly people in the community, involving the community, the government and medical institutions, to improve mental health and provide counselling services. They suggest setting up counselling rooms where professional practitioners could provide mental health counselling, healthcare and popularisation education services for elderly people in the community (Qu & Jing, 2021).

2.3 Influencing Factors Of Mental Health In The Elderly

Since 2000, scholars around the world have conducted extensive research into the factors influencing mental health in the elderly, and their conclusions have demonstrated commonalities. Existing research indicates that these factors can be summarised into four major categories: individual features, healthy behaviours, social support, and environmental factors.

Individual features can include age, gender, health condition and education level (Gu et al., 2019). In terms of age, self-perceived ageing may lead to negative feelings and experiences relating to mental health, physical health and social wellbeing in older adults (Zhao et al., 2017). However, some studies have shown that there is no significant correlation between mental health and age (Deng et al., 2017). In regard to gender, the differences in physical changes during ageing between men and females also result in different mental health issues (Wang et al., 2021). Regarding health status, chronic illness and long-term medication are high-risk factors for depression (Zhao et al., 2017). Physical illness or dysfunction resulting from illness is closely associated with depression. It is also notable that deterioration of mental health can bring about physical symptoms that further affect quality of life (Liu et al., 2019). There is a positive correlation between education level and the mental health of older adults. Educated older adults can access information through various channels, such as reading books and newspapers or watching videos on their mobile phones. This can make life more enjoyable and help them to learn more about health (Du et al., 2018).

Healthy behaviours are related to the lifestyle habits of the elderly, and their importance cannot be overstated. Kim et al.'s research indicates that physical activity levels are closely related to mental health, and that regular physical activity can reduce the risk of depression (Kim et al., 2022), which aligns with the research results of Byeon. Recreational activities or visits to community green spaces can effectively alleviate the psychological stress experienced by those living alone (Yoshida et al., 2021).

Social support is a key factor in influencing the mental health of the elderly. Family support, in particular, plays a significant role in this, with good intergenerational relationships being shown to reduce negative emotions in older adults (Gao, 2021). Social support networks also affect the mental health of older adults. Having a stable and extensive social support network has a positive moderating effect on mental health (Gu et al., 2020), and both formal and informal social support are important. For instance, participating in community activities and receiving support and assistance from the local community can positively impact the

mental health of the elderly when they experience the loss of a spouse, while the support of friends can help them cope (Wang & Lin, 2022).

Environmental factors can also indirectly impact the mental health of older people. For example, Pasanen et al. found that larger residential green spaces lead to higher community satisfaction, and this effect is more pronounced in warmer southern climates (Pasanen et al., 2023). Yuan Miaoyu et al. also found through their research that the presence of a musty smell in the home can affect demand for community psychological counselling services among the elderly (Yuan et al., 2019). Furthermore, long-term exposure to microbial contamination can cause chronic pain and disease, thereby negatively affecting the mental health of the elderly (Ryu, et al., 2021).

Notably, studies on the factors influencing the mental health of older adults suggest that living alone may be associated with poorer psychological outcomes. For example, a study found that the prevalence of depression among the elderly living alone was 26.63%, which was higher than the 23.6% prevalence rate among the general elderly population in China (Zhang, Y. et al., 2023). The risk of mental health problems is higher among the elderly living alone due to the weakening of their health, economic status and social skills.

CHAPTER 03

The Research Methodologies

3.1 Research Path

To identify sustainable solutions for complex scenarios, systemic design takes a holistic approach to analysis. This gives the design discipline the opportunity to create open systems capable of self-growth based on local resources and environmental assets (Battistoni et al., 2023).

This study will apply a three-step systemic design methodology framework to define a community service model for older adults' mental health in Jing'an District, Shanghai.

First, in the initial stage of understanding the complexity of the issue, a combination of fieldwork and desk research was employed to gather extensive information and identify potential pain points and needs.

Field research involved conducting semi-structured interviews with the elderly population, community service providers, and stakeholders to understand their pain points, needs, and expectations. This provided viewpoint support for subsequent design research. The study uses tools such as the system map of service design and the stakeholder map to construct a complete cognitive framework of the existing service system. This framework is then used to refine and analyse the key touchpoints and service interaction modes in the service process. Finally, it is used to identify the problematic points of the current process.

In addition, interviews and research with relevant government organisations were conducted to establish an understanding of the existing mental health service system. This allowed the transmission of its key elements, such as material, financial and information flows, to be analysed, as well as the interaction between the service system and regional resources. This comprehensive approach allowed the complexity of the system to be grasped and the collaboration between its various submodules to be accurately understood.

In the desktop research section, the Holistic Diagnosis research methodology was applied to the system design to collect and evaluate regional resources in Jing'an District,

Shanghai. Data on population structure, environmental conditions, economic structure and cultural resources were collected from official channels such as government websites, report and bulletins. The focus was on identifying mental health services in the region.

A literature review was conducted to understand the current status of research in related fields at home and abroad, and to provide a theoretical basis and academic support for this study.

In the tackling challenges stage, this study will organise the systemic issues in the holistic diagnosis charts. These fragmented representations of system criticality and potential will be integrated into a comprehensive overview of the challenge. Each challenge can be viewed as an opportunity for the system to transition to a new, more favourable paradigm. By researching the challenges, multiple opportunities have been identified for each one. The challenges and opportunities will be analysed in a correlative manner using the complexity map tool. Through this synthesis methodology, a diverse range of stakeholders was brought together to create new systemic linkages that had previously been unimagined. Subsequently, the design opportunities' feasibility is evaluated using a selection matrix, and a set of high-potential design strategies with strong problem-solving capabilities is selected.

At the stage of designing the system, these strategies will be integrated into the original system, resulting in changes to existing inputs and outputs, the way elements flow and the creation of new connections.

Finally, to ensure the system's progressive transformation, ROADMAP will break down the implementation phase into multiple actionable steps, gradually integrating new opportunities with the existing system and clarifying the implementation stages through sequential planning.

Following these three stages, innovative and anticipatory solutions will be provided for the transformation of the complex system of community-based mental health services for older adults in China.

Figure 4. The research path of this program

3.2 Principle Of Systemic Design

The systemic design methodology, developed by the Systemic Design Lab at the Politecnico di Torino, is based on Luigi Bistagnino's design methodology, founder of the MSc in Systemic Design. This methodology is based on the principle that the output of one system becomes the input of another production chain. Over the past two decades, hundreds of projects have been developed to create a set of systems design methods and tools dedicated to exploring environmental, social, and economic sustainability.

When implementing system design, there are five key principles that need to be focused on (Lu, et al., 2023):

1. Outputs as Inputs: Unlike in the traditional linear production model, a system's outputs are not simply considered waste. Instead, they become the inputs for another production chain. This means that what one system outputs as 'waste' becomes a 'resource' for another system. This process creates continuous flows of matter, energy and information.

2. Relationship: The relationships between stakeholders are no longer isolated. Various forms of cooperation have been established between stakeholders, forming a more complex network. The system itself and the positive impacts it generates are the result of cooperation.

3. Autopoiesis: Autopoietic systems maintain and replicate themselves by creating their own components through co-evolution with other systems. The system is able to achieve sustainable operation through the flow of internal resources and the evolution of relationships without excessive reliance on external support.

4. Act Locally: Prioritise the local environment, local resources and local stakeholders, fully leverage its unique material, social, cultural, and economic resources, establish new connections within existing social resources, and uncover their usable value.

5. Humanity Centred Design: The project focuses on the human being in relation to their environmental, social, cultural and ethical context. Consider complex, interconnected issues from social and human perspectives, bearing in mind that they are part of a wider ecosystem.

3.3 Methods And Tools Of Service Design

Service design methods and tools can serve as a useful supplement. As a practice, service design typically involves designing systems and processes that aim to provide users with overall services. This interdisciplinary approach combines design, management, and process engineering skills (Stickdorn, & Schneider, 2012). Furthermore, the service design approach focuses on the interrelationships of all connected parts to understand their underlying structure. Consequently, designers must consider not only how to change the system to eliminate a particular problem, but also how all elements fit together as part of a larger system (Stickdorn et al., 2018).

The service design approach follows the same user-centred and holistic principles, and some of its methods and tools can be used to supplement the system design research process and improve understanding of complexity.

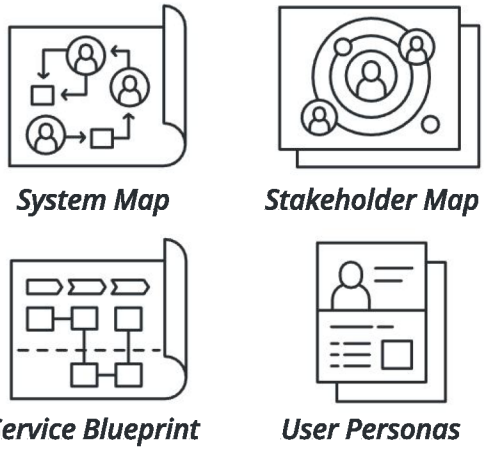


Figure 5. Some commonly used service design tools (Service Design Tools, n.d.)

For instance, a system map can visualise the various parties involved in a service system, as well as the connections between them and the flow of different items (e.g. materials, energy, information and finance) through the system. Stakeholder maps present the relationships between all project stakeholders in visual form and can clarify these relationships by delineating those between users, staff, collaborators and other stakeholders, as well as representing the interactions between these different roles (Service Design Tools, n.d.).

Using these service design tools can have a positive effect on understanding the complexity of the system.

CHAPTER 04

Understand The Complexity

4.1 Territory Analysis Of Jing'an District, Shanghai

4.1.1 Basic Information About Jing'an District

Jing'an District is located in the central urban area of Shanghai, China. It is bordered by six neighbouring districts. The district's name derives from the ancient Jing'an Temple, which is located within its borders. As of July 2024, the district comprises 13 subdistricts and one town: Jing'an Temple Subdistrict, Caojiadu Subdistrict, Jiangning Road Subdistrict, Shimen 2nd Road Subdistrict, West Nanjing Road Subdistrict, Tianmu West Road Subdistrict, North Station Subdistrict, Baoshan Road Subdistrict, Zhijiang West Road Subdistrict, Gonghexin Road Subdistrict, Daning Road

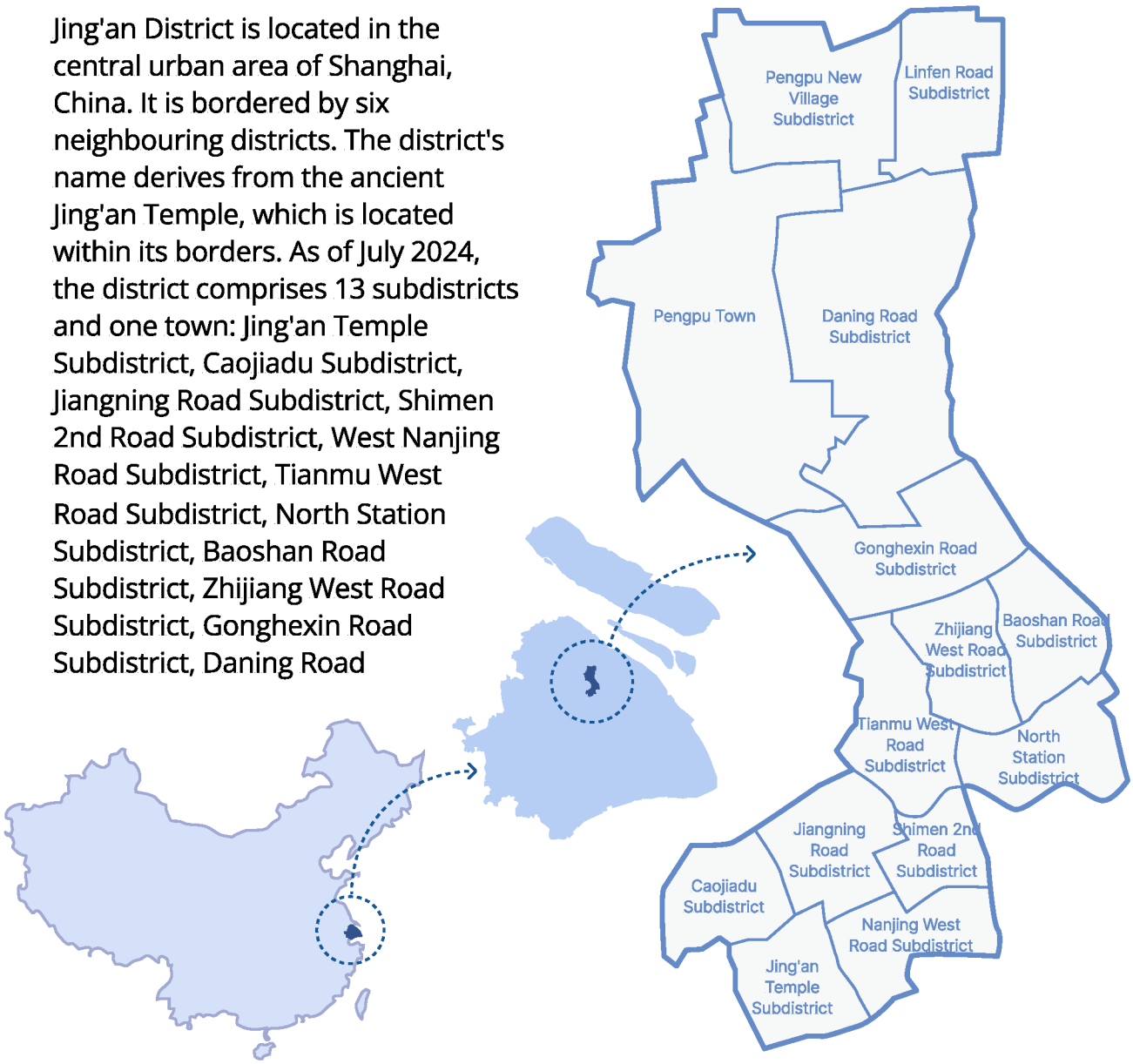


Figure 6. An overview of the regional map of Jing 'an District

Subdistrict, Pengpu New Village District and Linfen Road Subdistrict and Pengpu Town (People's Government of Jing'an District, 2024). The district comprises a total of 268 community committees.

Jing'an District covers an area of 36.88 square kilometres and is elongated from north to south. The southern part of the district, which is closer to Shanghai's central urban core, is more developed and crowded.

4.1.2 Demographic Information

According to the 2024 Jing'an District Statistical Bulletin on National Economic and Social Development, the district had a permanent population of 929,300 between late 2024 and early 2025. There were 332,900 registered households, with a total population of 900,800. Of the registered residents, 434,959 (around 48.2%) were male and 466,800 (around 51.8%) were female.

The chart shows the distribution of the registered population in Jing 'an District by age group (Figure 7).

Notably, while China's population aged 60 and over accounts for 22.0% (310.31 million) of the national total, Jing'an District's proportion of elderly residents (42.3%)

Street/Town	Community Committees
Pengpu New Village Subdistrict	*33*
Linfen Road Subdistrict	*20*
Pengpu Town	*36*
Daning Road Subdistrict	*24*
Gonghexin Road Subdistrict	*25*
Baoshan Road Subdistrict	*18*
Zhijiang West Road Subdistrict	*18*
Tianmu West Road Subdistrict	*12*
North Station Subdistrict	*14*
Jiangning Road Subdistrict	*16*
Shimen 2nd Road Subdistrict	*11*
Caojiadu Subdistrict	*14*
Nanjing West Road Subdistrict	*12*
Jingan Temple Subdistrict	*11*

Table 1. Sub-districts and the number of community committees in Jing'an District

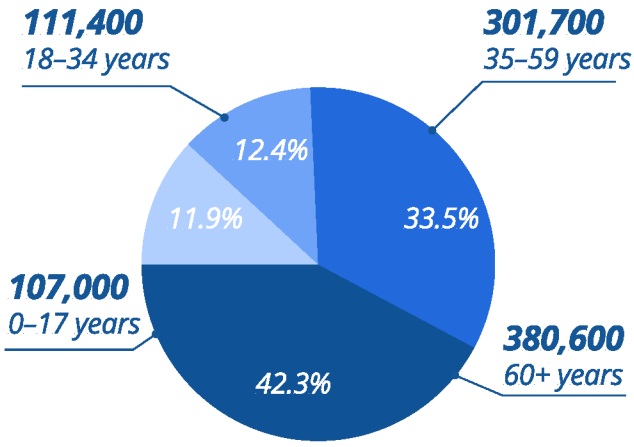


Figure 7. The distribution of the registered population in Jing 'an District by age group

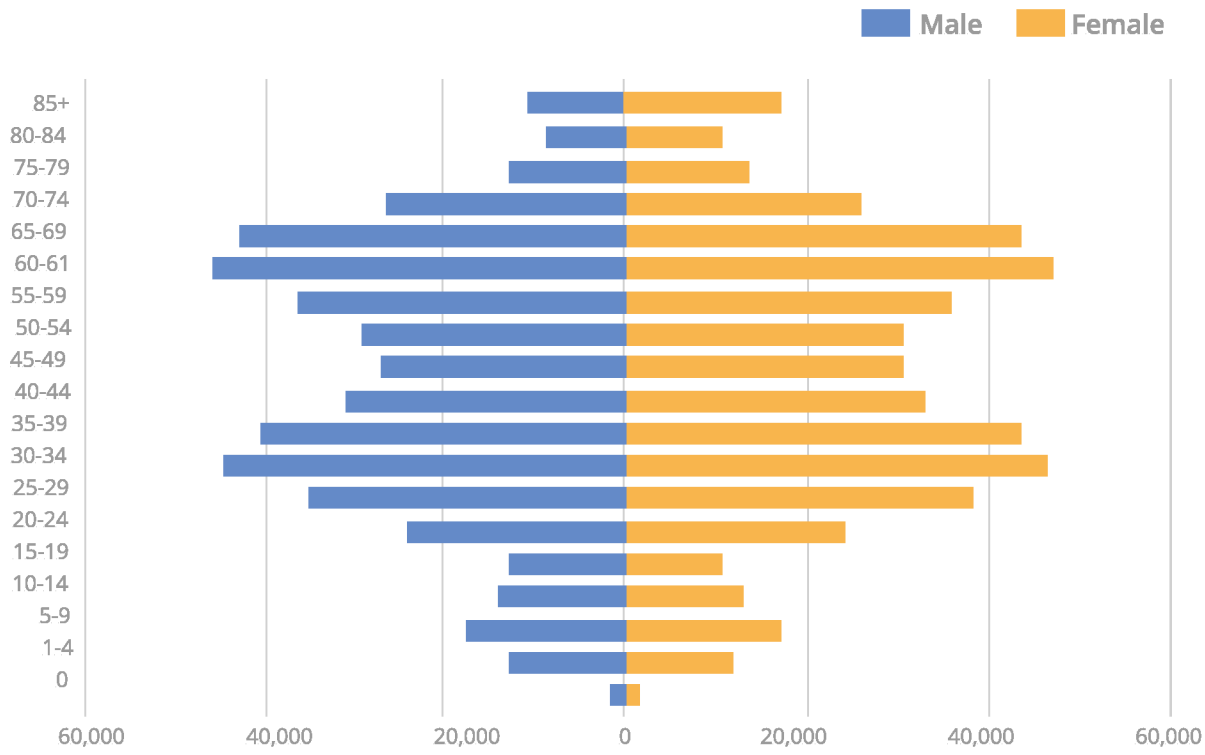


Figure 8. The distribution of the registered population in Jing 'an District by age group

significantly exceeds this figure.

Jing'an District also has a high population density. Unofficial estimates put this at around 25,833 people per square kilometre, which is far higher than Shanghai's average density of 3,912 people per square kilometre.

Statistics from 2023 indicate that the average life expectancy of registered residents in Jing'an District was 83.01 years. Specifically, male life expectancy was 80.39 years, while female life expectancy was 85.90 years (People's Government of Jing'an District, 2024).

Street/Town	Households	Registered Residents
Pengpu New Village	*47359*	*120338*
Linfen Road	*24394*	*61296*
Pengpu Town	*41248*	*113221*
Daning Road	*28878*	*85051*
Gonghexin Road	*29224*	*79981*
Baoshan Road	*21893*	*59228*
Zhijiang West Road	*22698*	*61584*
Tianmu West Road	*10514*	*28227*
North Station	*16582*	*38527*
Jiangning Road	*23662*	*67501*
Shimen 2nd Road	*12283*	*32913*
Caojiadu	*25347*	*73601*
Nanjing West Road	*16079*	*43646*
Jingan Temple	*12699*	*35778*

Table 2. Distribution of registered population in Jing'an District at the end of 2024

4.1.3 Economy

The economy of Shanghai's Jing'an District is primarily driven by the tertiary sector.

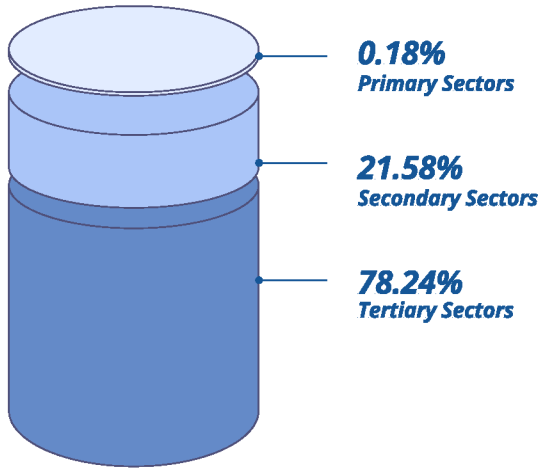


Figure 9.The economic proportion of District

According to statistics from 2024, the district recorded a gross domestic product (GDP) of €43.8 billion (336.993 billion yuan), marking a 3.7% increase from the previous year. The secondary sector contributed €1.47 billion (11.296 billion yuan), representing growth of 17.4%, while the tertiary sector accounted for €42.34 billion (325.697 billion yuan), reflecting an increase of 3.2%. Based on the permanent resident population, the GDP per capita reached €47,100 (362,600 yuan), reflecting an increase of €7,630 (58,700 yuan) compared to the previous year. In 2024, Shanghai's overall GDP stood at €701 billion (5.39 trillion yuan), with contributions from the primary, secondary and tertiary sectors of €1.3 billion (9.97 billion yuan), €151.3 billion (1.16 trillion yuan) and €548.5 billion (4.22 trillion yuan), respectively (People's Government of Jing'an District, 2024). The tertiary sector accounted for 78.2% of Shanghai's GDP, whereas in Jing'an District, this figure was even higher at 96.6%. Compared to developed economies such as the US, where services contribute around 80%, Jing'an exhibits a robust economic structure with a particularly strong service sector.

In 2024, 10,906 new market entities were registered in Jing'an District, representing a 2.0% decline compared to the previous year. Among these:

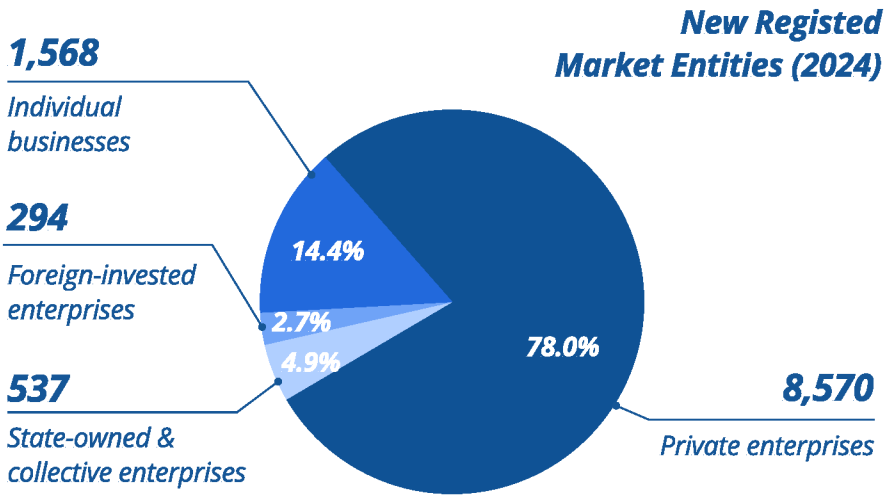


Figure 10. The proportion of various components in registered economic entities in 2024

4.1.4 Healthcare Services

Overall, Jing'an District has relatively abundant healthcare resources, though they are distributed unevenly, with the central and southern areas being the most concentrated and the north remaining comparatively underserved. As of January 2025, the district is hosting 401 healthcare institutions (People's Government of Jing'an District, 2025), including:

- 44 hospitals (including 11 tertiary hospitals with 13,200 healthcare professionals, 10 secondary hospitals with 3,400 healthcare professionals, and 23 other hospitals).
- 15 community health centres 66 community health service stations, staffed by 1,700 healthcare professionals.
- 66 community health service stations, staffed by 1,700 healthcare professionals.

According to China's medical institution classification system, tertiary hospitals represent the highest level of healthcare institution, with Grade 3A hospitals forming the top tier within this category.

By leveraging the district's renowned Grade 3A hospitals, including Huashan Hospital, Huadong Hospital, Shanghai Tenth People's Hospital, Shanghai First Maternity and Infant Hospital, and Shanghai Municipal Hospital of Traditional Chinese Medicine, Jing'an District is advancing the development of medical consortia. Medical consortia are

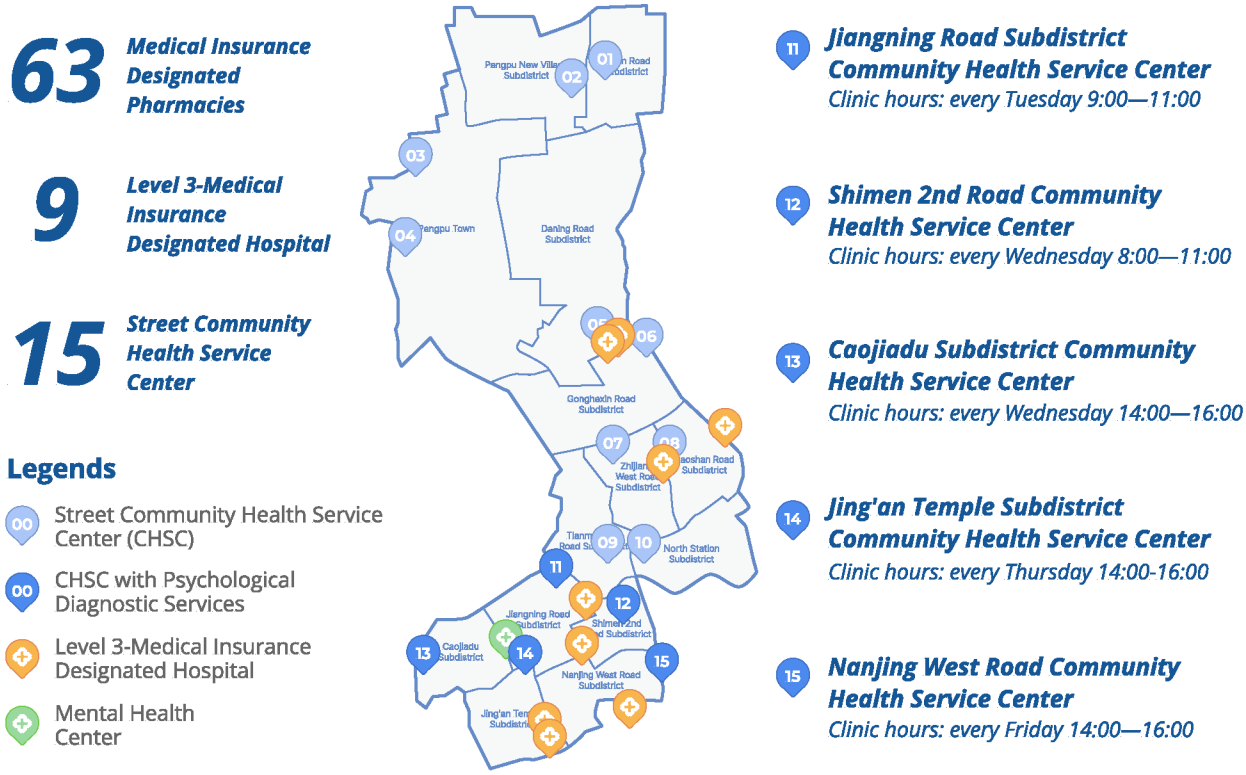


Figure 11. The distribution of medical resources in Jing 'an District

integrated networks formed within a defined region, typically comprising a core tertiary hospital with strong comprehensive capacity that collaborates with secondary hospitals and community health centres to establish a consortium that shares responsibilities and benefits.

In terms of mental health services, Jing'an District is working to provide access to high-quality psychiatric care. In May 2024, Shanghai established its first mental health alliance, the Jing'an Mental Health Alliance. The aim of the alliance is to optimise the allocation of medical resources through tiered diagnosis and treatment, as well as two-way referral systems, while building a sustainable framework for mental health services that integrates prevention, treatment, rehabilitation and public education.

Following the establishment of the Jing'an Mental Health Alliance, five community health centres have been authorised to open psychological clinics. Psychiatrists from district mental health centres now provide long-term consultations at these community clinics and are authorised to prescribe medication. Their prescriptions are valid in the same way as those issued by specialist doctors in hospitals (People's Government of Jing'an District, 2024).

In addition, residents of Jing'an District can access the Shanghai Psychological Assistance Hotline (962525). This hotline operates 24 hours a day, seven days a week. The hotline primarily provides psychological counselling and crisis intervention services. Established by the Shanghai Municipal Health Commission, the Municipal Education Commission and the Municipal Finance Bureau, it has replaced 17 district-level psychological support hotlines and employs over 300 professional counsellors to provide non-profit mental health services.

To enhance the social and psychological service system and improve standardisation of services, the hotline will establish standardised call handling studios and implement a uniform call management procedure. All operators will undergo systematic training and professional supervision.

The psychological assistance hotline will adopt a caller classification and tiered response mechanism. Based on the caller's primary concerns, mental state and insight, operators will promptly assess the level of their psychological crisis, estimate potential risks and implement appropriate intervention strategies (Shanghai Municipal Government, 2022).

4.1.5 Elderly Service

The Shanghai Basic Elderly Care Service Catalog (2025 Edition) outlines two main types of community-based services for seniors who stay at home. First, community services offer several programs. These programs include daycare services, rehabilitation aid rentals for low-income seniors, and meal delivery for elderly residents needing assistance. Second, home-

based elderly care services provide additional support. These services cover emergency rescue, visitation and care for seniors facing special challenges, home modifications for aging in place, and caregiver training for family members (Shanghai Municipal Bureau of Civil Affairs, 2025).

As of April 2025, Jing'an District had 436 facilities for elder care. These facilities included 118 places that help with meals, 219 activity centres for seniors, 23 centres that offer many different elder care services, and 22 nursing homes. The Report on Jing'an District's 2024 Implementation of National Economic and Social Development Plans and the Draft 2025 Plan states that elder care in the community improved in 2024. For example, daily meal deliveries reached 11,000 servings. Also, 1,140 homes of elderly people received smart water meters, and climbing help (like stairlifts) was given 11,182 times (People's Government of Jing'an District, 2024).

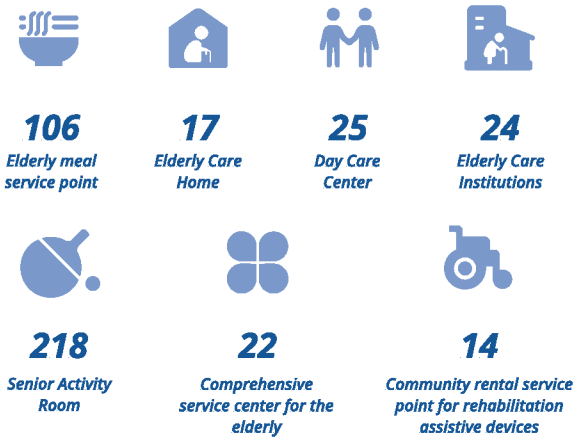


Figure 12. The elderly care service resources

Figure 13. The community canteen in Shanghai

Figure 14. The community canteen in Shanghai

4.1.6 Public Transportation

Jing'an District's southern area sits near downtown Shanghai, making public transport easy to access. Ten metro lines run through the district. These lines serve 29 metro stations. But 20 of these stations are in the southern part of the district. Only Line 1 goes through both the north and south areas. Meanwhile, Jing'an District is long from north to south

but narrow from east to west. Its well-developed bus network makes up for the uneven metro lines. Overall, public transportation in Jing'an is very convenient.

The Shanghai government also gives subsidies for transportation to elderly residents. The amount changes based on age. Seniors aged 65-69 get €9.74 each month. Those aged 70-79 receive €19.48. The 80-89 age group gets €23.38. People aged 90-99 receive €45.46. Seniors aged 100 or more get €77.93. (In China, one public transport ride usually costs between €0.25 and €1.)

4.1.7 Culture And Sports

According to the statistics of 2023, there are a total of 16 cinemas, 19 theaters, 1 district cultural centre, 25 community cultural activity centres, 2 district libraries, 14 street book stations, 1 cultural relic protection and management institution, and 8 museums in Jing'an District, Shanghai. There are 35 art performance venues in the entire district, with a total venue area of 154,000 square meters. Throughout the year, there are 2,356 art performances, attracting 1.3573 million audiences.

In terms of sports facilities, Jing'an District has 907,600 square metres of sports venues in total, equating to an average of 0.97 square metres per person.

As of January 2025, the district has 29

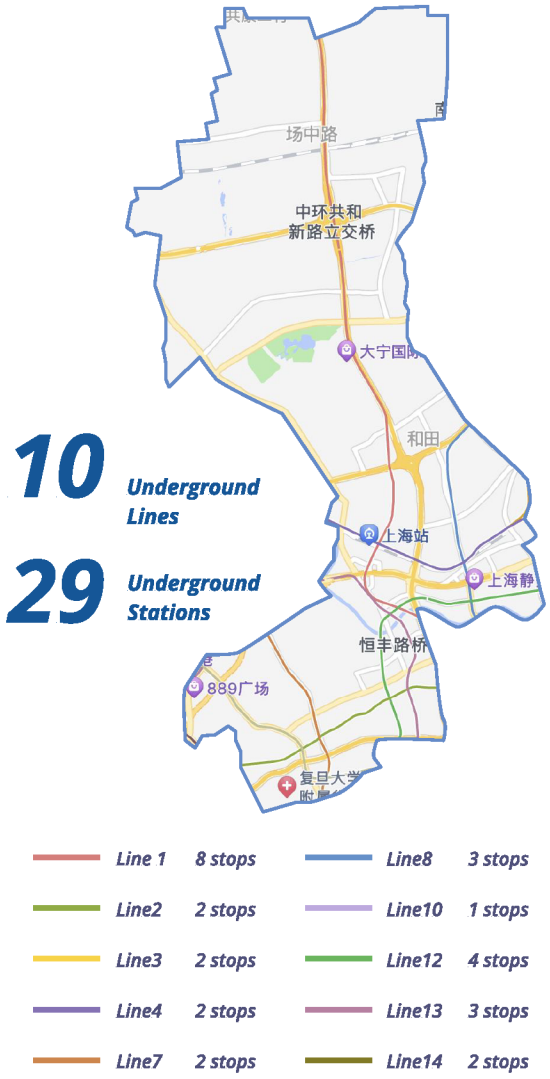


Figure 15. The subway route map of Jing 'an

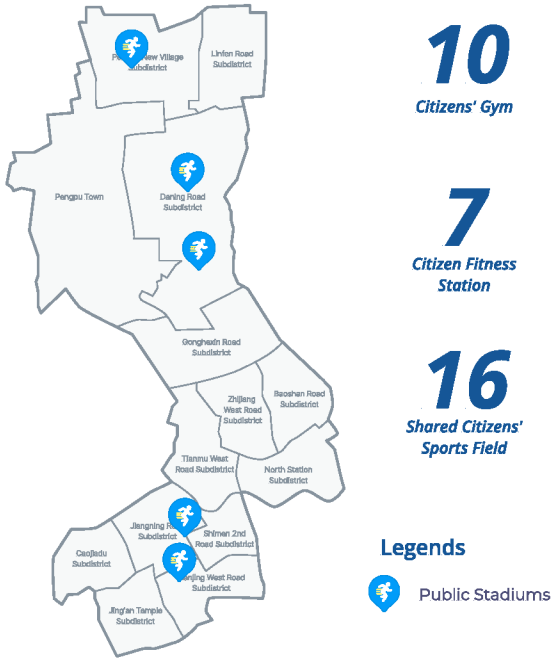


Figure 16. The distribution of sports facilities

citizens' sports fields, 7 citizens' gyms, 10 fitness stations, 43 fitness trails and 691 community fitness spots with 5,650 pieces of equipment. It also has 52 fitness rooms in buildings and 77 schools that open their sports fields to the public. The following public sports venues are also open to the public: Jing'an Sports Centre, Jing'an District Sports and Fitness Centre, Jing'an District Mass Fitness Centre (under construction), Jing'an District Gymnasium, Jing'an District Tennis Hall and Jing'an District Workers' Stadium (People's Government of Jing'an District, 2025).

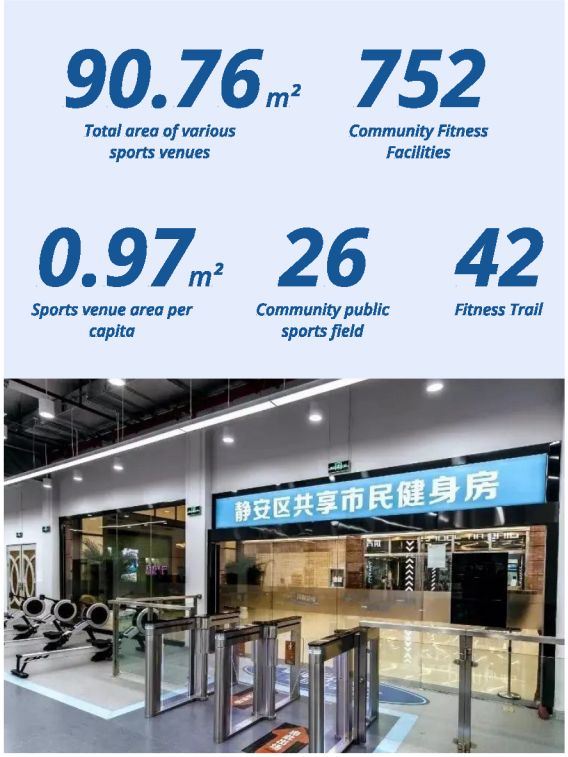


Figure 17. The date of public sports facilities in Jing 'an District

4.1.8 Green Land

In 2024, the quality of the ecological environment in Jing'an District remained stable. The percentage of days with an excellent or good ambient Air Quality Index (AQI) was 86.6%. The average PM2.5 concentration was 29 micrograms per cubic metre.

Jing'an District is also developing an urban park system, comprising comprehensive, specialised, community and pocket parks. This improves the layout of green spaces at all levels and enhances the ecological environment within the region. As of December 2024, the total green area of Jing'an District is 8.4655 million square meters, of which: The area of park green space is 3.4214 million square meters, and the affiliated green space of unit residential areas is 5.0441 million

Figure 18. The urban park in Jing 'an District

Figure 19. Baiyi Bridge Park

square meters. There are a total of 24 urban parks in the district, covering an area of 1.3978 million square meters. Among them, there are 5 comprehensive parks, 4 five-star parks, 15 pocket parks, 468,600 square meters of vertical greening, and 28.87 kilometers of greenways. The per capita public green space area is 3.64 square meters, and the green coverage rate is 25.31% (People's Government of Jing'an District, 2025).

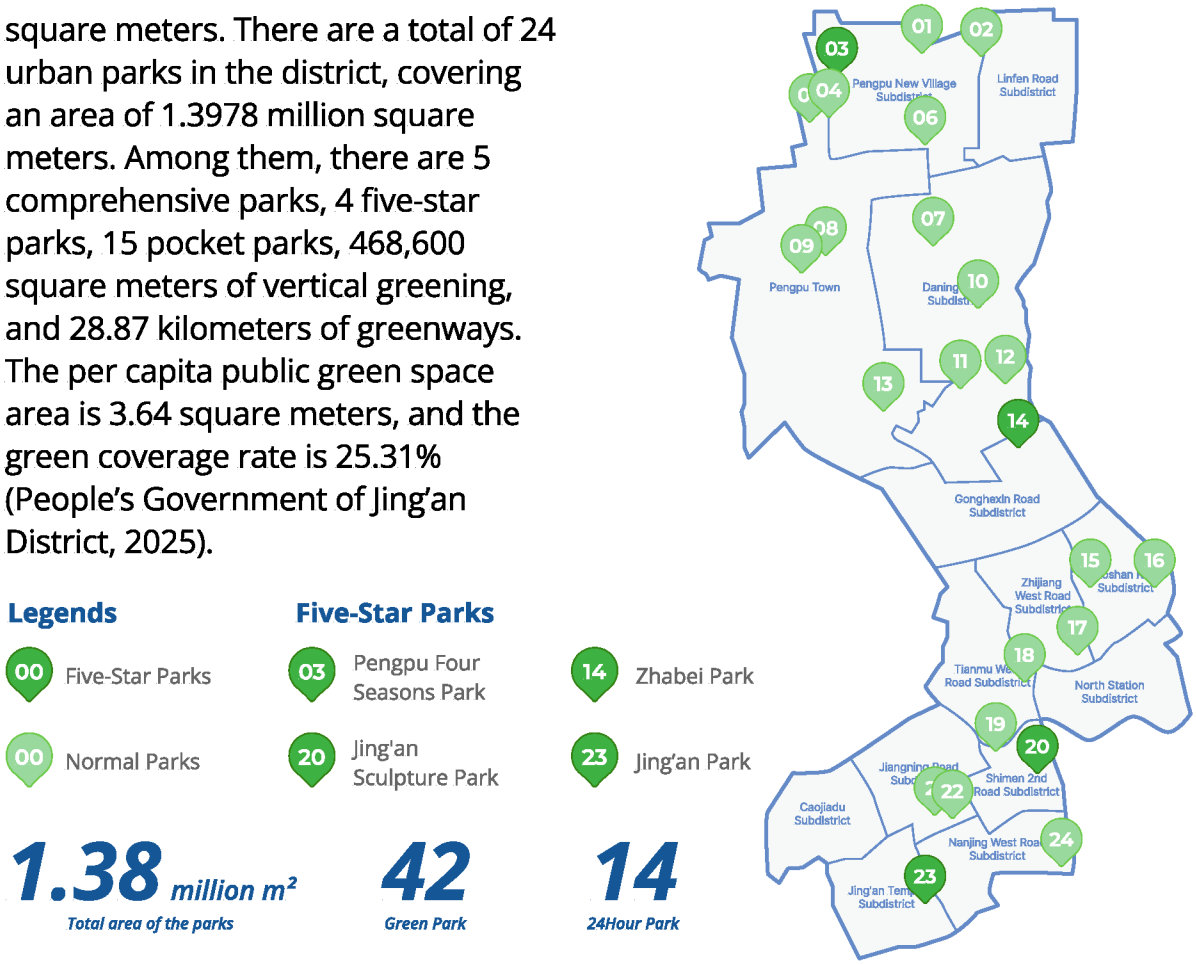


Figure 20. The distribution of urban parks in Jing 'an District

4.2 Analysis Of The Elderly Care Service System

Based on research in Jing'an District, this study found that community public services in China are managed under a government-led model in accordance with the current administrative organisational structure. Relevant government departments undertake core functions such as policy formulation, resource allocation and coordination, and the formulation of annual work plans. Mental health public services fall within the functional scope of the Health Commission, while community elderly care public services are closely related to the work of the government's civil affairs department.

In order to establish an understanding of the current construction status of the public service system for the mental health of the elderly in Jing 'an District, Shanghai, based on the functional division of different administrative departments, this study conducted semi-structured interviews with the staff of the Jing 'an District Health Commission and the

Civil Affairs Bureau respectively through online interviews. Key information was obtained through these interviews, such as the goals, contents and collaboration models of mental health services in the current regional medical and health service system.

The current service system is divided into three parts: the planning side of public services, which is composed of the District Health Commission, the sub-district office, the District Civil Affairs Bureau, the community health service centre and the neighbourhood committee; The community life service system is composed of the community committee, community volunteers, community canteens, and long-term care insurance caregivers. The primary health service system includes community health service centres, family doctors, community nurses, specialist doctors, general hospitals, and specialist hospitals.

On the planning side of public services, the District Health Commission and the District Civil Affairs Bureau jointly connect all

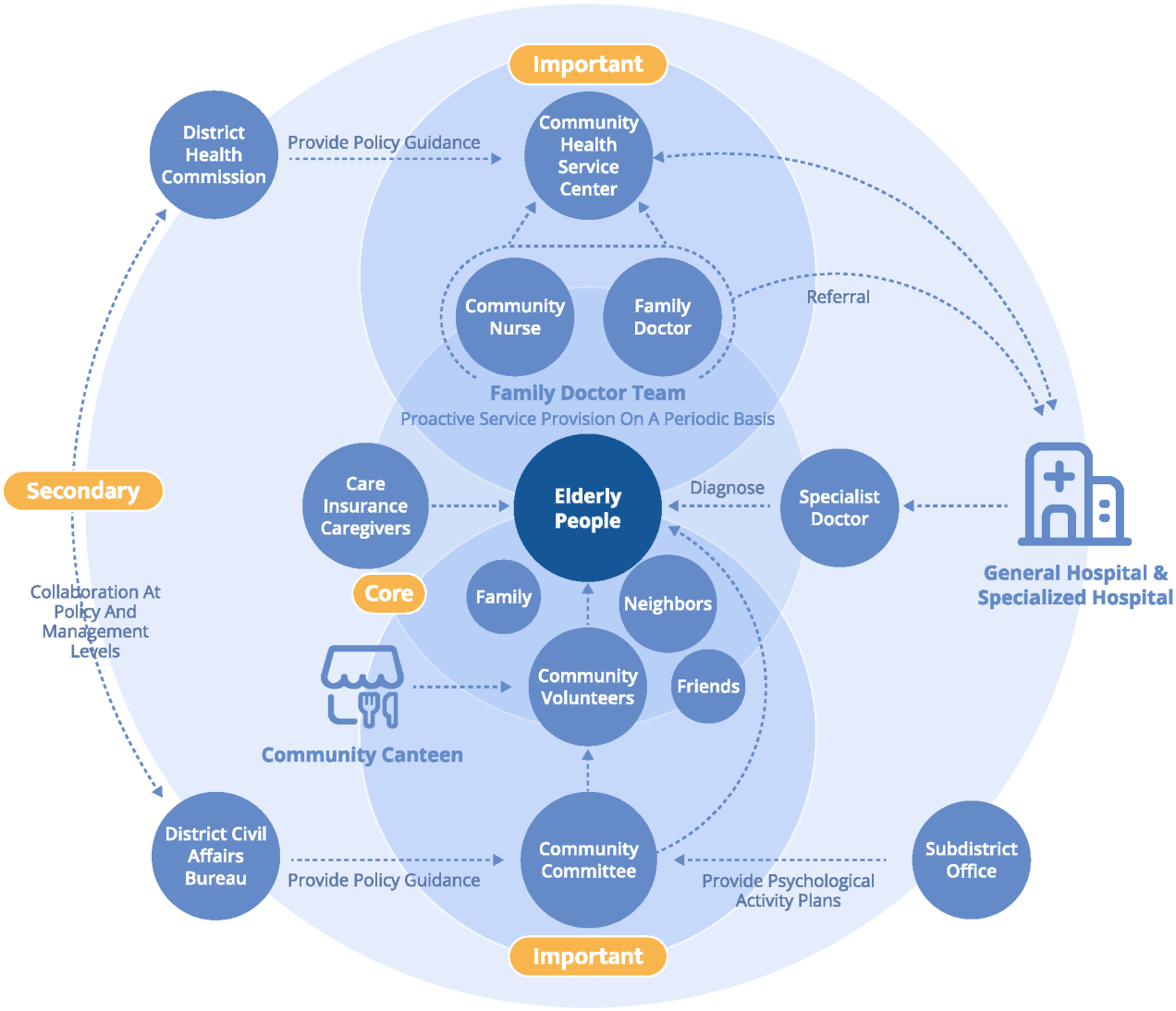


Figure 21. Stakeholder map of the elderly care service system in Jing 'an District

stakeholders, coordinate resources, and formulate policies. Sub-district offices assist the District Civil Affairs Bureau in issuing and implementing various elderly care services. Community health service centres implement the District Health Commission's health service policies. During the process, the Health Commission is responsible for assessing and supervising the work of the community health service centres. It also provides the implementation funds. There is an informal cooperative relationship between the community health service centre and the community committee. For example, the staff of the community committee sometimes accompany the elderly to see a doctor, and during the process, they will have cooperative contact with the staff of the community health service centre. Or when the community health service centre discovers an elderly person with abnormal health conditions, it will simultaneously inform the staff of the community committee of the information.

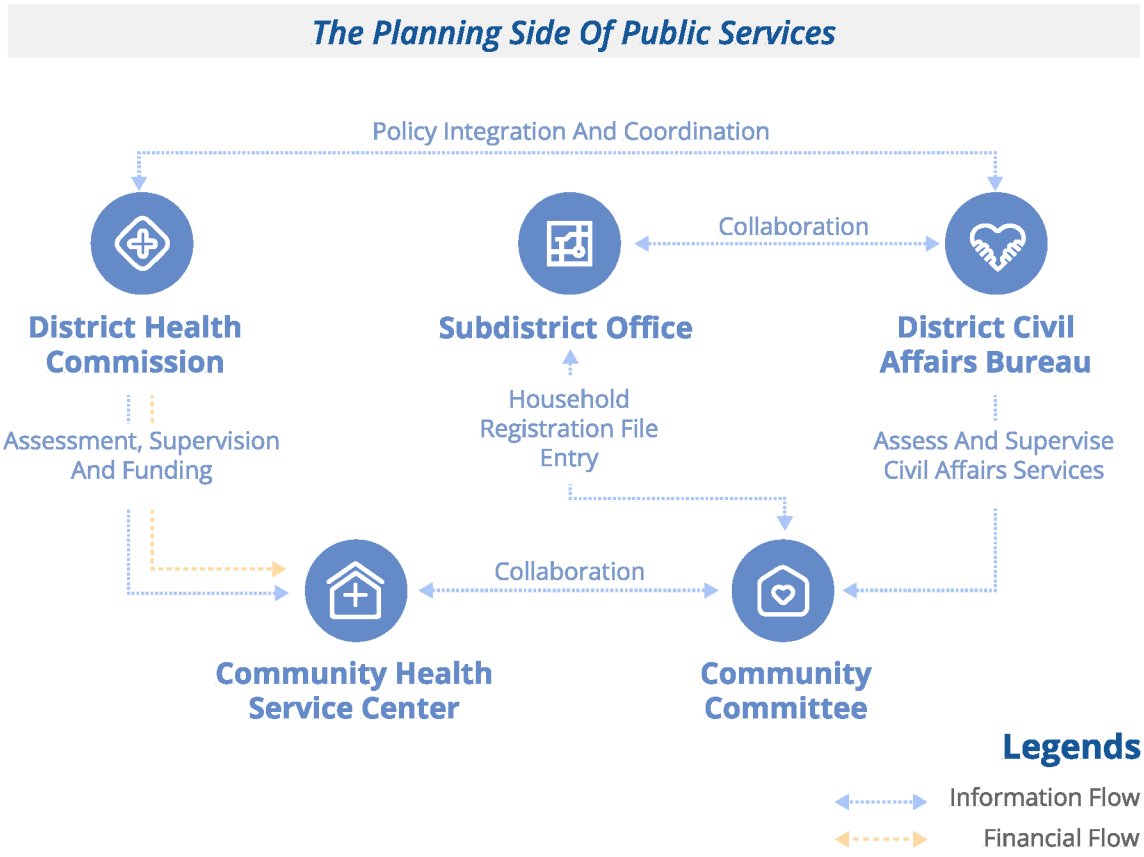


Figure 22. The system map of the planning side of public services

In the community life service system, the community committee covers all aspects of the elderly's community life. This includes daily communication and consolation, life services such as electrical appliance repair and answering smartphone-related questions, assisting with medical treatment and transportation, festival greetings and organising community activities. The community canteen is responsible for providing daily meals. Elderly people can go to the offline dining points to have meals by themselves. Elderly people with mobility issues can also ask the community canteen to send volunteers or staff to deliver meals to their doorsteps. Some elderly people who have applied for long-term care insurance will also have long-term care insurance caregivers periodically help them clean their living Spaces. To a certain extent, this can also allow elderly people who have been living at home for a long time to have some social connections and provide some psychological comfort to them.

The Community Life Service System

Figure 23. The system map of the Community life service system

In the primary health service system, family doctors will visit the elderly to screen for health problems and provide consultations. They will also follow up regularly based on the defined health level. The elderly can also consult their family doctors about health issues online by phonecall. Community nurses are assistants to family doctors. They help family doctors measure health indicators such as blood pressure and blood sugar during the consultation process, record the consultation information, and also provide daily medication dispensing and delivery services for the elderly. Patients can be referred by their family doctor to municipal general hospitals or specialised hospitals. Once their condition is under control, patients can be referred back to the community health service centre for subsequent treatment. Community health service centres offer outpatient services and medication dispensing services for the elderly. Some community health service centres that have connected with professional psychological resources can also provide psychological counseling services for the elderly in nearby communities. However, these services are not permanent. When the elderly require these services, they must make an appointment in advance.

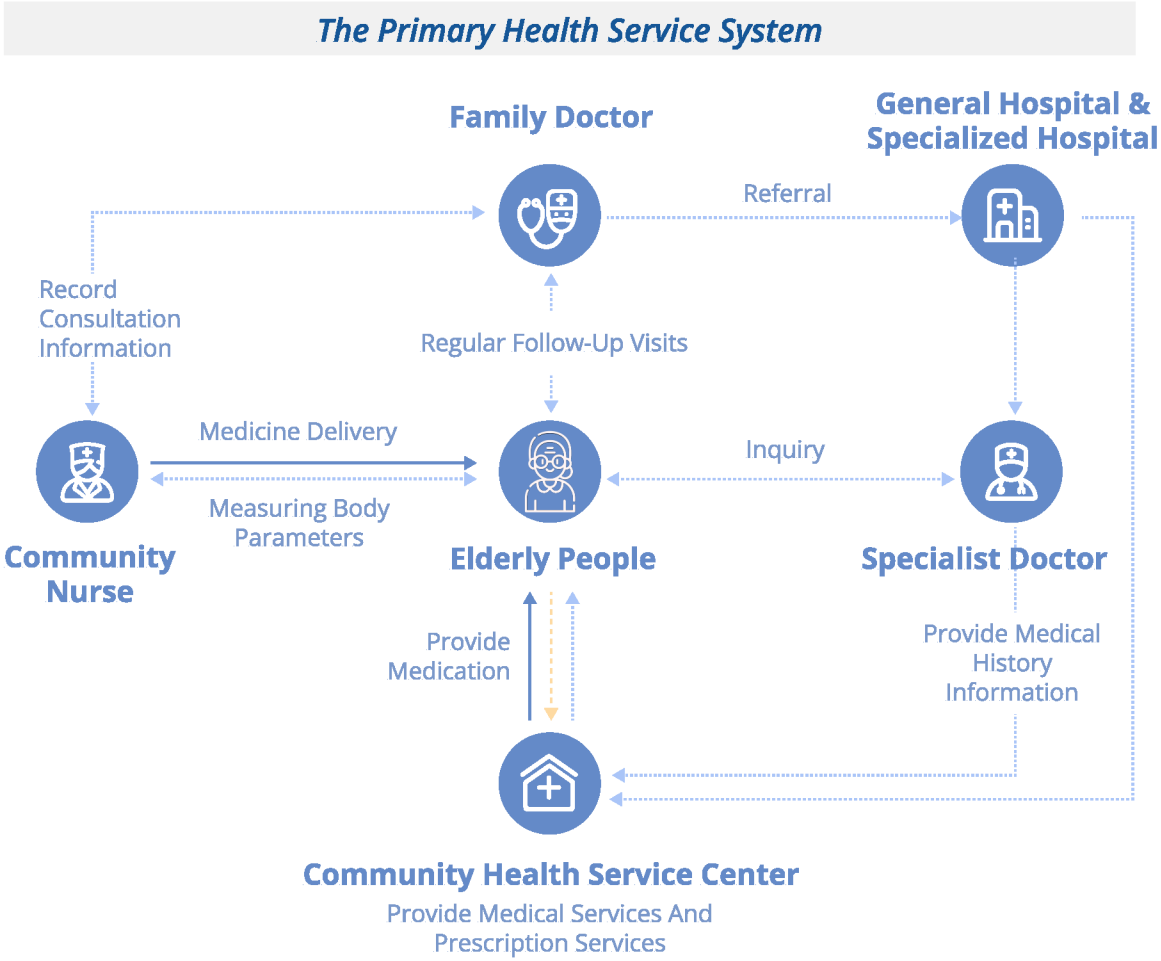


Figure 24. The system map of the primary health service system

4.3 Insights From The User Research

To supplement the users' perspective, this study conducted a field research in Jing'an District, Shanghai. Using the semi-structured interview method, face-to-face conversations were conducted with 15 elderly people living in different communities of Jing 'an District, attempting to identify their pain points and needs.

A total of 15 elderly people were invited to participate in interviews during the research process. This included three elderly people living alone, eight from empty-nest families and four living with their offspring. By age group, there are 4 people aged 60 to 70, 4 people aged 70 to 80, 6 people aged 80 to 90, and 1 person aged 90 or above.

The interview outline focuses on basic information, living habits, physical health and mental health.

The section on basic information includes issues such as residence status, whether or not a community health service contract has been signed, age, marital status and family composition.

The living habits section covers topics such as living arrangements, eating habits, exercise routines, hobbies and familiarity with local service providers. This reflects the factors influencing the signed, age, marital status and family composition.

The living habits section covers topics such as living arrangements, eating habits, exercise routines, hobbies and familiarity with local service providers. This reflects the factors influencing the physical and mental health of the elderly identified in previous studies. The aim is to generally gain an understanding of the comprehensive living habits of the interviewees.

The physical health section includes relevant information such as chronic diseases, sleep conditions, perception

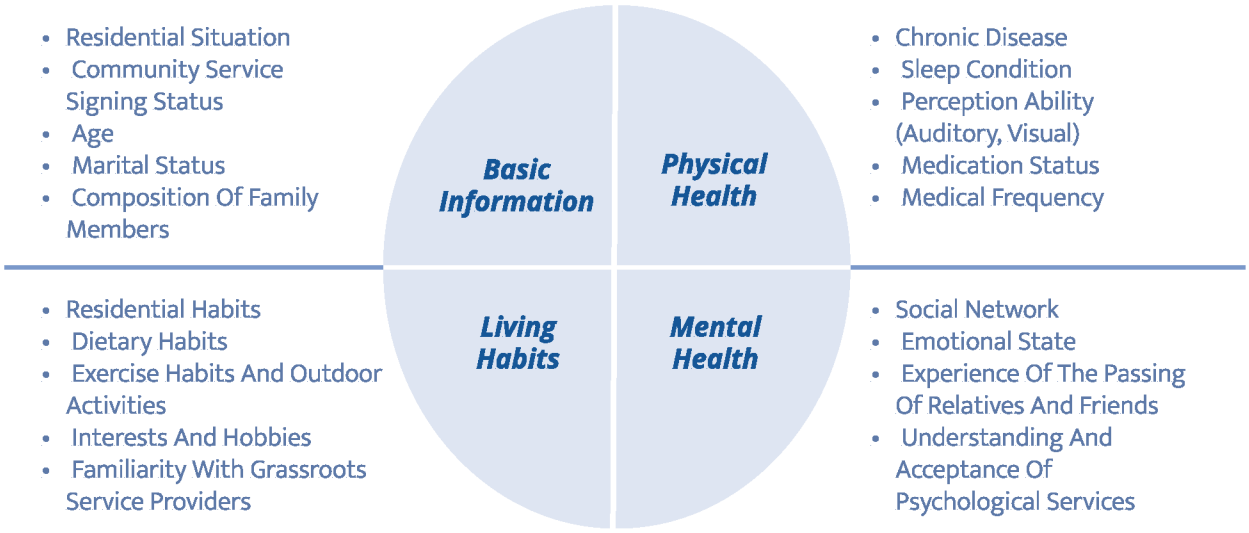


Figure 25. The main content of the user interview

No.	Residence Status	Gender	Age	Pre-Retirement Profession	Marital Status
F1	Living Alone	Female	65	-	Widowed
F2	With Children And Spouse	Female	66	-	Divorced
F3	With Spouse	Male	67	Worker	Married
F4	With Spouse	Male	69	Worker	Married
F5	With Spouse	Male	72	-	Married
F6	With Spouse	Female	75	-	Married
F7	With Spouse	Male	76	-	Remarried
F8	With Children And Spouse	Male	78	Manager	Married
F9	With Spouse	Male	83	Government Employee	Married
F10	With Spouse	Male	85	Office Worker	Married
F11	Living Alone	Female	85	Office Worker	Widowed
F12	With Spouse	Male	86	College Professor	Married
F13	With Children	Female	86	Worker	Widowed
F14	Living Alone	Female	88	Office Worker	Widowed
F15	With Children	Female	91	-	Widowed

Table 3. Basic Information About The Interviewees

abilities, medication usage, and frequency of medical visits, which is used to understand the physical health status of the elderly. The mental health section aims to understand the social network and emotional state of the elderly and to establish whether interviewees have experienced the death of a family member or friend in recent years, as well as to assess their understanding of and attitude towards community psychological services.

Each interviewee was interviewed for 15 to 20 minutes. The communication with the interviewee starts from a superficial level, starting from living habits, and after the interviewee builds up trust with the questioner, it progresses to health status and mental health, with basic information questions interspersed in the process to gradually improve the interviewee's comprehensive information.

After organizing the interview content, it can be found that the elderly living in the communities of Jing 'an District have some common characteristics:

(1) Elderly residents have a weak perception of community elderly care services and are unaware of many of them

60% of interviewees are unaware of the elderly care services currently

available in the community. Many elderly people have a very vague understanding of concepts such as community health service centres and family doctors. Especially for the elderly who live with their children, their awareness of community services is the weakest. This might be because their children have taken on the tasks of daily care, medical treatment and medicine dispensing in their lives, making it unnecessary for this group of elderly people to establish connections with community service personnel (interviewees F8, F15). In contrast, elderly people living alone, due to weak family support, need to rely on some services provided by the community in their daily lives. Therefore, they have the closest connection with community workers and are more trusting of grassroots service providers.

(2) The groups that community activities can serve are relatively fixed

The community committee holds various activities in the community to respect and care for the elderly and enrich their community life. And the staffs will promote and disseminate these activities within the community. However, as the living patterns and thinking patterns of the elderly in the community are relatively fixed, the elderly that each community activity can attract are often a relatively fixed group of people. Some elderly residents who often stay at home never participate in activities, while those who have joined in once often continue to do so. This means that the elderly people cared for by community workers are always the same people, while those with potential problems are even more difficult to detect.

(3) Even when under pressure or feeling down, the elderly generally suppress the expression of their emotional needs

In field research, the interviewees interviewed generally have the phenomenon of emotional expression disorder. This is mainly due to three reasons: excessive understanding in intergenerational relationships, solidified emotional expression patterns and cognitive biases in mental health.

In terms of intergenerational relationships, eight interviewees chose to remain silent for fear of 'causing trouble for their children'. Examples of this include "I would be criticised if I called my child during his meeting" (interviewee F14) and "My children are all very busy with work and I don't want to disturb them" (interviewee F6). This overly considerate mentality has given rise to a passive and evasive communication mode. 10 out of the 18 interviewees indicated that they did not share their emotions with others and tended to deal with any emotional distress by themselves.

In daily interactions with their

children, there has been a decline in the expression of positive emotions such as longing, care and affection. They seldom express their emotions through words but tend to adopt material care (such as preparing meals for their children) as an alternative strategy for emotional communication.

(4) The elderly generally show a limited social circle

Interview data shows that 80% of interviewee s' social circles are limited to their local community, with most interactions taking place with neighbours. Only three interviewees maintained regular contact with old friends, indicating limited efforts in relationship maintenance. The majority of interviewees had not established new social relationships in recent years, and the people they interacted with were generally of the same age group.

Such social phenomena may be related to living patterns. If it is an empty-nest family where the couple lives together, their social relationships will be more limited. Due to the existence of a stable partnership, the daily activities of these interviewees are all carried out in the form of couple companionship (such as shopping together, taking walks), while the elderly without a partner show a stronger need for active social interaction. he researches also found that limitations to social networks intensify with age. On the one hand, as interviewees grow older, their friends from the past may lose their independence due to illness or die for various reasons, resulting in a constant decrease in the size of their social networks (F11: 'Old friends either die or can no longer walk').

On the other hand, as the elderly's physical functions decline, they are less willing to expand their social circle (F9: 'At this age, it's better to live alone. I have no energy for socialising anymore ').

(5) The acceptance of electronic products by the elderly is higher than expected

The acceptance of electronic products by the interviewees exceeded expectations. Among them, 67% had mastered basic skills such as electronic payments, instant messaging, registration and consultation, and information enquiries. This might be because the overall educational level of the interviewees is relatively good. 80% of the users can have the ability to listen, speak, read and write in Mandarin, and the professional experience of some of the interviewees has also laid a foundation for their technical adaptability.

Additionally, interviews with community workers revealed that some communities have organised training courses on smart devices, which have been enthusiastically received by the elderly, effectively enhancing their practical smartphone skills. Some interviewees indicated

that physiological limitations still constitute usage disorders, mainly due to visual limitations. For instance, interviewee F7 stated, "I have presbyopia and feel dizzy after looking at the screen for a long time."

In conclusion, in addition to the common characteristics of the elderly in the community, the research found that the elderly in the special living state of "living alone" have some differentiated needs. For example: The life trajectory is more fixed and simple; Have a stronger desire for communication and exchange.

CHAPTER 05

Challenges And Opportunities Of The System

In this study, through the analysis of the system and the holistic diagnosis of the field, combined with the pain points and demand analysis obtained from user research, a large number of fragmented viewpoints on challenge can be obtained, including criticalities and potentials. Criticality represents existing problems in the system, such as contradictions in system processes, frameworks, resources or user research. These issues usually have a negative impact and require human adjustments and interventions to eliminate them. Potential represents the system's improvement potential. Developing this potential can enhance the system's operational efficiency or improve the rationality of resource allocation.

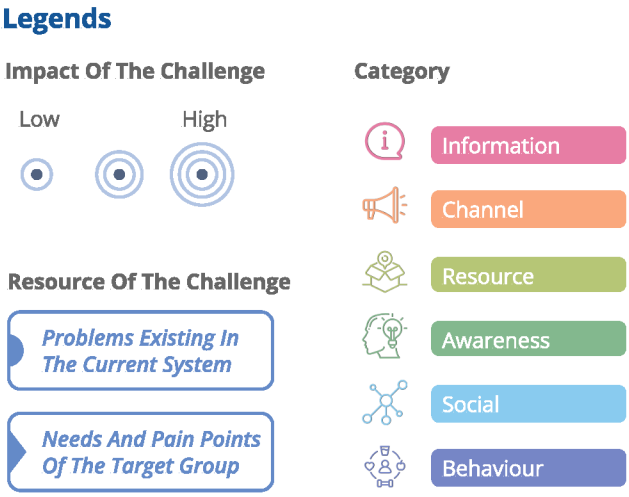
A total of 46 opinion statements were extracted from the analysis tools. These opinions were then compared individually. After removing those with repetitive or highly similar content, 24 opinion descriptions about challenges were retained, including 11 about existing system problems and 13 about target group needs. Eliminating repetitions ensures that each viewpoint is independent and representative.

These screened challenge statements can be divided into two categories: 'Problems existing in the current system' and 'needs and pain points of the target group'. The aim of this step is to distinguish the sources of the problems and clarify whether they are process, resource or architectural issues of the service system itself or whether they reflect the actual needs of the elderly in the community. These challenges are also classified into six types based on their content: information, channel, resource, awareness, social and behaviour. 'Information' refers to problems caused by a lack of information or poor transmission of information. 'Channels' refers to how easily roles within a system can reach from one point to another. 'Resources' refers to the possession and utilisation rate of local resources, and so on. 'Awareness' is mainly related to the user's cognition, reflected in their understanding of relevant concepts

and their ability to predict potential risks. 'Social' refers to challenges related to interpersonal relationships. 'Behaviour' refers to performance and habits in daily life.

These challenges are also potentially connected. Resolving one challenge may improve another. In the next stage, attention could be given to how these challenges interact to increase the solution's impact. Secondly, some challenges have causal relationships with the sequence of steps in the implementation of the plan. Intervening in certain challenges that can impact others in the medium and short term can bring about rapid systemic improvement.

The diagram below shows the challenges and their relationships.



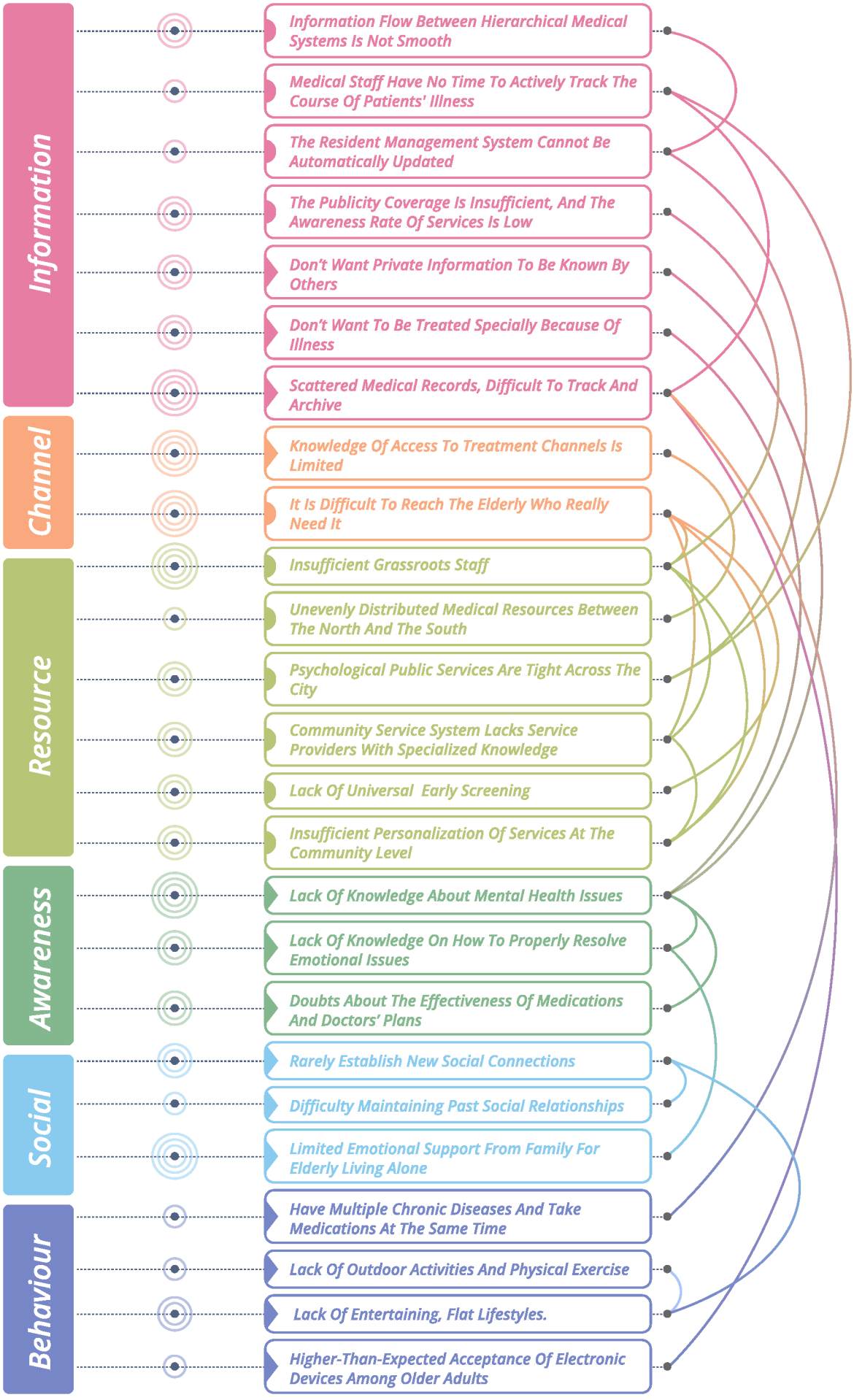


Figure 26. Understand the challenges of the system and the relationships among them

5.1 The Challenges

(1) Information Flow Between Hierarchical Medical Systems Is Not Smooth

Category: Information
Problem Drives form: Current System

China's medical system currently implements a hierarchical medical treatment system, which includes primary care at the grassroots level, two-way referral, separate treatment for acute and chronic diseases, and coordinated efforts between upper and lower levels.

The initial diagnosis at the grassroots level adheres to the principle of voluntary participation by the public. Through policy guidance, patients with common, frequently occurring diseases are encouraged to seek treatment at grassroots medical and health institutions first. Two-way referral is achieved by improving referral procedures, focusing on referring patients in the chronic and recovery stages from tertiary hospitals to lower-level institutions, thus gradually realising orderly referrals between institutions of different levels and categories. The separate treatment of acute and chronic diseases is achieved by improving the service system for subacute and chronic diseases, and transferring patients who have passed the acute stage from tertiary hospitals to lower-level medical institutions. Top-down linkage involves establishing a division of labour and cooperation mechanism between medical institutions to promote the flow of high-quality medical resources from higher-level institutions to lower-level ones (National Health and Family Planning Commission of China, 2015).

The advantages of the hierarchical medical treatment system are that it can facilitate the public's access to medical care, optimise resource allocation and save medical expenses. Due to China's large population, medical resources are relatively scarce. The establishment of a hierarchical medical treatment system can shift the focus of medical and health work downward and towards community health service centres, enabling residents to receive medical treatment locally (Xinhua News Agency, 2024).

However, after research, it can be found that in the current medical system, if residents need to be referred between medical institutions, they often encounter the situation where the data of the two medical institutions are not connected. Residents must prepare their own medical records for the hospital to which they are transferred, and doctors must also re-inquire about their conditions. If elderly residents need to be referred during the treatment of mental illness, the attending doctor needs to track the past course of the disease and past medical records. But these records are usually not transmitted directly

through the hospital system. Poor circulation of information and data leads to discontinuity in the treatment experience. Elderly patients need to rebuild trust with doctors and reveal their circumstances to them again.

Jing'an District in Shanghai is currently developing the 'Healthy Jing'an' full-process digital health application platform. The purpose of this platform is also to solve the pain point that residents need to register multiple wechat official accounts of different hospitals or download different apps when seeking medical treatment at different hospitals (People's Government of Jing'an District, 2024), and to attempt to establish a "health portrait" system for residents (People's Government of Jing'an District, 2025). The system is still in the development and pilot stage and has not yet been widely popularized among residents.

(2) Medical Staff Have No Time To Actively Track The Course Of Patients' Illness

Category: Information
Problem Drives form: Current System

In an interview, a psychiatrist from the Shimen 2nd Road Sub-district Community Health Service Centre mentioned that, in their daily work, medical staff do not have time to proactively track patients' illness progress, even though they know they should do so. Due to the shortage of medical staff in China, particularly outpatient doctors who have to deal with a large number of patients every day, they are unable to do anything other than face-to-face consultations. Currently, the continuation of treatment depends on the patient's initiative, and the connection between doctors and patients is weak.

> *"Doctors don't have the time or energy to manage all their patients fully. For example, if a doctor and a patient arrange a follow-up appointment in two weeks' time, but the patient doesn't show up, the doctor won't take the initiative to contact them. Ultimately, treatment also depends on the patient taking the initiative."*

However, when it comes to mental health treatment, the relationship between patients and psychiatrists is the cornerstone of effective care. Regular follow-ups can help to strengthen this connection. Through follow-ups, psychiatrists can assess the effectiveness of drugs. If side effects occur or the treatment is ineffective, they can adjust the dosage or change the medication promptly. Building a trusting relationship with doctors can encourage open and honest communication.

(3) The Resident Management System Cannot Be Automatically Updated

Category: Information
Problem Drives form: Current System

The current Community Committee Electronic Integrated Management System used by community committees has not intercommunicated data with other

systems. Consequently, the community committee's staff still need to manually register changes to residents' information in their daily work. During on-site visits and research, the community committee staff reported that updating the real-time status of each resident was impossible in practice. In a community under the jurisdiction of a community committee, there are over a hundred elderly residents, and in larger communities, there can even be 1,000 to 2,000 elderly people. But the team of the community committee usually only has 10 people. It is very difficult to pay attention to the changes in the lives of every resident. The collection of residents' information is mainly accomplished through regular visits and feedback from neighbors.

(4) The Publicity Coverage Is Insufficient, And The Awareness Rate Of Services Is Low

Category: Information
Problem Drives form: Current System

After field research, this study found that the community committee currently holds some community activities specifically for the elderly in the community from time to time.

The aim is to enrich the lives of the elderly and increase their social activity, thereby enhancing their sense of happiness. However, these activities were not widely publicised. During visits to elderly people, all 15 interviewees said they had never participated in community activities, and 9 interviewees said they had never heard about them.

This low level of awareness is also related to the current lack of publicity channels in the community. The community committee's activities and publicity for the elderly mainly rely on oral communication and WeChat group communication. The former is inefficient and only reaches a limited audience, while the WeChat group is not a commonly used medium for elderly residents to access information.

(5) Don't Want Private Information To Be Known By Others

Category: Information
Problem Drives form: User Needs

From the perspective of users, among the elderly group, there is still prejudice against "mental health issues", which is a topic that people avoid discussing. Some elderly people even associate mental health issues with brain problems, which is a very negative evaluation in the Chinese context and has a certain insulting connotation. Because of such prejudice, when the elderly realize that they may have psychological problems, they do not want the people around them to know. They will be very worried about the negative evaluations from neighbors and friends, and also be concerned that it will affect their social relationships.

However, if the elderly want to seek mental health services through the community, they have to make appointments through community committee workers or be referred by family doctors. This makes them very worried that their medical treatment behaviour will be disclosed to others. Even though community workers are required to keep residents' personal information confidential, such a sense of distrust still exists.

(6) Don't Want To Be Treated Specially Because Of Illness

Category: Information
Problem Drives form: User Needs

In the contact with the elderly, this study found that some elderly people with difficulties in life, although they want to obtain convenience and help through the community, do not wish to be treated specially. For instance, in terms of the management of elderly people living alone, the community dispatches building managers to visit them every day to confirm their daily living conditions, preventing them from getting into danger when they are alone at home without being noticed. Additionally, some communities are implementing the 'Old Partner' programme. This project organises young, healthy elderly people to form support pairs with older people through an peer support model, providing services including mental support and daily care.

However, some elderly people in the community do not want to receive such 'special treatment'. They feel that it is overly caring and it hurts their self-esteem.

(7) Scattered Medical Records, Difficult To Track And Archive

Category: Information
Problem Drives form: User Needs

From the users' perspective, they need to re-register their personal accounts and files each time they visit a medical institution. For example, when an elderly person was treated at Hospital A and a CT scan was performed, an image diagnosis report was obtained. However, the doctors at Hospital A were not experienced in treating related diseases, so they recommended that the patient visit Hospital B, where they found that the online reporting systems of the two hospitals were not interconnected. The doctors at Hospital B might ask the patient to undergo another CT scan. This leads to a waste of resources and causes medical records to become scattered. This is especially problematic since many hospitals have adopted online systems, making information collection more difficult for the elderly. They struggle to collect these records and do not know how to access previous records at subsequent visits.

(8) Knowledge Of Access To Treatment Channels Is Limited

Category: Channel
Problem Drives form: Current System

During the study, it was found that the available channels for seeking medical treatment for elderly residents in Jing'an District are very limited. First of all, due to their insufficient mastery of digital platforms and inadequate understanding of the channels for seeking help for mental health issues, when they feel unwell, they usually only think of the hospital at the first moment. Secondly, there is insufficient understanding of the services currently provided by the community. It is not known that the functions of family doctors can cover the handling of some psychological problems, nor is it known that some community health service centres have already set up mental health-related clinics. They also lack sufficient knowledge of conventional intervention methods for mental health issues. Methods such as psychological counselling, medication and cognitive behavioural therapy can all help to restore mental health. However, the elderly tend to view medication as a form of treatment and psychological counselling as merely "ordinary chatting".

(9) It Is Difficult To Reach The Elderly Who Really Need It

Category: Channel
Problem Drives form: Current System

In communication with community workers and elderly residents in the community, the interviewees all pointed out a problem - those elderly people with mental health risks are actually very difficult to come into contact with in daily life.

> *"I might not see her step outside even once a month. Even when I greet her, she refuses to respond."*

For instance, during an on-site visit to Jing'an District, we learned about the situation of a community resident: She is a widowed elderly person living alone. Her children have a poor relationship with her, and her financial situation is difficult. However, she likes to lock herself in her room, never communicates with others and does not participate in community activities. The community committee staff knew there was a high risk in her situation, but she was reluctant to engage with them. If a neighbour tries to show concern, she will ignore them.

Facing such elderly people who actively want to hide, it has brought great obstacles to the intervention work of the community. Since it is difficult to come into contact with this type of elderly people in daily work, it is possible that by the time community workers discover them, their problems have already

developed seriously, such as suicidal tendencies or certain compulsive actions that have affected the lives of other residents.

(10) Insufficient Grassroots Staff

Category: Resource
Problem Drives form: Current System

During the interviews, all the community workers reported a shortage of personnel in the grassroots work teams, despite coming from different community committees and being responsible for different job functions.

Consider the role of the residents' committee, for example. The residents' committee organises and conducts community activities, mediates civil disputes, assists in maintaining social security, carries out convenient and beneficial community service activities for the people, and reflects the opinions, demands and suggestions of the residents to the people's government. As well as paying attention to the elderly in the community, the community committee is responsible for all residents living in the community. A community committee usually has jurisdiction over 1,000 people, and in large communities, this figure can reach 2,000 to 3,000. On average, a community committee team does not exceed 10 people. Such a small team is unable to handle such complex work, and problems are almost inevitably not dealt with in a timely manner.

(11) Unevenly Distributed Medical Resources Between The North And The South

Category: Resource
Problem Drives form: Current System

Through field research, it can be found that Jing 'an District is long and narrow from north to south. The main medical and health resources are concentrated in the south of the district, close to the centre of Shanghai. The treatment resources for mental health, including the five community health service centres piloting the establishment of psychological clinics, are all located here. Residents living in the north have fewer options when seeking medical treatment.

(12) Psychological Public Services Are Tight Across The City

Category: Resource
Problem Drives form: Current System

In terms of public services for mental health, there is a problem of resource shortage throughout Shanghai.

According to feedback from family doctors, there are two main reasons for this: Firstly, public service providers are not well rewarded, lacking a reasonable salary and incentive mechanism. This results in doctors lacking a sense of achievement and enthusiasm for their work, causing many talented individuals to seek employment in private institutions offering higher incomes. Secondly, implementing

mental health treatment requires additional professional qualifications. For instance, currently, all family doctors in the community have the qualifications of general practitioners. If it is necessary to add mental health services, one needs to make extra use of off-duty time to study and take exams. Only after passing the assessment can they obtain the necessary qualifications to provide these mental health services. Furthermore, professional psychologists also require face-to-face consultation experience to develop their skills. However, medical staff working in the community lack such case resources, and therefore it is difficult for them to improve their professional skills.

(13) Community Service System Lacks Service Providers With Specialised Knowledge

Category: Resource
Problem Drives form: Current System

At present, the community committee mainly undertakes the work of interacting with the elderly. Due to the shortage of staff in the community committee, some of the work will be completed by community volunteers. For example, in the building coordinator system, coordinators are typically residents, with no subordinate relationship to the community committee.

Generally, it is some elderly residents who are enthusiastic, in good health and more recognised by the residents. They serve as a bridge between residents and the community committee, enabling more refined management and a better, faster understanding of the needs of the community members. However, these volunteers have not received any professional training for the role. When dealing with residents, they still rely more on personal experience. If they are faced with elderly people with mental health risks, the volunteers may not be able to choose appropriate handling methods and show excessive enthusiasm or excessive concern.

(14) Lack Of Universal Early Screening

Category: Resource
Problem Drives form: Current System

During the research, the author discovered that the community had not yet implemented universal early mental health screening for the elderly.

The screening services provided by the community are still carried out in the form of "voluntary screening" in the community, with psychiatrists dispatched by the affiliated hospitals providing "free diagnosis and treatment" in the community. However, as previously mentioned, elderly individuals with genuine mental health risks are often inactive within the community and do not take the initiative to participate in such activities. Therefore, non-mandatory screening does not have much substantive effect on the discovery

and management of problems. Instead, they mainly serve to popularise knowledge.

Furthermore, mental health screening relies on professional scales containing a large amount of text and questions. It is difficult for the elderly to complete them independently. With the help of professionals, however, more valuable results can be obtained.

(15) Insufficient Personalisation Of Services At The Community Level

Category: Resource
Problem Drives form: Current System

Due to the shortage of community service providers, it is difficult to respond appropriately to the individual needs of elderly residents. For example, comfort services for elderly people living alone typically involve visiting them at home during festivals and holidays. While these services can provide emotional support to lonely elderly people, they cannot always match the services provided to the needs of the users. Some elderly people living alone, for example, have a rich social life and do not need service staff to worry about them at all. It is difficult to provide non-targeted services with substantive and effective assistance to residents.

(16) Lack Of Knowledge About Mental Health Issues

Category: Awareness
Problem Drives form: User Needs

After on-site research in the community and interviews with public service workers in the Jing'an District of Shanghai, the author found that the elderly generally lack an understanding of mental health issues. They focus more on physical health, ignoring the possible impact of mental health issues on life.

For instance, the elderly tend to mistake "depression" for "bad mood" and "anxiety" for "overthinking". They consider these emotions normal, and thus when these emotions have already had a negative impact on their health and life, they do not realize the mental health problems.

(17) Lack Of Knowledge On How To Properly Resolve Emotional Issues

Category: Awareness
Problem Drives form: User Needs

Interview studies show that older people in the community lack the knowledge to solve emotional problems correctly. They usually choose to ignore negative feelings or avoid talking about negative emotions. This may be because they are concerned for their children or family members and do not want to cause them trouble, or it may be that long-term emotional concealment has solidified their emotional expression patterns.

When asked whether they communicate their negative emotions and troubles with others, 10 interviewees said that they tend to deal with any emotional distress by themselves. This evasive approach may allow negative emotions to accumulate over a long period of time. Unvented emotions may transform into long-term emotional distress, affecting their sense of happiness and causing irreversible harm.

Perhaps public mental health services could inform the elderly that emotions can be expressed, or provide channels for them to express their emotions, helping them to handle their emotions properly and obtain a more positive and healthy emotional expression system.

(18) Doubts About The Effectiveness Of Medications And Doctors' Plans

Category: Awareness
Problem Drives form: User Needs

The elderly may doubt the effectiveness of medication and the doctor's plan, which can lead to them forgetting to take their medicine, taking it late or stopping it without consulting a doctor.

Since the elderly expect their symptoms to improve immediately after taking the medication, psychotropic drugs do not work in this way. If they do not immediately feel relief from symptoms when the treatment course begins, they will start to doubt the effectiveness of the medicine and the doctor's professionalism. Some elderly people will then seek medical treatment again, either attempting to get help from other doctors or stopping the medication without guidance. All these behaviors will affect the therapeutic effect.

If patients understand how drugs work and what to expect from their treatment, it can promote stronger trust relationships between them and doctors. This improves cooperation between doctors and patients, leading to better disease treatment.

(19) Rarely Establish New Social Connections

Category: Social
Problem Drives form: User Needs

On the one hand, the social circle of the elderly is relatively limited and has a strong connection with their living environment. Interview data shows that 80% of interviewees' social circles are limited to their local community, and they mainly interact with neighbours. such social phenomena may be related to living patterns. If it is an empty-nest family where the couple lives together, their social relationships will be more limited. Due to the existence of a stable partnership, the daily activities of these interviewees are all carried out in the form of couple companionship (such as shopping together, taking walks), while the elderly without a partner show a stronger need for

active social interaction.

On the other hand, the elderly lack the ability and motivation to socialise actively. Some elderly people are affected by their physical condition and find it difficult to move over long distances or for long periods. This restricts their daily activities to the local area, making it difficult for them to meet people outside their social circles. Some elderly people still feel lonely but are reluctant to participate in offline community activities, which limits opportunities to establish new social relationships.

(20) Difficulty Maintaining Past Social Relationships

Category: Social
Problem Drives form: User Needs

In terms of maintaining relationships, only three interviewees kept in regular contact with old friends. The majority had not formed new social connections in recent years and tended to interact with people of the same age group. Once they leave the working environment, they gradually lose contact with their former colleagues. Especially with the relocation of their living addresses, the elderly may have a greater spatial distance from their old friends.

Research has found that the difficulty of maintaining relationships intensifies with age: On the one hand, as interviewees grow older, their past friends may lose the ability to act independently due to illness or die for various reasons, and the nodes in their social networks are constantly decreasing; On the other hand, as the physical functions of the elderly decline, their willingness to keep in touch with them is also constantly decreasing.

(21) Limited Emotional Support From Family For Elderly Living Alone

Category: Social
Problem Drives form: User Needs

Research has found that elderly people living alone receive less emotional support from their families than elderly people living with their spouses or children. Even when some life problems arise, some family members find it difficult to help solve them in time. Therefore, elderly people living alone are more inclined to seek support from neighbors, friends or community workers around them.

The most common way for elderly people living alone to contact their families is by phone. All of the elderly people living alone who were interviewed have the habit of talking to their families on the phone, usually after their children have finished work in the evening (interviewees F1, F11 and F14). The interviewees said that their children's calls temporarily relieved the loneliness of living alone to some extent, but at the same time, the elderly also said that they did not want to cause their children worry or trouble.

Some interviewees' children would visit them at weekends, have meals together, and so on (interviewees F11 and F14), while others would take them out for leisure activities (interviewee F1). The relationship among family members remains at the level of more greetings about daily life, lacking in-depth emotional communication.

(22) Having Multiple Chronic Diseases And Taking Multiple Medications At The Same Time

Category: Behaviour
Problem Drives form: User Needs

Of the 15 elderly interviewees to this visit and survey, 11 suffered from at least one chronic disease. Hypertension was the most common, affecting seven of the interviewees. Diabetes, rheumatism and chronic obstructive pulmonary disease were also relatively common. Additionally, some elderly people of advanced age had cancer and were receiving conservative treatment.

As people age, the health of the elderly in the community gradually declines. Some of them suffer from multiple chronic diseases or are plagued by chronic pain for a long time, which poses some challenges to their community life: for instance, they often go to the hospital to get medicine, take medicine on time and in the right amount every day, and have regular check-ups for their conditions.

(23) Lack Of Outdoor Activities And Physical Exercise

Category: Behaviour
Problem Drives form: User Needs

None of the interviewees this time had the habit of deliberately doing exercise training. The elderly mainly got their exercise from walking when shopping every day and taking a walk after meals. The training of physical flexibility, coordination and strength is completely blank.

(24) Lack Of Entertaining, Flat Lifestyles

Category: Behaviour
Problem Drives form: User Needs

The elderly people interviewed generally lack hobbies and interests, meaning their daily lives lack focus. They tend to focus on trivial matters and family relationships, and are prone to negative emotions such as worry and anxiety.

Some common hobbies, such as calligraphy (F4), knitting (F2), Musical Instruments (F14), cooking, etc., can help the elderly gain more opportunities for social interaction, create topics for communication, and thus have more fun in social activities. Outstanding elderly people can even gain a strong sense of social recognition through their hobbies. For example, an elderly person who practises calligraphy often writes couplets for their neighbours for free during the Spring Festival, receiving much praise, which makes them feel extremely proud.

Therefore, we can try to expose the elderly to more new things and cultivate some hobbies through certain means to enrich their lives and improve their mental health at the same time.

(25) Higher-Than-Expected Acceptance Of Electronic Devices Among Older Adults

Category: Behaviour
Problem Drives form: User Needs

Surprisingly, most elderly residents in Jing'an District are relatively proficient in using smartphone functions, such as conducting simple social interactions (e.g. video calls, photo sharing and sending red packets) with software. On this basis, the functions and interaction methods familiar to the elderly can be expanded. New online functions can be developed without causing too much cognitive load, and this can be used as a carrier to promote the mental health of the elderly.

However, practical applications also need to consider the elderly's physiological limitations, such as hearing and vision loss, as well as the influence of dialect accents on voice interaction.

5.2 The Opportunities

Based on the challenge, possible solutions for system optimisation were identified, resulting in a total of 18 potential opportunities. In this chapter, a brief introduction to each opportunity plan will be given, and the challenges it aims to solve and the territory resources that can be utilized will be marked.

Preventative Methods

Preventive Methods mainly help the elderly improve their daily emotional levels and enhance their overall sense of happiness in life in an indirect way. They also help the elderly to build stronger social networks, increase their daily social interactions and relieve feelings of loneliness and boredom. Preventive Methods follow the principle of "positive health", eliminating risk factors before problems occur, thereby achieving the goal of reducing mental health issues among elderly residents.

(1) Periodic screening through family doctors

Corresponding challenges:

Lack Of Universal Early Screening

It Is Difficult To Reach The Elderly Who Really Need It

The psychological indicators of the elderly are measured and recorded periodically through the opportunity

of regular home visits by family doctors, initiated at the community level.

On the one hand, it is because the professional identity of family doctors can convince the elderly; on the other hand, it prevents the concealment of risks. Because in the volunteer screening activities held in the past, only a small number of elderly people took the initiative to be measured, and the elderly who were truly at risk were difficult to be reached in this process. Family doctors can comprehensively connect with elderly residents in the community, which can prevent elderly people with serious risks from hiding themselves.

(2) Disseminate popular science information on mental health to enhance the public's basic awareness

Corresponding challenges:

- *Knowledge Of Access To Treatment Channels Is Limited*
- *Lack Of Knowledge About Mental Health Issues*
- *Lack Of Knowledge On How To Properly Resolve Emotional Issues*
- *Doubts About The Effectiveness Of Medications And Doctors' Plans*

Compile popular science materials to enhance the elderly's basic understanding of mental health knowledge, including the connection between mental health and physical health, potential symptoms, channels for seeking medical treatment, consultation processes, treatment cycles, drug symptoms, etc., and reduce prejudice and misunderstanding.

Increase publicity and exposure by placing popular science information in the daily routines of the elderly. Alternatively, the credibility of the information can be enhanced through expert channels to draw the elderly's attention to the negative impact on mental health.

(3) Provide volunteer chance for elderly to participate In

Corresponding challenges:

- *Insufficient Grassroots Staff*
- *It Is Difficult To Reach The Elderly Who Really Need It*

By providing volunteer positions that elderly residents can participate in within the community, from the perspective of the elderly, it can offer them ways to engage in social affairs, encourage active elderly people to lead other elderly people to form mutual assistance groups, and increase their sense of social achievement while creating a better community atmosphere.

From the community management team's perspective, since there is a shortage of staff at the grassroots level, some work can be entrusted to motivated citizens by opening up volunteer positions, thereby alleviating the pressure on staff at this level.

(4) Distribute popular science materials through family doctor network

Corresponding challenges:

- *Don't Want To Be Treated Specially Because Of Illness*
- *Lack Of Knowledge About Mental Health Issues*
- *Lack Of Knowledge On How To Properly Resolve Emotional Issues*
- *Doubts About The Effectiveness Of Medications And Doctors' Plans*

The family doctor team goes deep into the homes of elderly people, distributing mental health science popularisation materials and medical treatment guidelines, and providing non-invasive mental health services. This approach respects the privacy of the elderly while offering them the necessary psychological support.

It is hoped that, by widely distributing materials through family doctors, the accuracy and effectiveness of the publicity will be enhanced and people's prejudice against psychological problems will gradually be eliminated. In the long term, this could also have a positive impact on the future popularity of mental health services.

(5) Introducing a Third-Party Services team to organise arts group activities

Corresponding challenges:

- *Rarely Establish New Social Connections*
- *Lack Of Entertaining, Flat Lifestyles.*

Corresponding territory resource:

- *The community has space dedicated to senior activities*
- *Developed service industries in the region*
- *Quality urban green space resources*

By making use of the abundant community public space resources in Jing 'an District and introducing outstanding third-party service teams, cultural activities can be carried out in the community, such as leading the elderly to cultivate interests and hobbies like reading, calligraphy and painting, and handicrafts, to enrich the content of their elderly life. Group activities such as choirs and bands can be organised to encourage social interaction among the elderly, or outdoor art activities such as photography and sketching in beautiful urban parks can be carried out to increase outdoor activity.

(6) Organize outdoor activities or sports activities

Corresponding challenges:

- *Lack Of Outdoor Activities And Physical Exercise*

Corresponding territory resource:

- *Well-established urban trails*
- *Abundant public fitness equipment resources*

The abundant urban park and fitness equipment resources in Jing'an District could be used to organise outdoor or sports activities. For instance, community elders could be encouraged to walk on urban walkways daily and attend Tai Chi classes in nearby parks.

Through the organisation of the

community, encourage the elderly to go out more often, increase their physical exercise and gradually improve their health and emotional well-being under scientific guidance, thereby reducing the mental health risks associated with long-term home stay.

(7) Plan travel routes for elderly

Corresponding challenges:

- *Insufficient Personalization Of Services At The Community Level*
- *Lack Of Outdoor Activities And Physical Exercise*
- *Lack Of Entertaining, Flat Lifestyles.*

Corresponding territory resource:

- *Well-established urban trails*
- *Convenient metro and bus networks*
- *Government travelling subsidies for the elderly*
- *Abundant resources of cultural venues*

Take advantage of the convenient public transport network in Jing'an District to plan and recommend travel routes for the elderly. Plan different themed routes, such as nature, cultural exhibitions and discount shopping. Considering the physical capabilities of the elderly, some suggestions for traveling in the city are provided. Choose routes that are more friendly to the elderly and have higher accessibility to reduce the troubles and obstacles encountered during travel, help the elderly increase their confidence in traveling, and expand the range of daily activities. This makes up for the fact that the elderly do not obtain sufficient information from digital channels.

(8) AI voice companionship

Corresponding challenges:

- *Limited Emotional Support From Family For Elderly Living Alone*

By using the dialogue and voice functions of AI, a dedicated 'AI Companion' terminal can be created for elderly people living at home. It proactively initiates positive conversations every day, providing spiritual companionship and an outlet for the elderly with mobility difficulties, alleviating their loneliness.

(9) "Old Partner Radio Stations"

Corresponding challenges:

- *Rarely Establish New Social Connections*
- *Lack Of Entertaining, Flat Lifestyles.*

Organise community-wide 'Old Partner Radio Stations' to enrich the daily lives of elderly people. Elderly community members can ask questions and contribute to the programme. They can also take turns to host the radio station. Those living at home can listen to the radio every day via a home radio or mobile phone app. Residents can suggest inspiring topics such as resolving family conflicts, community affairs and sharing their creations. These genuine contributions can enhance the sense of connection within the community, stimulating interaction and providing mutual support.

Intervention Methods

Interventional measures mainly target elderly residents who already have mental health issues. These measures aim to improve access to mental health assistance for the elderly and help community workers to identify risks and provide services more effectively. More specifically, interventional measures will target certain aspects of mental health and propose optimisation measures to enhance the accuracy and effectiveness of service provision.

(10) Offer disease tracking and medication management tools

Corresponding challenges:

- *Medical Staff Have No Time To Actively Track The Course Of Patients' Illness*
- *Doubts About The Effectiveness Of Medications And Doctors' Plans*
- *Have Multiple Chronic Diseases And Take Medications At The Same Time*

Establish personal medical records for the elderly and record the medical orders for each visit to automatically remind them to return for follow-up visits in a timely manner. The system can also prompt the elderly to take the medicine on time and in the right amount, avoiding forgetting to take the medicine, and can also improve the patient's compliance during the treatment process.

(11) Hierarchical management approach

Corresponding challenges:

- *Insufficient Grassroots Staff*
- *Psychological Public Services Are Tight Across The City*
- *Insufficient Personalization Of Services At The Community Level*

Implement a step-by-step approach to managing mental health in the community. Assess the risk levels of elderly people with different conditions, focusing on high-risk groups such as those living alone, those in poor health, the elderly and those who stay at home for long periods. Provide targeted, graded care for different risk levels. Improve the dynamic profile of residents through the cooperation of family doctor teams and community committee teams. Supplement residents' health information dynamically (e.g. travel frequency, economic situation, health condition) to help community workers promptly identify risks and solve problems.

(12) Decentralize medical resources

Corresponding challenges:

- *Unevenly Distributed Medical Resources Between The North And The South*
- *Psychological Public Services Are Tight Across The City*
- *Community Service System Lacks Service Providers With Specialized Knowledge*

Establish cooperation with specialized hospitals, set up sub-clinics for psychological departments in

community health service centres, and invite specialized doctors to provide regular consultations.

This will increase the channels for medical treatment and at the same time reduce the elderly's resistance to visiting psychological clinics, allowing them to receive professional treatment guidance directly at a place very close to their homes.

Shorten the referral path for family doctors to enable the elderly to receive support more quickly.

(13) Establish regional telephone comfort service system

Corresponding challenges:

- *Psychological Public Services Are Tight Across The City*
- *Community Service System Lacks Service Providers With Specialized Knowledge*
- *Don't Want To Be Treated Specially Because Of Illness*
- *Don't Want Private Information To Be Known By Others*

Set up a regional telephone comfort service system that provides online phone chat and psychological support services, focusing on the needs of elderly people living alone.

Elderly residents can form long-term partnerships with volunteers. Providing anonymous, long-term phone comfort services that make the elderly feel safe and comfortable can offer them stable emotional support beyond the family, alleviating the loneliness of those living alone in particular.

(14) Opening up data and information between healthcare systems

Corresponding challenges:

- *Information Flow Between Hierarchical Medical Systems Is Not Smooth*
- *The Resident Management System Cannot Be Automatically Updated*
- *Scattered Medical Records, Difficult To Track And Archive*

Connect information from different medical systems and open interfaces to allow systems to query each other's medical records. This will enable the community's consultation records to be updated in real time alongside those of hospitals, thereby creating a comprehensive health profile for residents and improving understanding of their overall health conditions. This will also help public service personnel to provide more targeted support.

Mixed Approach

The mixed approach can not only provide preventive services before problems occur, but also be used for long-term intervention and treatment after mental illness arises, assisting in enhancing the effectiveness of treatment methods. This mixed approach has the advantage of being able to widely cover the needs of elderly residents. It can enhance the awareness of ordinary residents regarding mental health issues and improve their sense of happiness in life, also provide timely and rapid intervention for disease conditions.

(15) Expand social relationship network

Corresponding challenges:

- *Rarely Establish New Social Connections*
- *Difficulty Maintaining Past Social Relationships*
- *Limited Emotional Support From Family For Elderly Living Alone*

Organise group activities through community channels to help the elderly make new friends, strengthen connections with existing friends and provide stronger emotional support by expanding their social network. This will enable them to cope better with risk events such as family conflicts and The death of friends or family. This will reduce the risk of mental health problems.

This strategy can be combined with other initiatives, such as organising outdoor activities, holding art-related events and introducing third-party service providers, to enrich the lives of the elderly.

(16) Form elderly dining groups

Corresponding challenges:

- *Rarely Establish New Social Connections*
- *Limited Emotional Support From Family For Elderly Living Alone*

Corresponding territory resource:
- Jing'an District has built a large number of community canteens for the elderly.

Studies have shown that eating meals with others can boost the happiness levels of elderly people who are less happy. Eating with others more frequently can enhance happiness, and this effect is more pronounced among those living alone (Wang, H. et al., 2023). Eating alone can intensify feelings of loneliness and lead to depressive moods among the elderly.

Based on the community canteen, group dining activities for the elderly can be organised. Led by elderly volunteers, these activities encourage neighbours and friends from the surrounding areas to form a dining group, bringing the elderly together and increasing their social interaction. Meanwhile, community canteens can offer discounted prices for groups dining with multiple people. This brings convenience to the lives of the elderly and increases social interaction, enhancing the pleasure of elderly residents. Community canteens can attract more diners, increasing footfall and profits, and enhancing the profitability of public service organisations.

(17) Mental health self-service toolkits

Corresponding challenges:

- *Don't Want Private Information To Be Known By Others*
- *Lack Of Knowledge About Mental Health Issues*
- *Lack Of Knowledge On How To Properly Resolve Emotional Issues*
- *Knowledge Of Access To Treatment Channels Is Limited*
- *It Is Difficult To Reach The Elderly Who Really Need It*

Provide the elderly with a mental

health self-service toolkit, which includes family doctor contact cards, mental health self-assessment tools, mental health science popularisation handbooks and other content. The popular science manual covers methods for correctly viewing emotions, ways to improve mental health levels, popular science on somatisation symptoms, channels for seeking medical treatment, the course and effect of psychological counselling, and popular science on psychotropic drugs, etc. Through self-service toolkits, help the elderly recognise their emotions, learn healthy ways to relieve emotions, and assist them in understanding their own mental health conditions.

In addition, when the elderly realise that they may have mental health issues, they can use the medical visit guidelines in the self-service toolkit to quickly find appropriate treatment channels. They can also use self-assessment tools to gain an initial understanding of their symptoms. The toolkit aims to improve understanding of psychological issues among the elderly, reduce prejudice and encourage them to seek outside help in a non-invasive way.

(18) Set up "Healthy Elderly check-in points"

Corresponding challenges:

- *Insufficient Personalization Of Services At The Community Level*
- *Lack Of Outdoor Activities And Physical Exercise*
- *Lack Of Entertaining, Flat Lifestyles.*

Corresponding territory resource:

- Developed service sector and many self-employed traders
- Well-established urban trails
- Convenient metro and bus networks
- Government travelling subsidies for the elderly
- Abundant resources of cultural venues

Setting up 'Healthy Elderly Punch Card Points' in outdoor parks, cultural and entertainment venues, or consumer and shopping venues, where punch card records are linked to the personal files of the elderly, and where the frequency of activity is used to judge the social interaction of the elderly, thus projecting the risk of emotional anomalies.

Merchants can also be encouraged to set up card-punching discount services to mobilise the enthusiasm of elderly residents, increase the flow of merchants, and drive the economic development of the region at the same time.

5.3 Case Study

Case analysis is an important method for testing the effectiveness and applicability of different practice models. In order to systematically evaluate the operational logic, implementation effect and promotional potential of existing cases, this study has established four core evaluation dimensions: Main drivers, resource input, mental health intervention goals, and scope of implementation. These dimensions provide a comprehensive examination of the case itself and offer empirical references for optimising future service designs.

The four analytical dimensions of case evaluation are as follows:

(1) Main Drivers

The primary objective of a case study is to identify the driving force behind the project and the level of involvement of each supporter group. In the context of mental health services for the elderly in the community, these supporters may include government agencies (e.g. civil affairs departments and health commissions), non-profit organisations (e.g. senior citizen associations and volunteer groups), community residents (e.g. neighbourhood mutual aid groups) and professional institutions (e.g. psychological counselling institutions), among others. It is of great significance to identify the main driving factors for understanding multi-agent collaboration models. This helps to determine the primary initiator of the project plan for future design schemes.

These include government departments, non-profit organisations, individuals and academic Institutions.

(2) Resource Input

This dimension focuses on the types and scale of the resources required for the project, including human resources, funding, time and space. Human resources cover the input ratios of full-time staff, volunteers, and part-time experts. Funds can come from sources such as government appropriations, social donations, or user out-of-pocket payments. Time refers to the service cycle, such as short-term intervention or long-term companionship. Space can be either fixed service stations or mobile service forms.

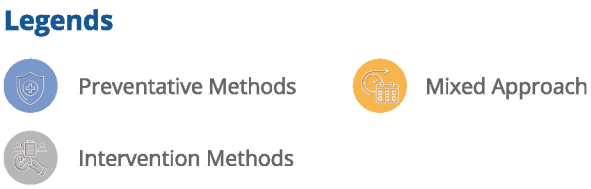
This dimension includes human resource investment, financial investment, time investment and space investment.

(3) Mental Health Intervention Goals

Assess the direct or indirect impact of the case on the mental health of the elderly and analyse the target factors for improvement in the following areas:

- Living environment: community adaptation for the elderly and home safety improvements.
- Health status: chronic disease management and mental health screening.
- Social relationships: organising social activities and promoting intergenerational interaction.
- Economic status: subsidy policies and re-employment support.

Through target decomposition, the action path of the case and the priority intervention areas can be clarified.



(4) Implementation Scope

The scalability of service coverage proposed in the examination case is classified into community level, city level, regional level, national level and international level according to the breadth of service impact. Analyzing the scope hierarchy is helpful for judging the replicability and scalability potential of the case.

The ultimate goal of case evaluation is to distill key experiences through systematic case comparisons, provide feasible support for opportunity points, and offer empirical evidence for the optimization of mental health services for the elderly in the community.

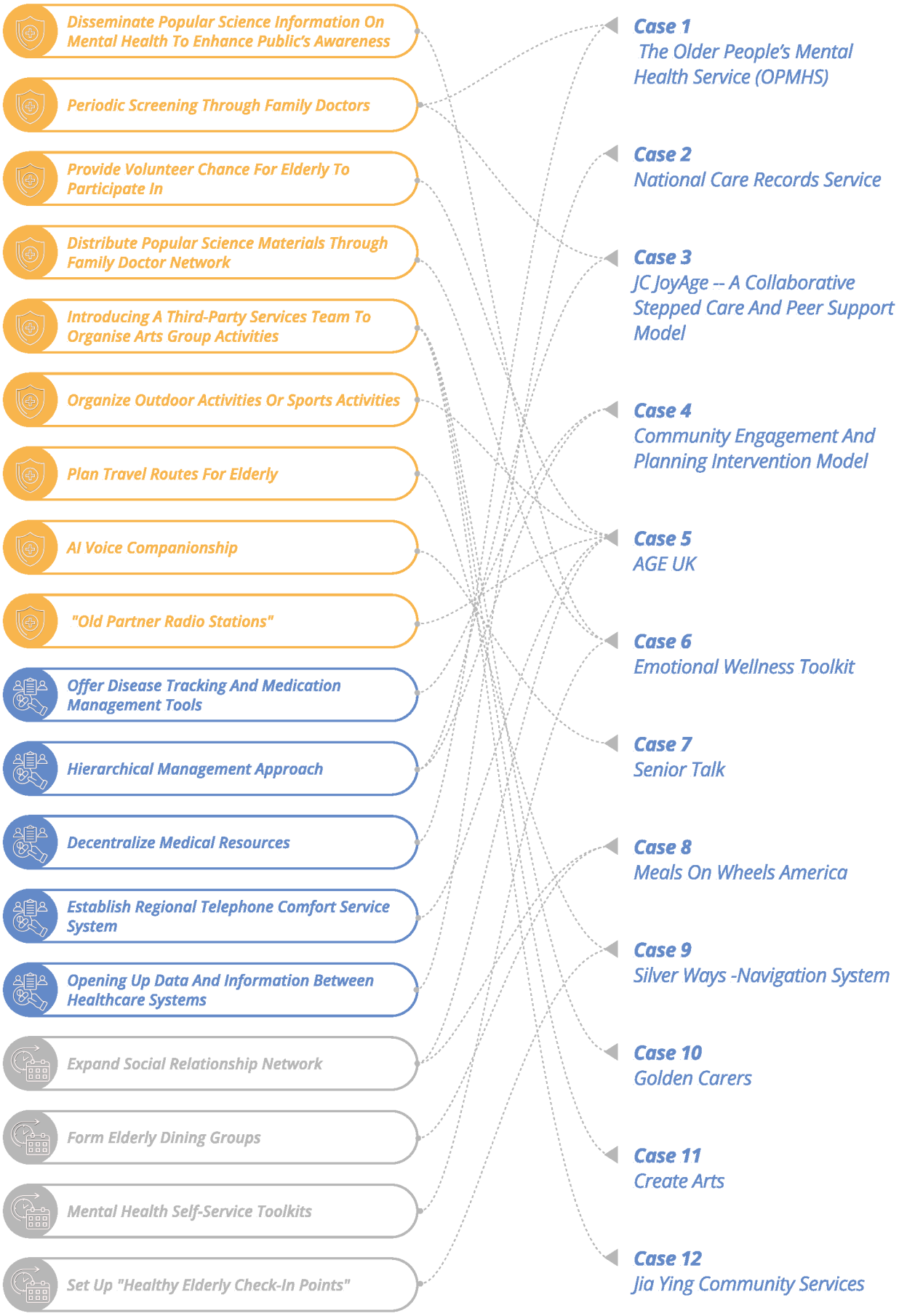
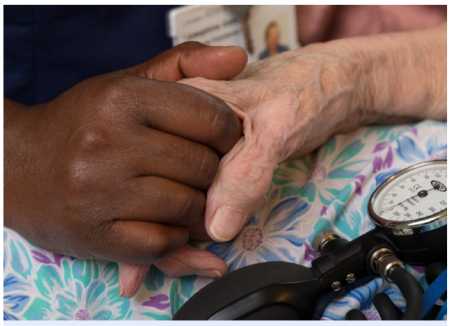


Figure 27. The correspondence between cases and opportunities

Case 1: The Older People's Mental Health Service (OPMHS)



Nation *UK*

Time *Unknown-Until Now*

Finance
- ☐ *Profitable*
- ☑ *Non-Profitable*

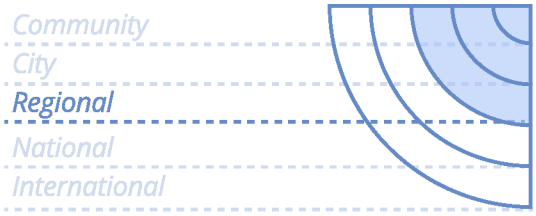
Carrier
- ☑ *Online*
- ☑ *Offline*

Type
- ☑ *Social Practice*
- ☐ *Research Project*
- ☐ *Business Innovation*

Main Driver
- *Government Departments*
- *Nonprofit Organisations*
- *Individuals*
- *Academic Institutions*

Resource Input
- *Human Resource*
- *Financial*
- *Time*
- *Space*

Intervention Goals
- *Environment*
- *Health*
- *Relationships*
- *Economic*
- *Awareness*



The Older People's Mental Health Service (OPMHS) is a professional service in the districts of Ealing, Hammersmith & Fulham, and Hounslow. It covers Specialist Older Adults Mental Health Services (SOAMHS), Cognitive Impairment and Dementia Services, and inpatient care. The SOAMHS is a team of experienced and specially trained professionals who provide assistance to individuals over 70 years old with mental health needs requiring specialist intervention beyond the scope of primary healthcare (NHS West London, n.d.).

The service contents mainly include:

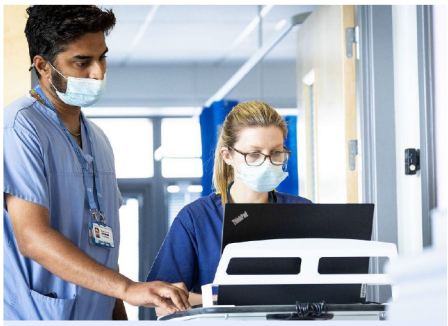
1. Assessment
   - Mental health assessment
   - Provision of further information about the individual's condition
2. Treatment and Intervention
   - Medication management
   - Individual therapy delivered by SOAMHS team members
   - Group work or group therapy (helping individuals learn ways forward under the guidance of professionals and with peer support from others in similar situations)
3. Information and Referral
   - Connecting individuals with other services that offer valuable support for those with mental health needs

The team members include: trained community psychiatric nurses who provide assessment, treatment and intervention; Occupational therapists assess psychological functions and provide intervention measures to support you in achieving your goals and enhancing the health of patients. Psychiatrists explore drug treatment regimens and evaluate therapeutic effects (NHS West London, n.d.).

In this project, an NHS led provider collaboration organisation was established. These service providers were entrusted to offer high-quality services to specific groups of people. These providers are committed to understanding the needs of local residents and are subject to the quality supervision of the NHS to ensure that high-quality and timely health care can be provided to everyone in need and that they can receive treatment closer to home (North West London Community Collaborative, n.d.).

This project collaborates closely with the primary care network and can facilitate referrals between family doctors and specialists. Since the NHS is a healthcare system funded and managed directly by the British government, it does not aim to make a profit, but prioritises providing public services. Government funding provides a stable source of income, ensuring the sustainability of its services. A government-led model can effectively mobilise public service resources and provide specialised intervention and treatment channels.

Case 2: National Care Records Service



Nation *UK*

Time *Unknown-Until Now*

Finance
- ☐ *Profitable*
- ☑ *Non-Profitable*

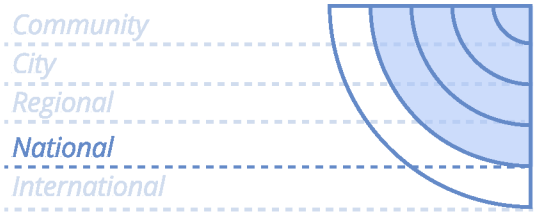
Carrier
- ☑ *Online*
- ☐ *Offline*

Type
- ☑ *Social Practice*
- ☐ *Research Project*
- ☐ *Business Innovation*

Main Driver
- *Government Departments*
- *Nonprofit Organisations*
- *Individuals*
- *Academic Institutions*

Resource Input
- *Human Resource*
- *Financial*
- *Time*
- *Space*

Intervention Goals
- *Environment*
- *Health*
- *Relationships*
- *Economic*
- *Awareness*



The National Care Records Service (NCRS) is a service that allows health and social care professionals to access and update a range of patient and safeguarding information across regional Integrated Care Board (ICB) boundaries.

The NCRS enables any authorised clinician, care worker and/or administrator, in any health or care setting, to access and update patient information.

The NCRS is also a web-based application that allows data access through an online system, therefore can be accessed by any kind of IT system. So that it can provide healthcare workers with fast and secure access to patient information, 24 hours a day, 365 days a year.

The NCRS enables different health service systems to connect with each other and obtain patient data. Shared record contents include address and contact number, prescription drugs, allergy history, test results, care plan, outpatient appointments, length of hospital stay and personal preferences.

Healthcare workers can use this information to improve the quality and accuracy of clinical decisions (NHS England, n.d.). This additional information is particularly useful for those suffering from complex or chronic diseases, or for

patients approaching the end of their lives, as it can improve the care services during the treatment process.

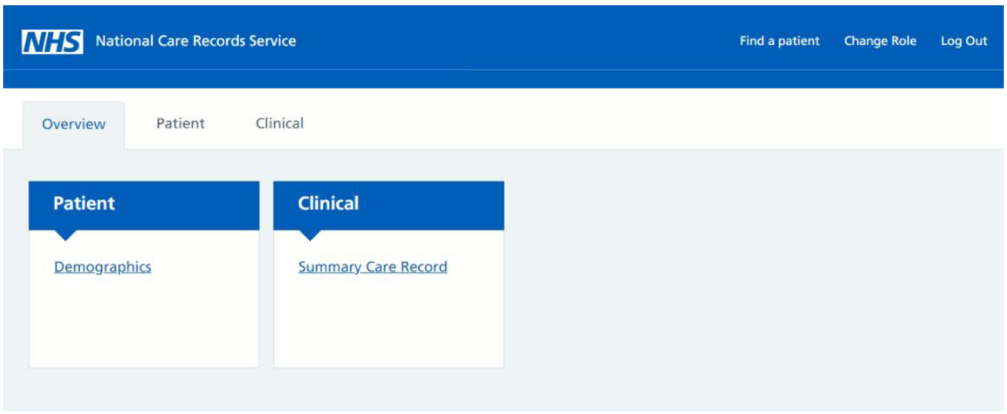


Figure 28. The online page of National Care Records Service (Cegedim Rx, n.d.)

Centrally managed datasets can also improve medical services, support medical research, and inform policymaking (NHS England, n.d.).

Case 3: JC JoyAge -- A Collaborative Stepped Care And Peer Support Model

Nation *China*

Time *2018-2022*

Finance
- ☐ *Profitable*
- ☑ *Non-Profitable*

Carrier
- ☐ *Online*
- ☑ *Offline*

Type
- ☐ *Social Practice*
- ☑ *Research Project*
- ☐ *Business Innovation*

Main Driver

Government Departments

Nonprofit Organisations

Individuals

Academic Institutions

Resource Input

Human Resource

Financial

Time

Space

Intervention Goals

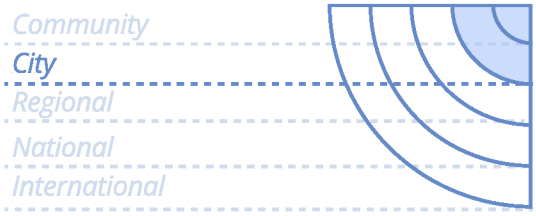
Environment

Health

Relationships

Economic

Awareness



The JC JoyAge model is a collaborative stepped care and peer support model. This model meticulously divides the hierarchical care strategy into three levels, each of which precisely targets specific elderly user groups and provides corresponding intervention contents:

The first level: Minimum intervention and community peer support

This level is mainly targeted at elderly people with mild depressive symptoms. These individuals may be at risk of depression, or their symptoms may not yet have had a significant impact on their daily lives.

The focus is on peer support and community health promotion. Trained elderly peer supporters provide one-on-one or group companionship, listening, experience sharing and emotional support. At the same time, health education lectures, self-management skills training and interest group activities are carried out to enhance the psychological resilience of the elderly, promote an active lifestyle and prevent symptoms from deteriorating. The goal is to identify symptoms early and intervene to prevent them from progressing to moderate or severe levels.

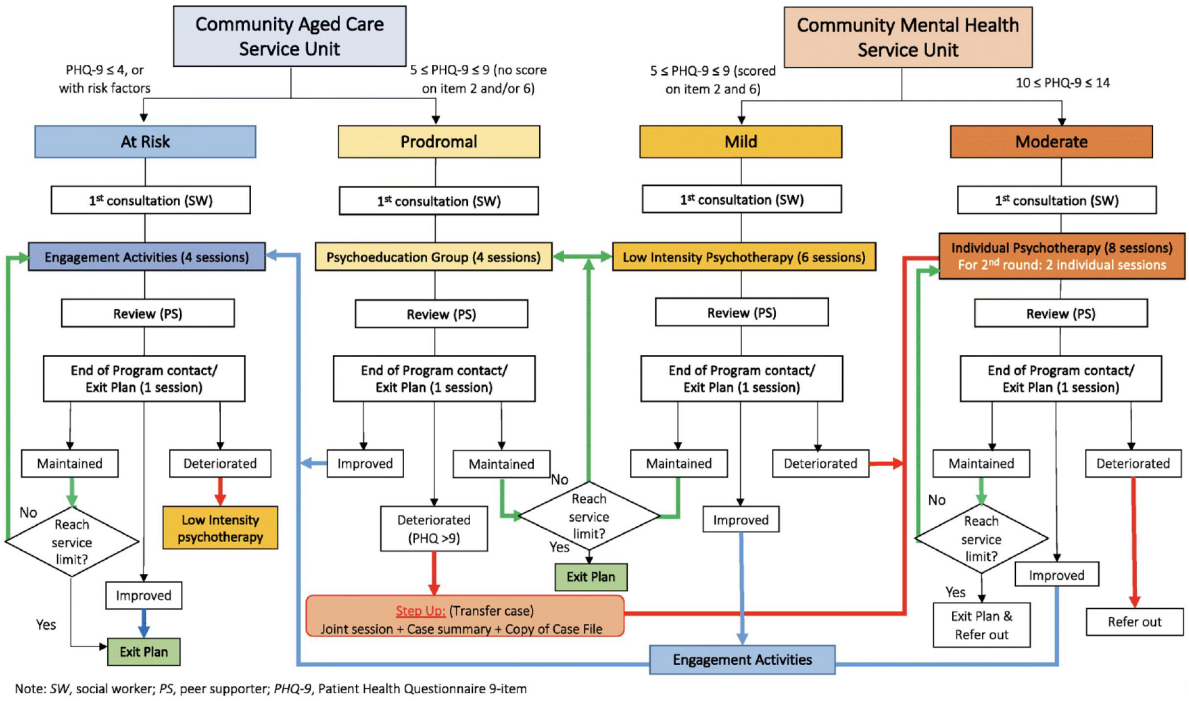
The Second level: Low-intensity professional intervention

This level is mainly targeted at elderly people with moderate depressive symptoms, or those with mild depression whose symptoms have not improved or have worsened after intervention at the first level.

On the basis of peer support, introduce professional psychological counseling and brief psychological intervention. Structured counseling services are provided by professionals such as social workers and psychiatric nurses, including problem-solving therapy and behavioural activation. These interventions are designed to help the elderly identify and deal with specific problems that cause depression, and improve their mood and behavioural patterns. At this stage, the combination of professional support and community support is emphasized to enhance the intervention effect.

The third level: High-intensity professional intervention and specialized referrals

This level is mainly targeted at elderly people with severe depressive symptoms, or complex cases where symptoms persist or further deteriorate after second-level intervention, as well as elderly people with severe mental disorders.



Note: *SW*, social worker; *PS*, peer supporter; *PHQ-9*, Patient Health Questionnaire 9-item

Figure 29. Collaborative stepped care and peer support services flowchart (Liu, T. et al., 2022)

Provide high-intensity professional psychiatric and psychological treatment. This means that the elderly will be referred to specialized psychiatric clinics, hospitals or mental health centres, where they will receive medication treatment from psychiatrists and in-depth psychological therapy (such as cognitive behavioural therapy) from clinical psychologists. This level emphasizes multidisciplinary team collaboration, providing comprehensive and personalized clinical intervention to ensure that complex and severe mental health issues receive timely and effective professional treatment.

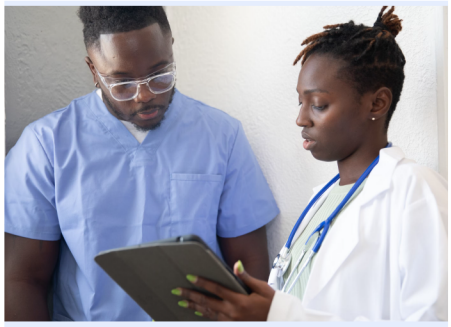
This hierarchical design ensures the JC JoyAge model allocates resources rationally, avoids excessive medical treatment or insufficient intervention, and precisely matches and effectively manages elderly people with depression of different severity levels.

The 'collaborative stepped care and peer support model' implemented in this case lowers the threshold for the elderly to seek professional help by building a support network within the community and using their own resources (eg. peer supporters).

The accessibility and inclusiveness of the service have been enhanced. Meanwhile, the elderly peer supporters have been innovatively incorporated into the service system to address the increasingly severe shortage of professional psychiatric medical staff, effectively sharing the daily workload of professionals and enabling them to focus more on handling complex and high-intensity clinical tasks.This model can also. precisely allocates resources to the most needed levels through hierarchical care, avoiding the expensive expenses caused by unnecessary intervention.

The assessment results of this model are relatively positive and will help guide other regions to build similar elderly mental health support systems, enhancing the overall psychological well-being of the elderly in a more sustainable and humanized way, and achieving true "active aging".

Case 4: Community Engagement And Planning Intervention Model



Nation *USA*

Time *2014*

Finance
- ☐ *Profitable*
- ☑ *Non-Profitable*

Carrier
- ☐ *Online*
- ☑ *Offline*

Type
- ☐ *Social Practice*
- ☑ *Research Project*
- ☐ *Business Innovation*

Main Driver

Government Departments

Nonprofit Organisations

Individuals

Academic Institutions

Resource Input

Human Resource

Financial

Time

Space

Intervention Goals

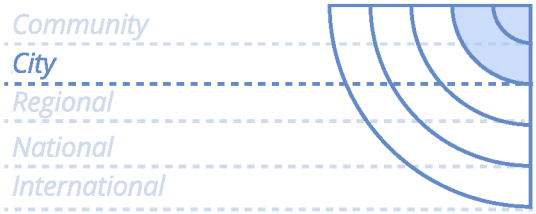
Environment

Health

Relationships

Economic

Awareness



This case study is part of a research project called the 'Community Partners in Care Depression Care Improvement Trial' (CPIC) in Los Angeles, USA. The study aims to compare the impact of different implementation strategies on the quality of depression care in the community. Two different implementation strategies were set up to promote improvement in the quality of depression care. One of these strategies, the Community Engagement and Planning (CEP) intervention, was compared with traditional methods. The uniqueness of this strategy lies in its emphasis on enhancing the ability to identify, intervene in, and manage depression through collective collaboration and strategic planning among community institutions, rather than relying on technical assistance from a single institution. This model goes beyond the traditional top-down approach to service implementation, instead advocating a more organic, community-driven, bottom-up solution.

The core concept of CEP intervention lies in building a diverse, interconnected and collaborative depression care ecosystem by empowering the community itself. Its main goal is to promote the deep integration and synergy among different types of institutions within the community

(including healthcare, mental health, social services, religious groups, and even leisure and entertainment centres, etc.), and jointly provide comprehensive and continuous services for patients with depression. In terms of the operational mechanism, CEP adopts an alliance-based working model, bringing together representatives of participating institutions into a community working group. This working group holds regular meetings to jointly analyse the current situation and bottlenecks of depression care in the community, and based on evidence-based practice, collaboratively formulates and implements a multi-institutional community action plan.

The specific contents of the CEP intervention cover multi-level measures that aim to enhance community service capacity comprehensively. For example, professional training in identifying, assessing and intervening in depression (including cognitive behavioural therapy techniques) is provided for non-psychiatric professionals (such as substance abuse counsellors and community social workers) to increase the availability of services. Detailed community service resource guidelines are compiled, clearly defining the scope of services, access conditions, and contact information for each institution. This optimises the referral process and ensures that patients can seamlessly access the necessary support. Regular case seminars are organised. These seminars facilitate the exchange of experience and the optimisation of collaboration models among professionals from different institutions through the discussion of real patient cases. They even explore the establishment of a community volunteer programme where trained volunteers assist in matching elderly people with depressive symptoms to appropriate community services and provide follow-up support. This enhances the accessibility of services and improves patient compliance. Together, these measures form a dynamic and responsive service system that aims to enable depression care to be more naturally integrated into the daily lives of the elderly and supported by the community networks they trust.

The assessment of the implementation process of CEP intervention by the CPIC trial revealed its significant benefits and great potential in enhancing the community's ability to care for depression. The research results show that it is completely feasible to successfully establish and effectively operate a collaborative alliance composed of multiple community organisations through the support and guidance of academic institutions. This alliance not only actively participates in collective planning and decision-making, but also, through joint efforts, successfully develops and promotes a series of intervention measures and resources for depression.

More importantly, community partners participating in the CEP intervention generally reported that through this collaborative model, multiple positive effects were generated on them. Firstly, collaboration and networking capabilities

between institutions have significantly improved, breaking down the barriers of acting independently and promoting information sharing and resource integration. Secondly, the institution's own depression care capacity has been substantially enhanced, including the improvement of employees' knowledge level and the improvement of service provision methods. Thirdly, community awareness of depression and the de-stigmatisation process have increased, creating a more supportive social environment. These benefits have contributed jointly to improving the community's recognition of depression and the quality of intervention. Although this study did not report the final clinical outcomes of patients, the successful implementation process itself suggests a positive patient experience and potential health improvements.

Overall, the CEP intervention approach effectively addresses the challenges of fragmented services and a shortage of professional resources by emphasising multi-party participation, collective planning and resource sharing. It reveals that by empowering the community itself, a more sustainable mental health support system that better meets the actual needs of the elderly can be constructed.

Case 5: AGE UK

Nation *UK*

Time *2009-Until Now*

Finance
- ☐ *Profitable*
- ☑ *Non-Profitable*

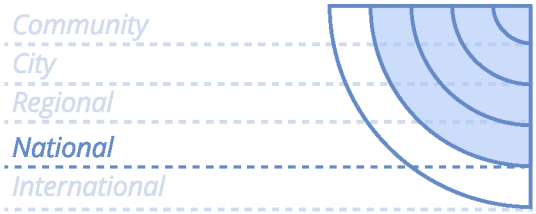
Carrier
- ☑ *Online*
- ☑ *Offline*

Type
- ☑ *Social Practice*
- ☐ *Research Project*
- ☐ *Business Innovation*

Main Driver
- *Government Departments*
- *Nonprofit Organisations*
- *Individuals*
- *Academic Institutions*

Resource Input
- *Human Resource*
- *Financial*
- *Time*
- *Space*

Intervention Goals
- *Environment*
- *Health*
- *Relationships*
- *Economic*
- *Awareness*



Age UK is one of the largest and most influential charities for older people in the United Kingdom (Age UK, n.d.). It was formed in 2009 through the merger of two renowned organisations: Age Concern England and Help the Aged. As an independent non-profit organisation, Age UK operates with a clear and ambitious mission: to create a better later life for all older people—one in which they feel included, valued, and enjoy dignity, health, and security. Its operational model integrates national-level policy advocacy and research with grassroots services delivered through a network of local branches across the UK. This dual approach—combining top-down strategy with bottom-up implementation—enables Age UK to comprehensively address the well-being of older adults from both macro-policy and micro-community perspectives.

Age UK's service system is designed to holistically improve older people's quality of life. Its core goals include supporting older adults in overcoming financial difficulties, maintaining physical and mental well-being, promoting social participation, and safeguarding their rights. The organisation offers a wide range of services, including but not limited to: providing expert advice and information on pensions, benefits,

housing, healthcare, and social care; reducing loneliness and social isolation through befriending services, community events, and digital training; engaging in policy advocacy and research to combat age discrimination and uphold the rights of older people; and offering a range of products and services that help older adults maintain independent living.

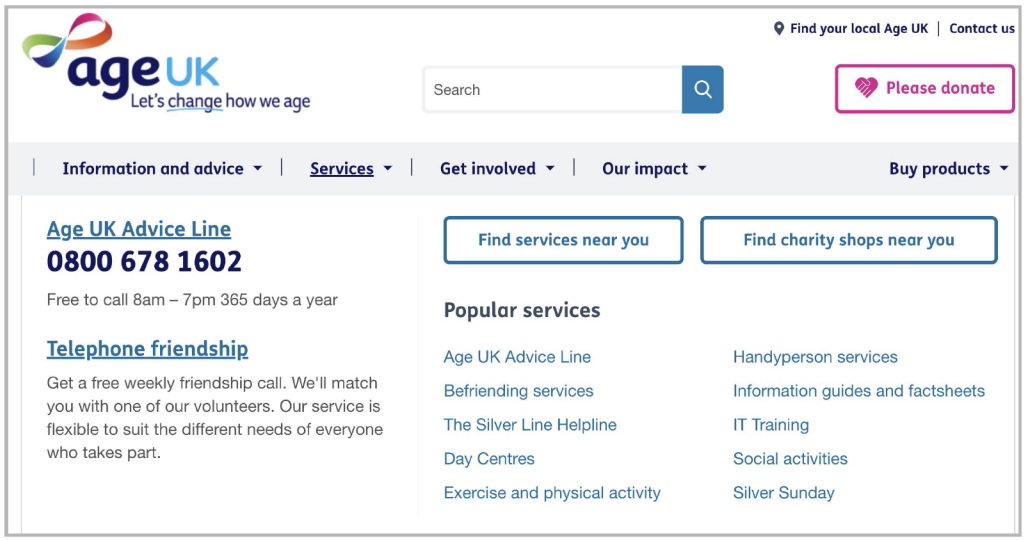


Figure 30. The official website of Age UK

In the field of mental health services for older people, Age UK recognises the profound negative impact that loneliness and social isolation can have. To address this, it has implemented several innovative practices. One such initiative is the Befriending Services, which recruits and trains volunteers to provide regular telephone calls or face-to-face visits to older individuals in need. The goal is to build consistent companionship, where volunteers not only offer emotional support and attentive listening but also act as a bridge between the older person and the wider world, helping them rediscover a sense of social belonging. Another notable initiative is the Silver Line Helpline, a free, 24-hour telephone support service that offers companionship, information, and emergency assistance tailored specifically to older people.

In addition, through its local branches all over the UK, Age UK actively organizes various community activities and interest groups, such as health lectures, physical exercise courses, book clubs, handicraft workshops and digital skills training, etc. These activities offer the elderly the opportunity to go out of their homes, make new friends and expand their social circles, thereby effectively reducing the risk of social isolation and promoting their active social participation.

In addition to actively addressing social distancing, Age UK is committed to improving the mental health of the elderly by providing comprehensive, easily accessible information, advice and integrated support. The Age UK Advice Line is

a free consultation hotline that provides professional and confidential advice to the elderly on topics such as pensions, benefits, housing and medical care. Although these services may not seem directly related to mental health, they play a crucial role in alleviating economic pressure and solving life problems for the elderly, thereby improving their psychological state indirectly and effectively. Economic stability and an organised life are undoubtedly important cornerstones of mental health.

Figure 31. Age UK Advice Line is a free, confidential national telephone service for older people, as well as their families, friends, carers and professionals. Our team will give you information that's reliable and up to date and help you access the advice you need.

Furthermore, Age UK is committed to developing and distributing professional mental health guidelines and promotional materials. For instance, the guideline titled "Your Mind Matters" aims to raise awareness among the elderly and their families of common mental health issues such as depression, anxiety, and sadness. It also provides practical guidance on identifying symptoms and seeking professional assistance. These information materials are written in plain, easy-to-understand language to help the elderly better understand their own emotional changes and reduce the stigma surrounding mental health problems.

Through in-depth research on the Age UK case study, it is possible to understand not only its successful service model and operational mechanisms, but also its management experience. Furthermore, one can learn how to effectively compensate for the shortage of public services through the power of social organisations in a community environment with limited resources, and achieve precision and personalisation in mental health services for the elderly.

Case 6: Emotional Wellness Toolkit

Nation *UK*

Time *2023*

Finance
- ☐ *Profitable*
- ☑ *Non-Profitable*

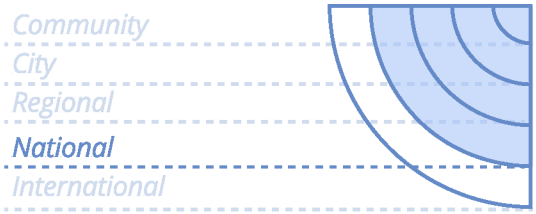
Carrier
- ☑ *Online*
- ☐ *Offline*

Type
- ☑ *Social Practice*
- ☐ *Research Project*
- ☐ *Business Innovation*

Main Driver
- *Government Departments*
- *Nonprofit Organisations*
- *Individuals*
- *Academic Institutions*

Resource Input
- *Human Resource*
- *Financial*
- *Time*
- *Space*

Intervention Goals
- *Environment*
- *Health*
- *Relationships*
- *Economic*
- *Awareness*



The Emotional Wellness Toolkit is an online resource provided by the National Institutes of Health (NIH) in the United States, functioning as a sub-section of the broader Wellness Toolkit initiative. Rather than a traditional "program" or research study, it serves as an accessible informational toolkit designed to support individuals in improving their emotional well-being and managing life's stressors. It offers practical strategies and resources that can be easily understood and applied by the general public to enhance emotional resilience and overall mental health (National Institutes of Health, n.d.).

The Emotional Wellness Toolkit presents a series of actionable strategies and printable checklists focused on six key dimensions of emotional health:

1. Build Resilience: This involves enhancing one's ability to cope with adversity by cultivating healthy physical habits, such as maintaining a balanced diet, being physically active and getting enough sleep. It also involves setting aside time for oneself every day, focusing on positive experiences, viewing problems from different perspectives and learning from mistakes. It also encourages people to cultivate gratitude, explore life's meaning and purpose, and live according to their personal values.

2. Reduce Stress: It provides the necessary skills and resources to deal with daily stress, including an understanding of its impact and the ability to manage physical and mental tension through relaxation techniques.

3. Get Quality Sleep: Emphasise the importance of good sleep for emotional health and provide suggestions for improving sleep quality.

4. Strengthen Social Connections: Explore how social connections impact physical and mental well-being, offering suggestions such as sharing healthy habits with friends and family, seeking help, joining interest groups, and participating in courses or community volunteer activities to establish a healthy support system.

5. Coping with Loss: Provide strategies for dealing with emotions of sadness and loss, including practising self-care, sharing feelings with others, avoiding making major changes immediately and considering seeking professional support.

6. Be Mindful: Introduce the concept of mindfulness and its practice to help people enhance their awareness of the present moment, thereby managing emotions and stress more effectively.

The Emotional Wellness Toolkit is a highly useful public health education tool. By providing free, authoritative and practical information, it helps people enhance their emotional literacy and ability to cope with life challenges, thereby promoting overall health and well-being. The advantage of this toolkit is that, as an online resource, it is easy to obtain, presents the content in a concise and clear way, and is also convenient for the general public to understand and apply. Moreover, as the publisher of this toolkit, NIH has a professional team to support the scientific nature of its content, which is usually based on the latest health research and scientific evidence and is highly reliable.

YOUR HEALTHIEST SELF

Emotional Wellness Checklist

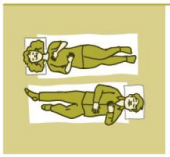
Emotional wellness is the ability to successfully handle life's stresses and adapt to change and difficult times. Here are tips for improving your emotional health:

BUILD RESILIENCE

People who are emotionally well, experts say, have fewer negative emotions and are able to bounce back from difficulties faster. This quality is called resilience. Learning healthy ways to cope and how to draw from resources in your community can help you build resilience.

To build resilience: :

- ☐ Develop healthy physical habits.
- ☐ Take time for yourself each day.
- ☐ Look at problems from different angles. Learn from your mistakes.
- ☐ Practice gratitude.
- ☐ Explore your beliefs about the meaning and purpose of life.
- ☐ Tap into social connections and community.



REDUCE STRESS

Everyone feels stressed from time to time. Stress can give you a rush of energy when it's needed most. But if stress lasts a long time–a condition known as chronic stress–those "high alert" changes become harmful rather than helpful. Learning healthy ways to cope with stress can also boost your resilience.

To help manage your stress:

- ☐ Get enough sleep.
- ☐ Exercise regularly.
- ☐ Build a social support network.
- ☐ Set priorities.
- ☐ Show compassion for yourself.
- ☐ Try relaxation methods.
- ☐ Seek help.

GET QUALITY SLEEP

To fit in everything we want to do in our day, we often sacrifice sleep. But sleep affects both mental and physical health. It's vital to your well-being. When you're tired, you can't function at your best. Sleep helps you think more clearly, have quicker reflexes and focus better. Take steps to make sure you regularly get a good night's sleep.

To get better quality sleep:

- ☐ Go to bed and get up each day at the same time.
- ☐ Sleep in a dark, quiet place.
- ☐ Exercise daily.
- ☐ Limit the use of electronics.
- ☐ Relax before bedtime.
- ☐ Avoid alcohol before bedtime and stimulants like caffeine or nicotine.
- ☐ Consult a health care professional if you have ongoing sleep problems.

For other wellness topics, please visit **www.nih.gov/wellnesstoolkits**

NIH National Institutes of Health

continued on next page

Figure 32. The content of Emotional Wellness Toolkit, people can print the PDF by themselves

Case 7: Senior Talk

Nation *USA*

Time *2024-Until Now*

Finance
- ☑ *Profitable*
- ☐ *Non-Profitable*

Carrier
- ☑ *Online*
- ☐ *Offline*

Type
- ☐ *Social Practice*
- ☐ *Research Project*
- ☑ *Business Innovation*

Main Driver

Government Departments

Nonprofit Organisations

Individuals

Academic Institutions

Resource Input

Human Resource

Financial

Time

Space

Intervention Goals

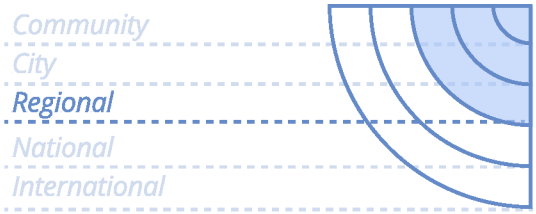
Environment

Health

Relationships

Economic

Awareness



SeniorTalk is an AI chatbot designed to provide companionship and support to older people. Its purpose is to provide companionship and support to older people who may be feeling lonely or isolated. It offers personalised conversations tailored to the user's interests and preferences, providing a safe space for open and judgement-free dialogue.

The core service content of Senior Talk revolves around providing intelligent dialogue companionship. It utilizes advanced natural language processing (NLP) technology, capable of understanding and responding to the daily conversations of elderly users and conducting personalized interactions. This means that AI can adjust its responses based on users' interests, hobbies, and even their past conversation history, making the conversation more attractive and relevant. In addition to daily chatting, Senior Talk can usually also provide information inquiry, reminder services (such as medication reminders, appointment reminders), as well as cognitive stimulation activities (such as telling stories, playing word games, etc.).

Although the application projects represented by Senior Talk have broad prospects, they still face many technological challenges. The primary

challenge is the depth and breadth of natural language processing. Despite significant technological advancements in artificial intelligence in recent years, AI still struggles to understand subtle emotions, satire, puns and cultural references in human conversations. This can result in stilted, unnatural conversations or an inability to truly understand the needs of the elderly. This affects the depth of the user experience and emotional connection. Secondly, personalisation and adaptability are lacking. The elderly group is obviously very diverse. Each person's life experiences, interests, hobbies and cognitive abilities differ greatly. Achieving high personalisation and continuously learning and adapting to dynamic user changes over the long term is a complex technical challenge for AI companions. Thirdly, data privacy and security are important issues that cannot be ignored. AI companions need to collect and process users' conversation data. Ensuring the security and privacy of this sensitive information, and preventing data leakage or abuse, is an ethical guideline and legal requirement that technology developers and operators must strictly adhere to. Furthermore, the ethical controversy surrounding emotional substitution cannot be ignored. Excessive reliance on AI companionship could weaken interaction between the elderly and real humans to some extent, triggering in-depth discussions about the nature of interpersonal relationships and social support systems.

Overall, however, Senior Talk has powerfully showed the great potential of artificial intelligence in comforting loneliness among the elderly, providing emotional support and cognitive stimulation, offering an innovative solution for non-contact companionship and psychological support, applying technology to more humanized fields, and creating well-being for the lives of the elderly.

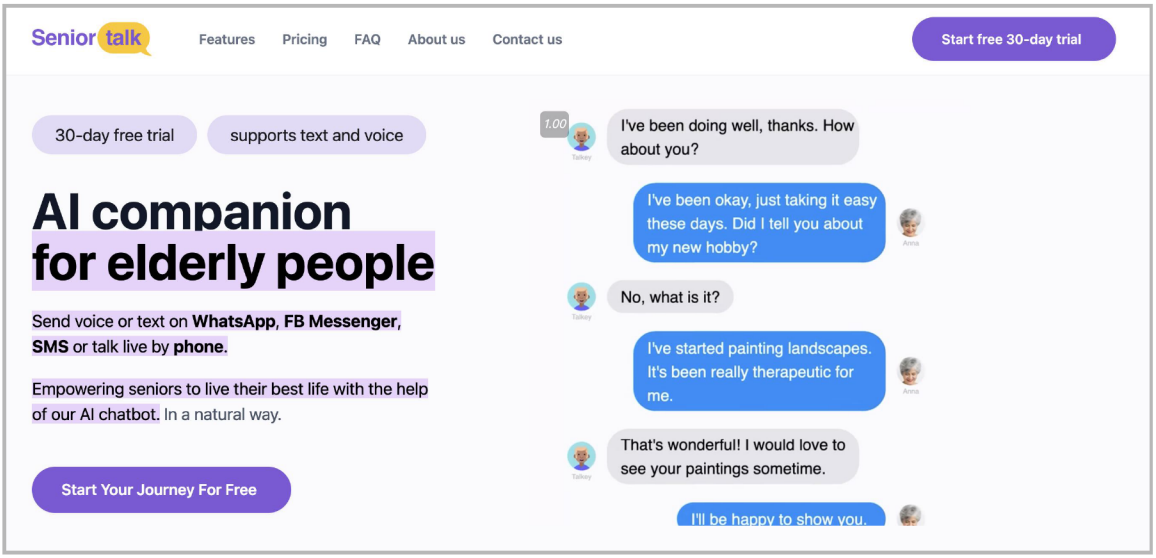


Figure 33. Homepage of the official website of Senior Talk

Case Associations

ElliQ (Intuition Robotics):

This is a social robot that uses conversational AI to engage older adults in daily activities, provide reminders, facilitate social interaction, and help reduce loneliness (ELLI-Q, n.d.)

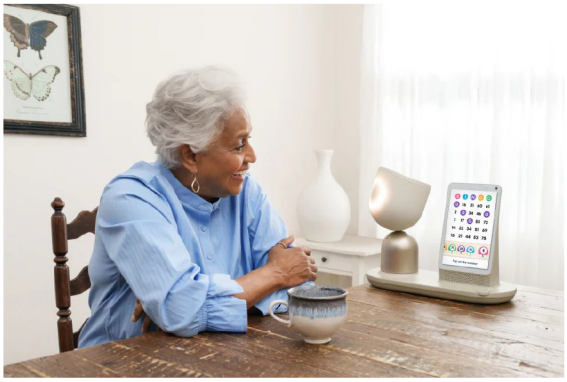


Figure 34. The application scenarios of ElliQ

Onorato AI:

An AI-powered assistant in the shape of a parrot designed to bring comfort and safety to older adults, focusing on combating loneliness and providing a handy assistant (Onorato, n.d.).

Figure 35. The application scenarios of Onorato

Geri (AI app):

Developed by high school students, this is another AI chat app designed to be a companion and conversational partner for seniors (GERI,n.d.).

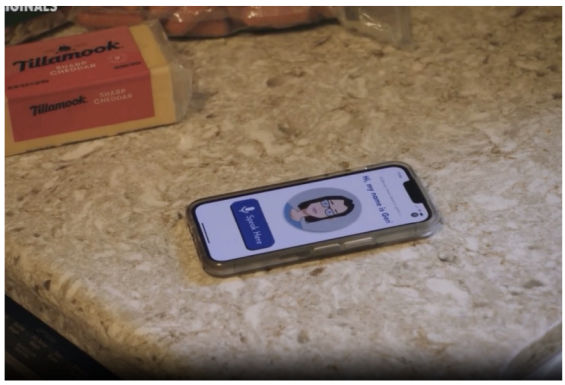
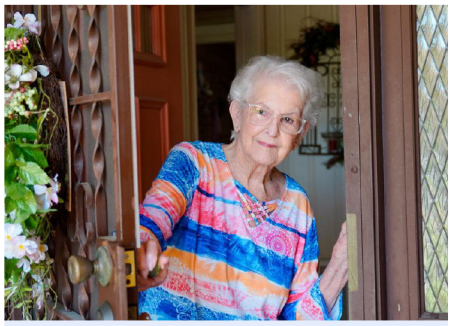


Figure 36. The feature of Geri

Case 8: Meals On Wheels America



Nation *USA*

Time *1974-Until Now*

Finance
- ☐ *Profitable*
- ☑ *Non-Profitable*

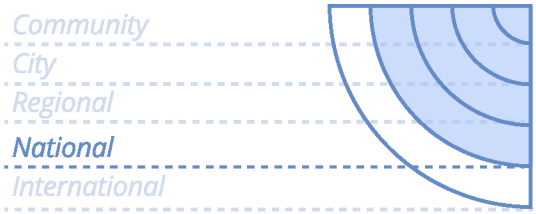
Carrier
- ☐ *Online*
- ☑ *Offline*

Type
- ☑ *Social Practice*
- ☐ *Research Project*
- ☐ *Business Innovation*

Main Driver
- *Government Departments*
- *Nonprofit Organisations*
- *Individuals*
- *Academic Institutions*

Resource Input
- *Human Resource*
- *Financial*
- *Time*
- *Space*

Intervention Goals
- *Environment*
- *Health*
- *Relationships*
- *Economic*
- *Awareness*



Meals on Wheels America is a nationally leading organisation that supports more than 5,000 local-level "meals-on-wheels" programs across the United States (Meals on Wheels America, n.d.). Its core mission is to address the growing issues of hunger and social isolation among older adults by providing nutritious meals alongside essential support services, thereby improving their health and quality of life and enabling them to age with dignity in their own homes.

Although the main service contents of Meals on Wheels America are diverse, its most distinctive and core service lies in providing door-to-door meal delivery services for the elderly who are unable to shop or prepare meals by themselves through its extensive national network. This seemingly simple service actually carries multiple functions and goes beyond merely providing nutrition. It is combined with various supportive programs, aiming to meet the comprehensive needs of the elderly rather than being limited to physical sustenance.

In terms of combating the loneliness and isolation of the elderly, the strategy of Meals on Wheels America mainly revolves around two major goals: "increasing interpersonal interaction in core services" and "expanding social connections".

In the core food delivery service, friendly visits have been elevated to the same level of importance as the food itself. When delivering food to elderly people, volunteers or staff members will have brief, sincere exchanges and greetings. For many elderly people who find it difficult to move around, live alone or have limited contact with the outside world, these few minutes of face-to-face interaction with others may be the only time they have in a day, or even several days. This regular interpersonal connection provides valuable social support for the elderly, effectively alleviating their feelings of loneliness and isolation. What's more, these visits also serve as Safety Checks. Volunteers can promptly detect emergency situations that the elderly may encounter, such as falls, physical discomfort, or environmental safety hazards. They can then activate the corresponding assistance mechanism, which further enhances the elderly's sense of security and protection.

In terms of "expanding social connections", Congregate Dining is another important practice that Meals on Wheels America actively advocates and supports. By setting up dining points in community centres, senior activity centres or other public places, the project encourages those elderly people who still have the ability to move out of their homes and share meals with their peers. This not only provides a balanced and nutritious meal, but more importantly, it creates a positive environment that promotes social interaction. The elderly can make new friends here, relive old friendships, participate in various group activities, and break the physical and psychological isolation brought by staying at home. Group meals can effectively build a sense of community belonging, making them feel that they are part of society rather than being marginalised.

In addition to these two core strategies, many local projects, with the support of Meals on Wheels America, will also carry out diversified expansion projects such as friendly phone calls, pet food assistance, and connecting with other community services, jointly weaving a social support network against loneliness among the elderly.

Figure 37. The statistical data of Meals on Wheels America (Meals on Wheels America, n.d.)

Meals on Wheels America's operating funds are composed of federal and state government funding, as well as private donations and contributions from participants. Meals on Wheels America's operating funds are composed of federal and state government funding, as well as private donations and contributions from participants. Among them, the financial support from the federal government is mainly distributed through the nutrition program of the Older Americans Act. This part of the funds is allocated layer by layer through the aging institutions of each state and eventually reaches the local Meals on Wheels service providers. Private donations, including charitable contributions from individuals, enterprises, and foundations, supplement their operating funds significantly.

Through public service design, Meals on Wheels America provides practical case studies showing how to effectively combat loneliness and isolation among the elderly. The organisation clearly demonstrates that when service design goes beyond satisfying basic needs and prioritises interpersonal interaction and social connection, the positive impact is profound and lasting. It has transformed the meal delivery service into a daily interpersonal connection and safety net, and actively built a sense of community belonging through collective meals and other means, effectively improving the quality of life and psychological well-being of the elderly. This people-oriented, multi-resource, integrated service model provides us with a practical and feasible direction and example for designing a more comprehensive elderly mental health support system at a community level in future.

Case 9: Silver Ways -Navigation System

Nation *Germany, Sweden, Turkey*

Time *2025*

Finance
- ☐ *Profitable*
- ☑ *Non-Profitable*

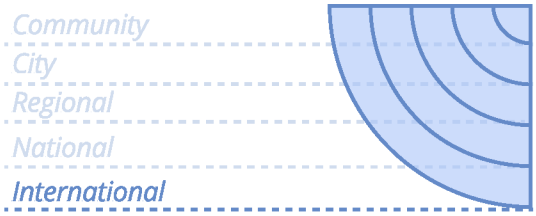
Carrier
- ☑ *Online*
- ☑ *Offline*

Type
- ☐ *Social Practice*
- ☑ *Research Project*
- ☐ *Business Innovation*

Main Driver
- *Government Departments*
- *Nonprofit Organisations*
- *Individuals*
- *Academic Institutions*

Resource Input
- *Human Resource*
- *Financial*
- *Time*
- *Space*

Intervention Goals
- *Environment*
- *Health*
- *Relationships*
- *Economic*
- *Awareness*



Silver Ways is an international research initiative jointly led by Heidelberg University in Germany and its affiliated Heidelberg Institute for Geoinformation Technology (HeiGIT), Uppsala University in Sweden, and Abdullah Gül University in Turkey (HEIGIT, 2025). The project's core mission is to enhance the urban mobility, accessibility, and ultimately the well-being and mental health of older adults by focusing on optimizing walkability within the framework of the "15-Minute City" concept (Silver Ways, n.d.).

The core service content of the Silver Ways project plan is to develop an age-friendly pedestrian navigation system and the construction of a Silver 15-Minute Neighbourhood Index.

The development of an age-friendly pedestrian navigation system challenges the traditional approach of simply providing the shortest route. It takes into account the specific challenges and preferences of the elderly, such as the need for flat roads, gentle slopes, plenty of rest areas, peaceful surroundings and attractive landscapes. By integrating advanced Geographic Information System (GIS) and artificial intelligence (AI) technologies and analysing street view images and open geographic data, the system can intelligently identify and recommend walking routes that are most

comfortable and safe for the elderly, consuming the least physical energy.

Based on this, the 'Silver 15-Minute Neighbourhood Index' quantifies how elderly-friendly urban areas are. It calculates the accessibility of basic services, such as medical care, shopping and parks, based on elderly-friendly walking routes. This allows it to judge whether an area meets the comfort, safety and convenience standards required by the elderly.

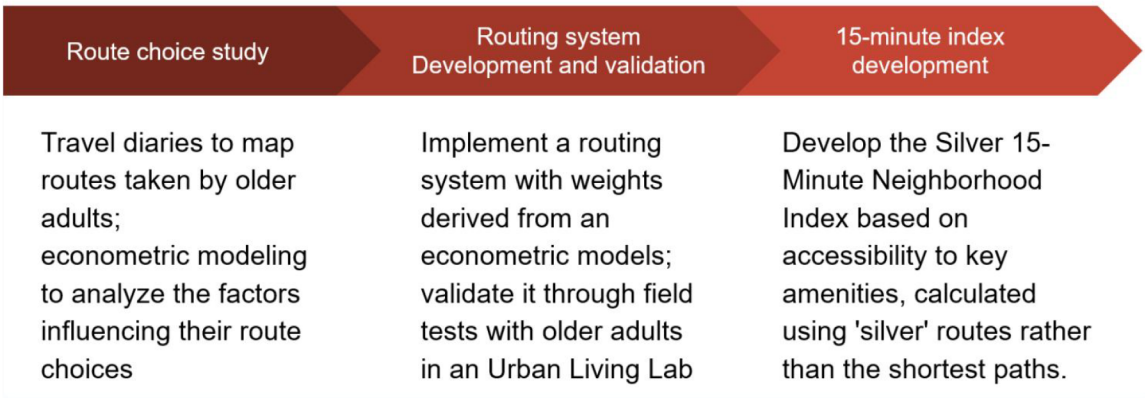
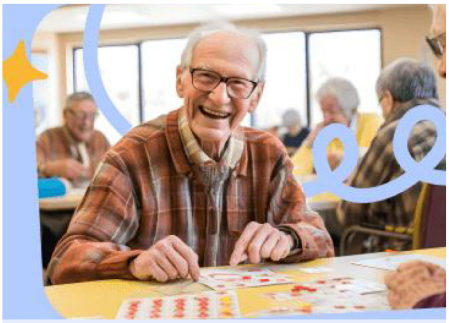


Figure 38. The research step-by-step research plan of Silver Ways

Silver Ways hopes to endow the elderly with greater independence through customized walking navigation, enabling them to move around the city more confidently and safely, and independently complete daily affairs such as shopping, seeing a doctor, and participating in social activities. Furthermore, by increasing outdoor activities, the physical and mental health and social participation of the elderly can be promoted. A more convenient and comfortable walking environment will directly encourage the elderly to increase their outdoor activities. This not only helps maintain physical functions and reduce the risk of chronic diseases such as cardiovascular diseases and diabetes, but also improves mood and alleviates depressive symptoms through sun exposure and exercise.

The Silver Ways project uses innovative technology to help the elderly remain independent and active, and to integrate them more deeply into community life. This improves their mental health and quality of life. At the same time, promote the government to make planning adjustments that better meet the actual needs of the elderly in terms of road design, infrastructure construction (such as adding rest seats, improving the quality of sidewalks, optimizing the duration of traffic lights, etc.) and public service layout, so as to build more resilient and adaptable urban communities. Although the project is still being implemented, its positive impact is highly anticipated.

Case 10: Golden Carers



Nation *Australia*

Time *2007-Until Now*

Finance
- ☑ *Profitable*
- ☐ *Non-Profitable*

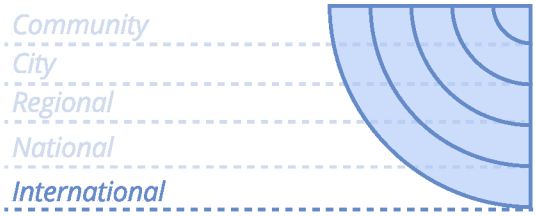
Carrier
- ☑ *Online*
- ☐ *Offline*

Type
- ☐ *Social Practice*
- ☐ *Research Project*
- ☑ *Business Innovation*

Main Driver
- *Government Departments*
- *Nonprofit Organisations*
- *Individuals*
- *Academic Institutions*

Resource Input
- *Human Resource*
- *Financial*
- *Time*
- *Space*

Intervention Goals
- *Environment*
- *Health*
- *Relationships*
- *Economic*
- *Awareness*



Golden Carers is an online membership-based resource platform dedicated to improving the quality of elderly care. Its mission is to provide rich, convenient and easy-to-implement activity concepts, practical tools and expertise for elderly care professionals worldwide (including activity coordinators, lifestyle managers, nursing home staff, home care workers) and even family caregivers. This platform is a family owned business operating since 2007 and based in Brisbane, Australia.

Golden Carers' core service focuses on providing a vast amount of immediately usable resources and support tools for activities with the elderly. The platform brings together thousands of detailed activity concepts covering fields such as art and handicrafts, music and singing, puzzles and quizzes, nostalgia therapy, physical exercise, sensory stimulation, cross-cultural communication and intergenerational interaction. These activity concepts are usually accompanied by detailed, step-by-step instructions and a list of required materials. They also include directly printable templates, quizzes and worksheets, which makes it much easier for caregivers to design and implement activities.

The service goal of the Golden Carers project is directly aimed at improving the quality of elderly care. In this process, it

significantly helps social workers and various front-line caregivers to carry out their work more effectively, thereby indirectly promoting the mental health of the elderly. For caregivers, this platform solves the problems of "what activities to do" and "how to do activities" that they often encounter in their daily work. By providing immediately available and diverse activity plans, it reduces the planning burden and time pressure on caregivers, enabling them to devote more energy to interacting with the elderly and personalized care.

As a commercial programme and membership platform, Golden Carers' primary source of funding comes from paid subscriptions. They offer various membership tiers, providing unlimited access to content and tools. While they may also generate revenue through advertising or partnerships, the core business model centres on subscriptions from individual caregivers or care facilities.

The case of Golden Carers enlightens us that in the design of public services for the mental health of the elderly in the community, in addition to services directly for the elderly, great importance should also be attached to the empowerment and support of the caregiver group (including professional caregivers and family caregivers). By providing convenient and rich activity resources and professional knowledge, the professional capabilities and work efficiency of caregivers have been greatly enhanced, indirectly but effectively improving the mental health status of the elderly and achieving a win-win situation for all stakeholders.

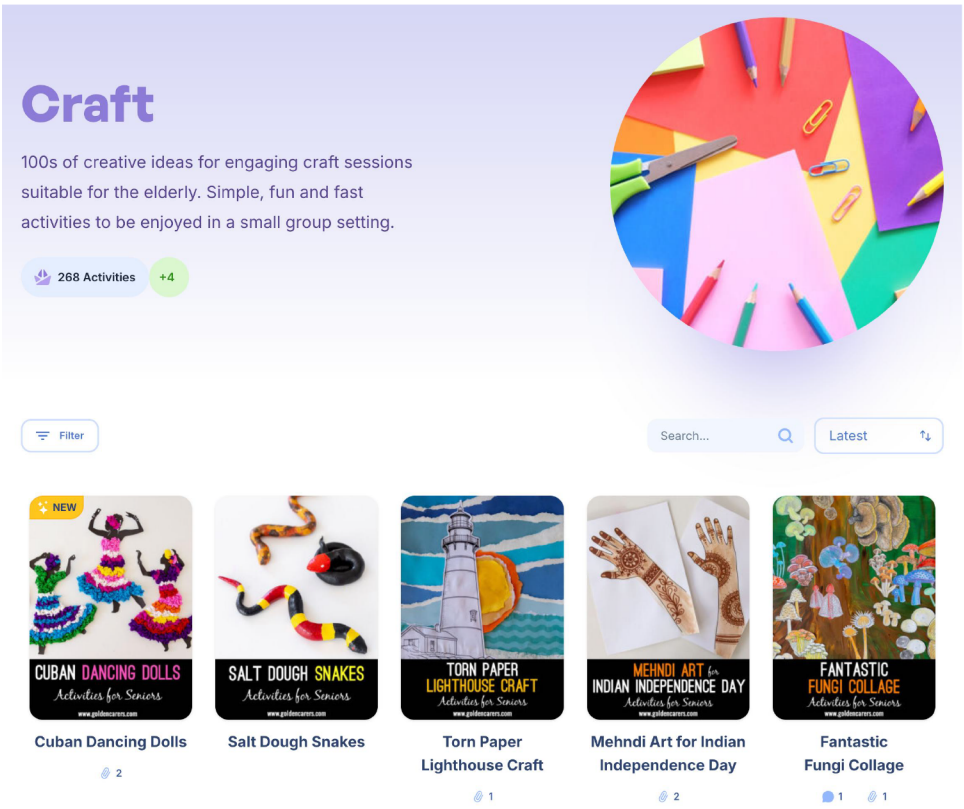


Figure 39. The webpage of golden carer's handicraft activities

Case 11: Create Arts

Nation *UK*

Time *2003-Until Now*

Finance
- ☐ *Profitable*
- ☑ *Non-Profitable*

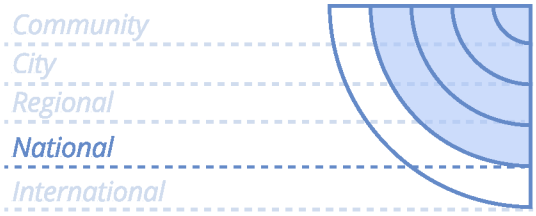
Carrier
- ☐ *Online*
- ☑ *Offline*

Type
- ☑ *Social Practice*
- ☐ *Research Project*
- ☐ *Business Innovation*

Main Driver
- *Government Departments*
- *Nonprofit Organisations*
- *Individuals*
- *Academic Institutions*

Resource Input
- *Human Resource*
- *Financial*
- *Time*
- *Space*

Intervention Goals
- *Environment*
- *Health*
- *Relationships*
- *Economic*
- *Awareness*



Create Arts was founded in July 2003. Its core mission is to empower life, reduce isolation and enhance well-being through creative arts. Create Arts works closely with other charities, day centres, care service providers, schools, hospitals, prisons and other local partners across the UK to jointly provide support for the most vulnerable and vulnerable groups in society (Create Arts, n.d.).

Create Arts' core services for elderly groups focus on providing creative art workshops and experiences led by professional artists. Its main projects include "art:links", a cross-art form project aimed at bringing together disadvantaged elderly people in day centres and care homes, promoting friendship, self-expression and creative release through art activities, thereby effectively reducing their sense of social isolation. Another important project is "creative:engagement", a multi-art form project that particularly focuses on elderly people with dementia and mental illness in the London area, aiming to improve their cognitive and emotional health through art intervention. These projects cover a variety of art forms, including music, dance, visual arts, drama and creative writing. This ensures that the activities are rich and diverse enough to meet the interests and needs of different

elderly people.

Create Arts' goal is to help people overcome the major challenges of old age: loneliness, helplessness and boredom. The institution offers meaningful opportunities for artistic engagement to reduce social isolation among the elderly and help them re-establish interpersonal connections. Meanwhile, art activities, as a unique form of intervention, can significantly improve the mental and physical health of the elderly, enhance their creative expression ability, skill level and self-esteem. For elderly people with cognitive impairments, such as dementia, art projects play a crucial role in alleviating distress, stimulating cognitive function and enhancing overall quality of life. They enable people to achieve physical and mental satisfaction in a supportive and inclusive environment.

Figure 40. The art group activities of Create Arts'

Case 12: Jia Ying Community Services

Nation *Singapore*

Time *2024*

Finance
- ☐ *Profitable*
- ☑ *Non-Profitable*

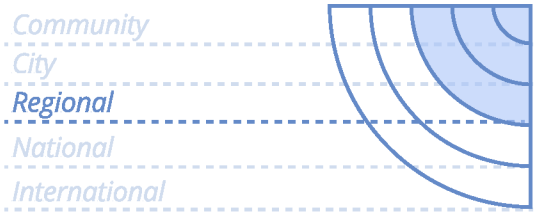
Carrier
- ☐ *Online*
- ☑ *Offline*

Type
- ☑ *Social Practice*
- ☐ *Research Project*
- ☐ *Business Innovation*

Main Driver
- *Government Departments*
- *Nonprofit Organisations*
- *Individuals*
- *Academic Institutions*

Resource Input
- *Human Resource*
- *Financial*
- *Time*
- *Space*

Intervention Goals
- *Environment*
- *Health*
- *Relationships*
- *Economic*
- *Awareness*



The Jia Ying Community Services Society (JYCSS) is a non-profit organisation in Singapore dedicated to community service. Officially registered as a charity in 2003, it is a full member of the National Council of Social Service (NCSS) and holds the status of an Institution of a Public Character (IPC) (Jia Ying Community Service society (Create Arts, n.d.).

Its core mission is to help, heal, and honor older people and their families in our communities through comprehensive support, recovery, and respect. Through the operation of the Active Senior Centre, JYCSS closely collaborates with numerous volunteers, partners, and social service organisations to jointly support the elderly in maintaining social connections, actively participating in physical activities, caring for each other, and continuously learning new knowledge. So far, it has provided services to over 4,000 elderly people.

Of the many active ageing projects for the elderly, Jiaying Community Service's "Capturing Memories through Digital Photography" project is a valuable addition to its mental health services for the elderly. This project is carried out through a series of digital photography workshops guided by professional photographers, aiming to teach the elderly various skills of mobile phone photography and encourage them to

create in the on-site environment. These outing activities not only give participants the opportunity to connect with their companions, but also allow them to explore new places.

This project is dedicated to providing the elderly with a unique channel for self-expression through digital photography, a creative medium, enabling them to present their inner feelings and memories in a way different from the traditional one. During the participation in the workshop, the elderly not only learned new photography skills, but more importantly, they had the opportunity to make friends, cultivate meaningful friendships, and create an atmosphere of mutual support among the participants. This kind of social interaction greatly alleviated the common problems of loneliness and social isolation among the elderly.

In addition, the project helps the elderly to overcome their fear of and unfamiliarity with new technologies. It does this by guiding them to get in touch with and master digital technologies. This allows them to discover new interests and gain confidence in the digital age, enabling them to actively participate in digital society. The elderly are more confident in learning new digital skills. (Digital For Life, 2024).

By jointly holding digital skills training programmes with the community, the Jia Ying Community Service Society has promoted the cognitive health, social connectivity and emotional health of the elderly in an attractive and participatory way.

Figure 41. Participants immersed themselves in the digital photography workshop

5.4 Evaluation Of The Opportunities

This study will use the Selection Matrix tool for systemic design to evaluate and select design opportunities, identifying those with high potential and prioritising resource investment. Each opportunity will be scored quantitatively from multiple dimensions in the assessment. Combined with weighted methods, this ensures that more influential and urgent opportunities receive more attention, thereby providing a basis for subsequent system construction strategies.

The assessment of opportunities is based on a total of 6 main dimensions, each of which is subdivided into multiple sub-dimensions, for a total of 19. The scoring range for each sub-dimension is 0 to 5 points, where a score of 0 indicates that the dimension is not included in the scoring. To reflect the importance of different dimensions,

Table 4. The assessment dimensions and descriptions of each sub-dimension

Main Dimension				
Coping With Challenges: Capability To Solve Core Problems				
Sub-Dimension	*Ability To Address Existing System Issues*	*Ability To Address User Pain Points*	*Severity Of Pain Points*	
Description	*The Total Score Based On The Strength Of The Relationship: 2 Points For A Primary Connection, 1 Point For A Secondary Connection, And 0.5 Points For A Potential Connection.*	*2 Points For A Primary Connection, 1 Point For A Secondary Connection, And 0.5 Points For A Potential Connection. The Total Score Is The Sum Of These Values.*	*This Refers To The Severity Of Pain Points Primarily Associated With An Opportunity.*	
Weight	*X 3*	*X 2*	*X 2*	
Resource Investment: Human, Material, And Financial Costs Required				
Sub-Dimension	*Human Resources*	*Financial Investment*	*Time Investment*	*Spatial Resources*
Description	*Evaluates The Cost Of Human Resource Input Required To Implement The Solution, Based On Both The Number Of Personnel And Duration Of Involvement.*	*Refers To The Monetary Cost Required To Implement The Solution.*	*Refers To The Time Needed For Implementation, Including The Time Required To Construct Physical Infrastructure And Develop System Functionalities.*	*Refers To The Spatial Cost Involved In Implementing The Solution, Such As Occupation Of Public Spaces Or Facilities.*
Weight	*X 3*	*X 1*	*X 1*	*X 1*

Human-Centreed：Acceptance By Stakeholders			
Sub-Dimension	*Practitioner Attitude*	*Acceptance By Older Adults*	*Family Attitude*
Description	*A Comprehensive Score Is Assigned Based On Practitioners' Level Of Interest And Their Perceived Feasibility Of Implementing The Opportunity.*	*Evaluates How Receptive Older Adults Are To The Proposed Intervention, Taking Into Account Learning Costs And The Potential Disruption To Their Existing Knowledge Systems.*	*Assesses The Extent To Which Family Members Support The Initiative And Whether They Have Any Reservations Or Concerns.*
Weight	*X 1*	*X 2*	*X 1*
System Vitality: Long-Term Sustainability			
Sub-Dimension	*Act-Locally*	*Transferability*	*Autopoiesis*
Description	*Assess Whether Institutions And Service Resources Within Jing'an District Can Support The Implementation And Ongoing Operation Of The Proposed Plan.*	*Evaluates The Extent To Which The Solution Can Be Transferred To Other Contexts, Including The Level Of Difficulty In Adapting Or Replicating Its Implementation.*	*Measures The System's Ability To Operate Autonomously Without Relying On Continuous External Inputs Of Resources Or Management.*
Weight	*X 3*	*X 1*	*X 2*
System Influence: Scope And Speed Of Systemic Impact			
Sub-Dimension	*Disruption To The Existing System*	*Scope Of Influence*	*Speed Of Impact*
Description	*Examines Whether The Implementation Of The Strategy Will Significantly Change Operational Models Or Affect Existing Stakeholder.*	*Assesses The Geographic Coverage, Number Of People Affected, And The Range Of Stakeholders Reached By The Solution Unit.*	*Refers To How Quickly The Solution Can Achieve Its Intended Objectives And Demonstrate Preliminary Results.*
Weight	*X 1*	*X 1*	*X 1*
Feasibility: Technical And Implementation Difficulty			
Sub-Dimension	*Technical Feasibility*	*Evidence-Based Effectiveness*	*Service Accessibility*
Description	*Assesses The Technical Viability Of The Proposed Solution Based On Case Studies And Precedent Technologies.*	*Evaluates Whether The Solution Has Been Validated As Effective Through Previous Cases, And Examines The Level Of Demonstrated Impact.*	*Refers To The Channels Through Which The Service Can Be Accessed, The Convenience Of Access, And Whether Multi-Channel Service Delivery Is Supported.*
Weight	*X 2*	*X 2*	*X 1*

the sub-dimensions are weighted by 1 to 3 times based on the feedback from the target users and stakeholders.

To evaluate the balance of opportunities more comprehensively when calculating the results, the total score (the sum of the weighted scores of all the sub-dimensions involved in the evaluation), the average score (the total score divided by the number of sub-dimensions involved in the evaluation) and the scores of the main dimensions (the total scores obtained on the six main dimensions respectively) are all taken into consideration. The scores of the six main dimensions are calculated to analyze the performance of opportunities in different dimensions. If there is an opportunity that performs moderately in both the total score and the average score but stands out in a certain main dimension, it can also be considered to include it in the alternative strategies for the next step of system design.

Through the evaluation of all opportunities, 7 opportunities with a total score of over 90 and an average score of 5.2 or above were selected. These opportunities will serve as the main components of the system design plan.

In addition, 4 opportunities with an average score of 5.0 or above, or with at least one sub-dimension in the top two rankings, are selected as alternative solutions. Although these opportunities have a slightly lower total score, they offer significant advantages in specific areas and can be used to supplement or optimise the system design, enhancing the balance of the service system in meeting different requirements.

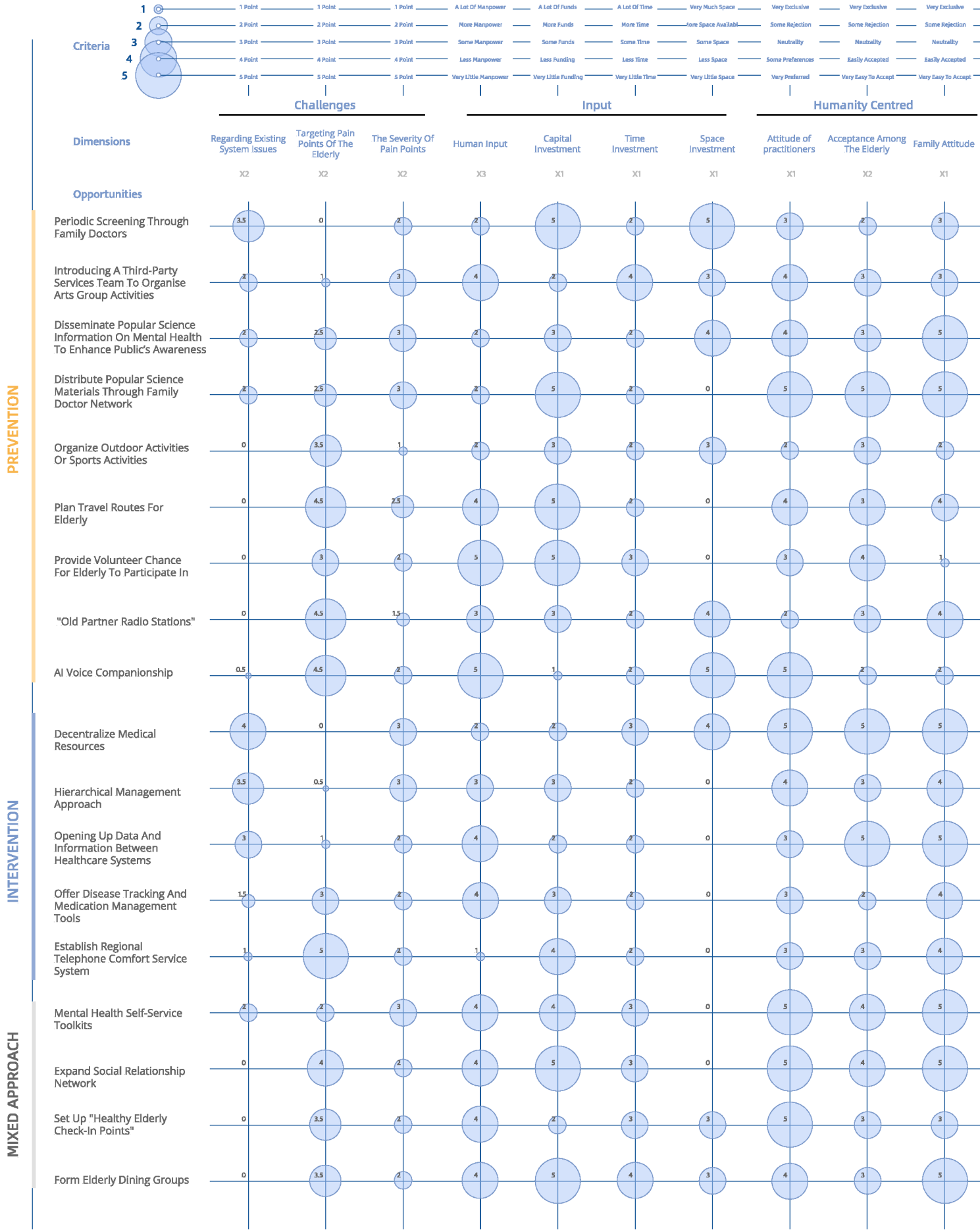
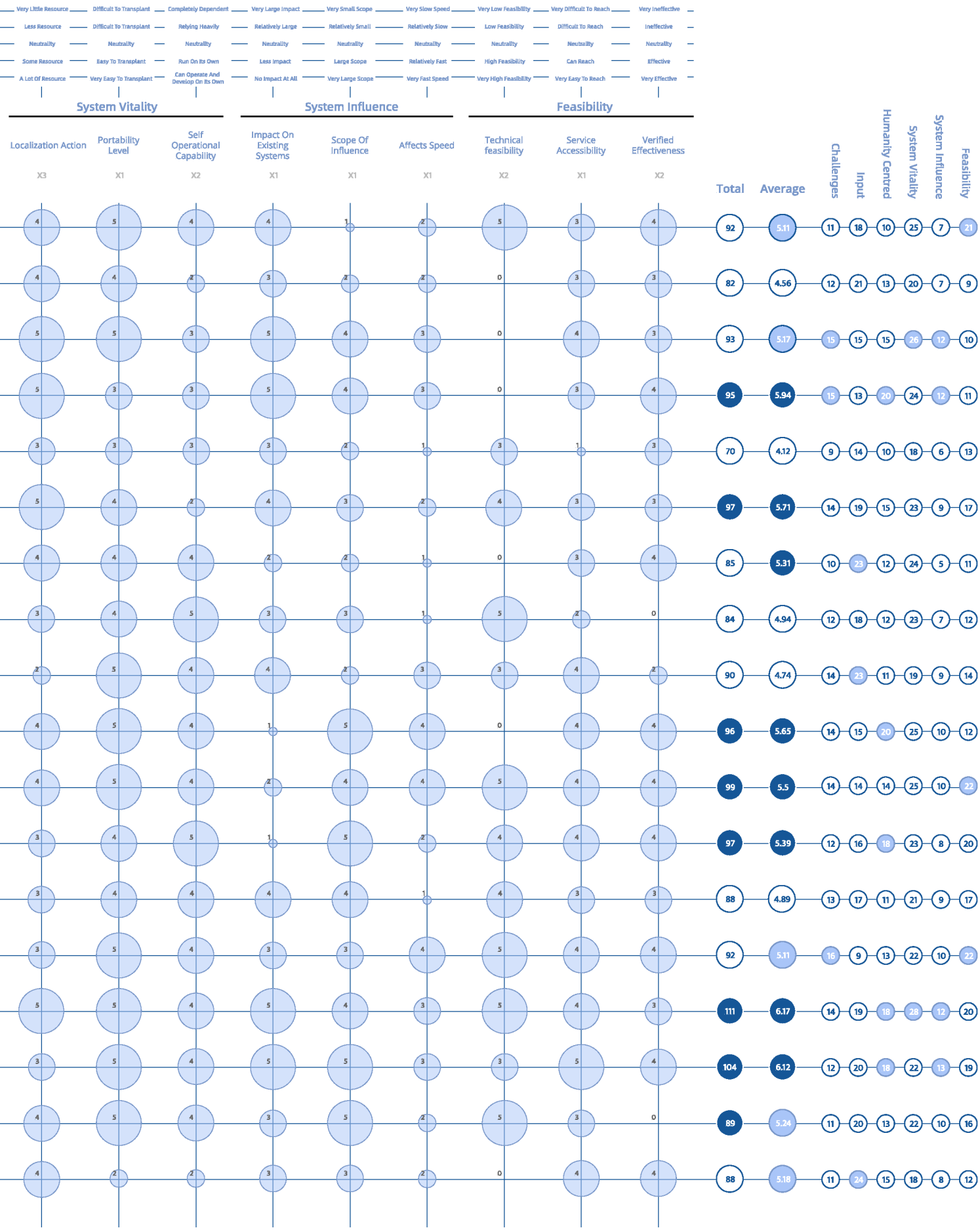


Figure 42. The selection Matrix of this project to evaluate opportunities


Very Little Resource
Less Resource
Neutrality
Some Resource
A Lot Of Resource
Difficult To Transplant
Difficult To Transplant
Neutrality
Easy To Transplant
Very Easy To Transplant
Completely Dependent
Relying Heavily
Neutrality
Run On Its Own
Can Operate And Develop On Its Own
Very Large Impact
Relatively Large
Neutrality
Less Impact
No Impact At All
Very Small Scope
Relatively Small
Neutrality
Large Scope
Very Large Scope
Very Slow Speed
Relatively Slow
Neutrality
Relatively Fast
Very Fast Speed
Very Low Feasibility
Low Feasibility
Neutrality
High Feasibility
Very High Feasibility
Very Difficult To Reach
Difficult To Reach
Neutrality
Can Reach
Very Easy To Reach
Very Ineffective
Ineffective
Neutrality
Effective
Very Effective
System Vitality
System Influence
Feasibility
Localization Action
X3
Portability Level
X1
Self Operational Capability
X2
Impact On Existing Systems
X1
Scope Of Influence
X1
Affects Speed
X1
Technical feasibility
X2
Service Accessibility
X1
Verified Effectiveness
X2
Total
Average
Challenges
Input
Humanity Centred
System Vitality
System Influence
Feasibility
4 5 4 4 1 2 5 3 4 92 5.11 11 18 10 25 7 21
4 4 2 3 2 2 0 3 3 82 4.56 12 21 13 20 7 9
5 5 3 5 4 3 0 4 3 93 5.17 15 15 15 26 12 10
5 3 3 5 4 3 0 3 4 95 5.94 15 13 20 24 12 11
3 3 3 3 2 1 3 1 3 70 4.12 9 14 10 18 6 13
5 4 2 4 3 2 4 3 3 97 5.71 14 19 15 23 9 17
4 4 4 2 2 1 0 3 4 85 5.31 10 23 12 24 5 11
3 4 5 3 3 1 5 2 0 84 4.94 12 18 12 23 7 12
2 5 4 4 2 3 3 4 2 90 4.74 14 23 11 19 9 14
4 5 4 1 5 4 0 4 4 96 5.65 14 15 20 25 10 12
4 5 4 2 4 4 5 4 4 99 5.5 14 14 14 25 10 22
3 4 5 1 5 2 4 4 4 97 5.39 12 16 18 23 8 20
3 4 4 4 4 1 4 3 3 88 4.89 13 17 11 21 9 17
3 5 4 3 3 4 5 4 4 92 5.11 16 9 13 22 10 22
5 5 4 5 4 3 5 4 3 111 6.17 14 19 18 28 12 20
3 5 4 5 5 3 3 5 4 104 6.12 12 20 18 22 13 19
4 5 4 3 5 2 5 3 0 89 5.24 11 20 13 22 10 16
4 2 2 3 3 2 0 4 4 88 5.18 11 24 15 18 8 12

CHAPTER 06

Systemic Project

When designing a systemic programme, this study will adhere to the core principle of human-centreed design. This will ensure that the actual needs of the elderly group are focused on and responded to, while taking into account their physiological characteristics, thought processes and behavioural habits. At the same time, emphasis is placed on the relationships among systems, with the complementary roles of stakeholders such as government departments, community organisations, medical service institutions, and community members being highlighted in order to form a sustainable mental health support ecosystem. Furthermore, this plan will also be based on the local practice, giving priority to integrating the existing resources within the region, thereby enhancing the accessibility and cultural adaptability of services while reducing operating costs.

These principles will jointly form a framework for a design scheme that combines humanistic care, systematic linkage and local feasibility.

6.1 Design Goals And Strategies

Based on the above research and systemic analysis, the objective of this study is to develop a multi-level community support system for elderly people living alone, integrating both formal and informal social support networks to promote their mental health. Formal social support refers to institutional systems such as the public healthcare and community service systems—specifically community health service centres, family doctors, and community committees. Informal social support, on the other hand, mobilizes interpersonal networks including friends and neighbors, fostering new connections within the comfort zone of social interaction. It explores new connections within the social comfort zone and supplements formal social support by strengthening emotional bonds and mutual assistance mechanisms within the community.

This study's service system design will consist of two subsystems: a user system for elderly community members and a management system for community staff. The aim is to build a sustainable community

mental health service ecosystem by integrating multiple resources. The overall design objective is to mobilize all stakeholders, establish an effective connection between demand and supply, ensure that service recipients, service providers and related stakeholders can all obtain corresponding social benefits and returns, and promote the long-term operation and sustainable development of the system.

From a subsystem perspective, the user system aims to comprehensively improve the mental health of elderly community members, focusing on core issues such as a lack of spiritual companionship and fragile social support networks. By providing services such as emotional support, social activities and psychological intervention, the "need for love and belonging" and "need for respect" of the elderly group in Maslow's hierarchy of needs theory are met, enhancing their sense of social integration and self-worth recognition. The management system's objective is to optimise resource allocation and work processes, enhance service efficiency through information technology, achieve precise resource matching and scheduling, and reduce service providers' workload.

Based on the previous research and analysis, this study proposes seven key design strategies to effectively respond to the design goals of the service system and each subsystem.

The strategies for the system goals are as follows:

(1) Integrate existing resources and establish a new collaborative network

In the design of the management system, the following strategies will be adopted:

(2) Adopt a stepped management model, with a focus on caring for high-risk group

(3) Create resident files and achieve multi-data system linkage

In the design of the user system, the following strategies will be utilized to construct a community service plan for the elderly:

(4) Help the elderly establish and expand their social support networks

(5) Promote positive living habits and social interaction among the elderly

(6) Use the power of peer support to create mutual assistance relationships among the elderly

(7) Integrate digital and physical touchpoints to combine online and offline scenarios

The following text will explain each of these design strategies one by one:

(1) Integrate existing resources and establish a new collaborative network

Jing 'an District has an abundance of public green spaces, cultural attractions and health facilities, which can provide a variety of venues and services for the elderly. Moreover, Jing 'an District has a well-developed tertiary industry, abundant resources of enterprises and social organisations, diverse retail formats, and a well-developed transportation network, which provides potential support for expanding the activity range of the elderly. Leveraging the transportation network to enhance the accessibility of services on a larger scale is advisable.

During the design of the service system, invoking the existing resources in Jing'an District can reduce the impact on the existing system. Compared to building new service facilities or making large-scale investments in human and material resources, integrating existing resources can optimise services at a lower cost and improve resource utilisation efficiency. By establishing a new collaborative network to connect more stakeholders, multiple forces such as enterprises, social organisations, communities, and small and medium-sized merchants can be mobilized to participate together, forming a synergy effect. During the cooperation process, benefits can also be created for stakeholders. This strategy can respond to the needs of elderly people living alone and provide an innovative approach to the sustainable development of community public services.

(2) Adopt a stepped management model, with a focus on caring for high-risk group

Starting from the demands of service providers and given the limited availability of human resources, the use of a stepped management model can help service providers to identify key contradictions and allocate resources more effectively. It can also be used to comprehensively assess the risk level of elderly residents based on multiple influencing factors (such as health conditions, age and living habits). When the status of elderly residents changes, the risk level should be adjusted dynamically to better support the work of community service providers and achieve precise service provision.

(3) Create resident files and achieve multi-data system linkage

Through the research on the influencing factors of mental health among the elderly, it can be known that the influencing factors of mental health are diverse, including not only physical health conditions but also multi-dimensional factors such as age, economic status, social support, and

participation in activities. In order to enhance the mental health of the elderly population, it is necessary to improve their overall quality of life and sense of happiness. However, improvement in just one area is insufficient to achieve this goal.

Therefore, this study proposes a strategy for establishing resident profiles, aiming to construct a complete resident profile by integrating life and health data from multiple systems, and comprehensively assess the risk factors for their mental health. A well-developed resident profile can enable grassroots workers to understand the needs of the elderly more comprehensively and meet their individual demands. Secondly, interaction between multiple data systems can enable risk levels to be tracked dynamically through algorithms. For example, combining health conditions and activity frequencies can automatically identify potential risks and issue early warnings, thereby enhancing the timeliness and effectiveness of services. In addition, establishing resident files and maintaining continuous records and tracking can also lay the foundation for achieving full life-cycle health management in the future. These accumulated user behaviour data can also provide an important research basis for future research and analysis in the public service field.

(4) Help the elderly establish and expand their social support networks

Through the preliminary research, the main pain points of the elderly can be identified: Firstly, their life trajectories are fixed and simple, which makes it difficult for them to make new friends and narrows their social circles. Secondly, a lack of connection with the community means that some elderly people seldom participate in community activities and have few opportunities to interact with others. Those who have lived alone for a long time are particularly vulnerable to loneliness, which affects their mental health and requires special attention.

Literature research shows that social support is the core factor affecting the mental health of the elderly. A stable and extensive social support network has a significant positive moderating effect on mental health. Therefore, the service system will adopt multi-level strategies to help the elderly expand their social circles and enhance community participation. Methods such as community activities, psychological companionship services and peer support will be introduced to encourage the elderly to establish their own social networks and provide them with necessary social support.

(5) Promote positive living habits and social interaction among the elderly

Through the previous research, it was found that the elderly group in the community generally has the characteristic of lacking interest activities, resulting in a monotonous daily life content and difficulty in maintaining a healthy living state. Insufficient participation in outdoor activities and limited activity areas also restrict their opportunities for social interaction. Guiding the elderly to cultivate positive interests and hobbies, increasing the frequency of communication and activities, and forming more diverse and healthy living habits will enhance their sense of happiness and help prevent psychological problems.

(6) Use the power of peer support to create mutual assistance relationships among the elderly

From the perspective of service providers, such as family doctors and community committee staff, grassroots working teams are understaffed, making it difficult to meet the growing needs of this group. Secondly, as the population ages, more and more elderly people are choosing to age at home in the community, making the imbalance between service resource supply and demand more prominent. Against this background, activating the mutual assistance potential within the elderly group has become an important way to relieve service pressure and improve efficiency.

Adopting the strategy of peer support has several major advantages: Firstly, it is easier for the elderly to connect with each other. Similar life experiences and close age groups facilitate communication and the formation of deep friendships and trusting relationships among the elderly. Secondly, it can relieve the pressure on grassroots workers. By encouraging the elderly to participate in mutual assistance services, grassroots teams' workload can be reduced, while providing more opportunities for social participation for the elderly. Thirdly, it can help the elderly to enhance their sense of identity and achievement. Many elderly people hope to realise their self-worth by participating in social work. Mutual assistance relationships can meet this need and enhance their sense of social belonging, creating a positive cycle.

(7) Integrate digital and physical touchpoints to combine online and offline scenarios

The aim of this design is to integrate technical means with the physical environment in an organic way, connect online and offline scenarios, and enhance service continuity. The specific implementation methods include two aspects: Firstly, smart hardware can be used to provide emotional companionship for elderly people living alone at home. Secondly, interactive devices such as community activity check-in points

can be set up outdoors. By sensing the activity frequency of elderly people and coordinating with the community staff management system, the risk level can be automatically assessed to provide timely support and intervention when necessary.

Moreover, on-site research results show that acceptance of digital services by the elderly population in Jing'an District exceeds expectations, creating favourable basic conditions for implementing the strategy. As digital technology becomes more widely available, the elderly are becoming more willing and able to use new technologies, making the promotion of digital services in the community feasible.

The main advantage of this strategy is that it can significantly optimise service efficiency and accuracy by leveraging technical means such as big data analysis and artificial intelligence algorithms. Integrating online and offline services enhances the depth and breadth of service coverage. This meets the needs of the elderly for home life and encourages their active participation in outdoor activities. Furthermore, compared to fully online services, interaction in offline scenarios is more experiential and helps to reduce the elderly's reluctance to adopt technology.

6.2 Development Suggestions

6.2.1 Establish An Integrated Psychological Comfort Service Platform For Elderly

This strategy proposes the development of a mobile application–based integrated service platform aimed at enhancing elderly individuals' engagement in outdoor activities, providing avenues for expanding their social networks, and encouraging participation in community services. The platform consists of the following functional modules:

- **Group Dining:** This module aggregates menu information from various community canteens, helping older adults select dining venues according to their preferences. It also facilitates group dining activities to enhance their daily social interactions.
- **Telephone Comfort Service:** Elderly users are matched with emotional support companions via the online platform, who provide telephone support and companionship to reduce feelings of loneliness.
- **Travel Route Recommend:** This module integrates with offline 'check-in' mechanisms to offer elderly-friendly outdoor activity routes. It also collaborates with local businesses to launch 'check-in for discounts' campaigns, incentivising outdoor participation.
- **Volunteer Recruitment:** This feature allows elderly individuals to participate in community volunteer services, such as registering as telephone comfort service volunteers or leading communal dining events.
- **Wellbeing Points System:** Participants earn points by taking part in different activities, which can then be exchanged for everyday items or agricultural products. This incentive system encourages active participation in community life.
- **Care Mailbox:** This provides an anonymous channel for reporting on the well-being of other community residents, enabling neighbours to collectively monitor and support each elderly person living within the community.

Each functional module has a different focus and corresponds to the needs of different user groups, as represented by various user portraits. For instance, the primary objective of the 'community canteen' feature is to utilise community spaces to enhance social interaction among elderly residents, particularly those living alone and with limited social engagement. The 'Volunteer Activity Recruitment' function, on the other hand, is aimed at elderly people who are eager to participate in social affairs and gain a sense of self-actualisation through social participation.

Scenario Of Group Dining
User's Level

Figure 43. The story board of Group Dining.

Scenario Of Travel Route Recommend User's Level

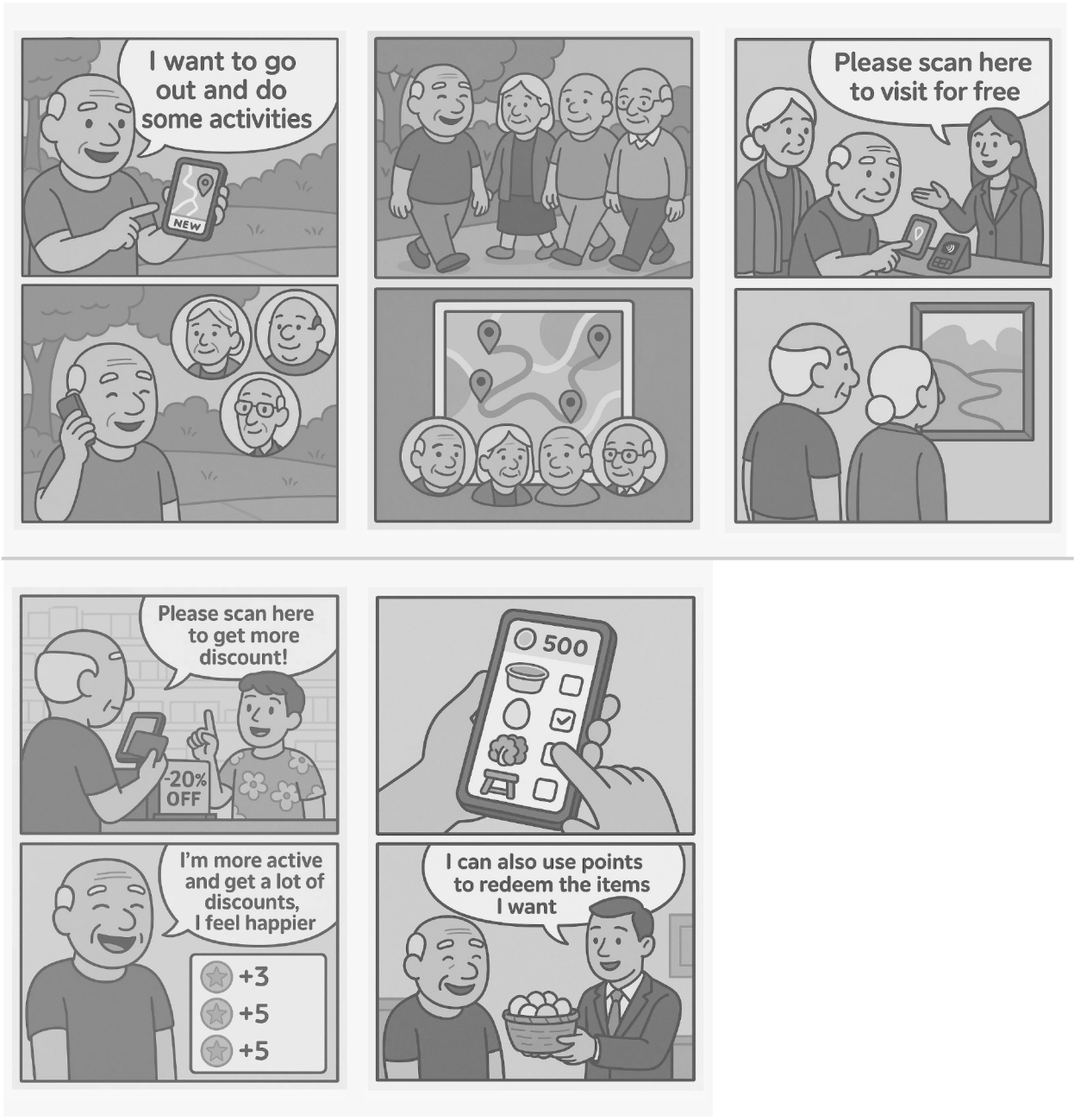


Figure 44. The story board of Travel Route Recommend

Scenario Of Care Mailbox User's Level

Figure 45. The story board of community care mailbox

This function will be linked to the 'Message Centre:' feature within the community management system. Community residents can use the Care Mailbox to report information about their neighbours to the community committee, and to promptly inform the committee of any changes in the lives of elderly people in their area. Elderly people can also report any concerns they have about their neighbours' health through the care mailbox. Community workers will visit the elderly person in question to verify the information.

6.2.2 Develop Smart Hardware To Connect Online And Offline Scenes

Leveraging artificial intelligence and Internet of Things (IoT) technologies, smart terminals designed for home and travel scenarios are developed to connect online and offline environments, enhancing service continuity.

AI smart speakers are designed for home use. They connect to a psychological comfort application on a mobile phone via home Wi-Fi. Using the user's file information and historical operation records, they can hold personalised conversations and chats with the user. The voice companionship function of AI can, to a certain extent, meet the emotional needs of elderly people living alone who have difficulty travelling and spend a lot of time at home.

Meanwhile, when the system detects an increase in the user's risk level, the AI voice assistant can switch to a more proactive chat strategy, proactively recommending outdoor and community activities that the user might be interested in. Combined with the health knowledge corpus, it can provide some methods for the elderly to improve their emotional level. Through the call function of the voice assistant, the elderly can also quickly contact the paired community workers by giving voice commands when they need emergency assistance.

The IoT terminal, which is designed for travel scenarios, will serve as an offline touchpoint for the online 'route recommendation' service system. This will provide offline merchants and elderly users with greater convenience. For example, merchants that have agreed to cooperate with the government can set up Internet of Things (IoT) terminals in their business premises. Based on their marketing strategies, they can then offer preferential activities to the elderly and display advertisements on the IoT terminals. When elderly users arrive at a merchant's offline space, they can unlock exclusive discounts by scanning their face and their mobile phone's NFC. At the same time, the system will match the users' personal information and distribute activity points to their corresponding platform accounts, increasing their activity value. This interaction between online and offline scenarios encourages elderly residents in the surrounding areas to participate in social activities and go out more. This hardware will be equipped with a small display screen. Merchants can upload advertisements to the interface themselves. Personalised promotional activities can be released to encourage participation among the elderly, or the advertising space can be rented out to other enterprises to generate advertising revenue. This check-in terminal will help surrounding merchants implement personalised operating strategies, enrich marketing models and profit channels, and achieve mutual benefit and win-win results while helping to expand the public service network.

6.2.3 Establish A Mental Health Risk Rating System For The Elderly

The conclusion of the literature review points out that the influencing factors of the mental health of the elderly are diverse. Factors such as health status, living status, social situation, and economic situation work together to have a comprehensive impact on mental health. Therefore, when assessing the mental health risk of an individual, a multi-dimensional comprehensive assessment system can be established. The mental health conditions of the elderly are classified into four risk levels: no risk, low risk, medium risk and high risk.

Elderly individuals classified as 'no risk' are those who are generally in good health, have high mental health screening scores, and frequently interact socially and participate in activities. For this group, no additional intervention beyond regular health screening at appropriate intervals is needed.

Those identified as 'low risk' may score within the normal range on mental health screenings, but they may also exhibit adverse conditions that negatively impact their mental health. These conditions include living alone, suffering from multiple chronic illnesses, and experiencing strained family relationships.

'Medium risk' refers to elderly individuals who have low mental health screening scores and demonstrate poor psychological well-being, coupled with life circumstances that are unfavourable to mental health. This category also includes individuals who have been clinically diagnosed with a mental health condition, are undergoing treatment and whose condition is stable.

'High risk' individuals are those whose psychological state is significantly poor and who have recently experienced major life disruptions, such as the loss of a loved one, becoming a widow or widower, or being diagnosed with a serious illness. This group also includes individuals who have recently been diagnosed and have begun treatment. Timely community intervention and companionship can significantly reduce the likelihood of mental illness in such cases, playing a critical role in upstream prevention.

Given the current shortage of human resources at the grassroots level in Jing 'an District, giving priority to high-risk groups as the allocation targets of public service resources while taking into account medium and low-risk groups can better allocate public service resources and improve the efficiency of problem-solving.

6.2.4 Establish The Mental Health Dynamic Management Platform

This study proposes the development of a Mental Health Dynamic Management Platform aimed at supporting service providers in the daily management of elderly mental health. This platform serves as a foundational back-end system for implementing stratified mental health management among elderly residents.

At the core of this platform are the profiles of elderly residents (resident files), which are populated with cross-system information synchronisation and manual updates by staff. The profile covers four areas of the elderly residents' lives: basic information, activity records, health records and life records. The residents' activity data will be linked to the mental health risk classification system to provide a comprehensive assessment of their mental health risk levels.

All high-risk factors can be incorporated into the resident profile in the form of 'tags'. By combining and screening these tags, residents with similar characteristics in the community can be grouped together. This allows grassroots workers to address the specific needs of particular subgroups more effectively.

In addition, the dynamic management system is divided into multiple functional modules:

- **Dashboard :** According to the role and jurisdiction of the service personnel, it automatically matches work tasks and displays an overview of the community to help service providers quickly understand the situation in their area.
- **Resident Management:** Supports querying and managing resident files by residential area or risk level. These digital files include basic information, activity records, health records and living records, providing service providers with a comprehensive reference basis.
- **Message Centre:** It offers a quick display function for paired elderly people and a community care mailbox. This facilitates daily communication between service providers and elderly residents, enabling a timely understanding of changes in residents' lives.
- **Profile:** This allows the service provider to select their job role and update their personal information.

6.2.5 Optimizing The Allocation Of Medical Resources And Information Flow

In terms of medical institutions and organisations, two changes need to be made:

Firstly, medical resources must be made more widely available. This involves decentralising the mental health specialist resources of municipal hospitals and transferring them to community health service centres. Expert clinics are also arranged regularly (such as expert consultations once a week) to provide family doctors with a convenient referral basis.

This measure shortens the referral chain, enhances acceptance among the elderly and reduces loss of patients during the referral process, enabling the elderly to receive professional mental health services more promptly. Secondly, mental health counselling and treatment should be conducted in a familiar community environment to provide patients with a sense of security and help alleviate their anxiety and prejudice.

Secondly, medical institutions should integrate their databases of medical visits. This measure could provide the basic resources needed for all medical collaboration frameworks. Once visit records from municipal medical institutions, community health service centres, and the family doctor system are connected, social health doctors can directly view the initial diagnosis records of family doctors when family doctors refer the elderly to community health service centres. Likewise, when community doctors refer the elderly to specialised hospitals, the specialised doctors can directly access the community health service centre's medical records.

For patients, integrating this data link simplifies the medical treatment process, avoids confusion and disorder caused by multiple systems and makes the medical experience less intrusive. For medical staff, it provides a more comprehensive understanding of patients' medical histories, assisting in the making of more accurate medical decisions.

6.2.6 Expanding The Service Scope Of Family Doctors

In terms of the scope of services provided by grassroots staff, the design plan has added basic mental health services to the remit of family doctors. This requires family doctors to conduct at least one mental health screening of residents each year and incorporate the results into regular health management. According to the management requirements for different mental health risk levels, the screening frequency must increase as the risk level of residents increases. This measure helps to detect potential mental health problems among the elderly at an early stage and prevent their mental health conditions from deteriorating further.

In addition, family doctors are

responsible for distributing 'Mental Health Self-Service Toolkits' to residents. Leveraging the professional image and trust that family doctors enjoy among the elderly, alongside the popularisation of 'somatisation symptoms', helps to increase the elderly population's awareness of mental health from the perspective of physical health, and reduces their resistance to psychological services.

The 'Mental Health Self-Service Toolkit' serves as a key touchpoint tool. It includes family doctor contact cards, mental health self-assessment tools and popular science handbooks on mental health, among other content. The popular science manual covers methods for understanding emotions, improving mental health, somatisation symptoms, seeking medical treatment, the process of psychological counselling and psychotropic drugs. The elderly can use this toolkit to educate themselves about mental health and use the self-test form to assess their health statusif they suspect they may have "somatisation symptoms". If the results are not satisfactory, they can refer to the relief methods in the toolkit for self-help. In severe cases, they can efficiently access medical resources via the channels provided.

"Mental Health Self-Service Toolkits" provide non-invasive mental health services that respect the privacy of the elderly and offer them the necessary psychological support. By widely distributing to residents through family doctors, it is hoped that the accuracy and effectiveness of the publicity can be enhanced, and people's prejudice against psychological problems can be eliminated imperceptibly. In the long term, this could also have a positive impact on the future popularity of mental health services.

Professional guidance is required when designing and compiling this tool. Popular science knowledge can be obtained through cooperation with the Shanghai Mental Health Centre.

Figure 46. Concept of Mental Health Self-Service Toolkits

Figure 47. The story board of Mental Health Self-Service Toolkits

6.3 Describing The New System

The above development proposals aim at comprehensively optimizing the community mental health public service system for the elderly at three levels: the system level, the management level, and the user level.

At the system level, the design strategy reconfigures inter-organisational collaboration by promoting the decentralization of medical resources to community health service centres and establishing interoperable data linkages among different departments, including community health service centres, family doctors, and community committees. In addition, it fosters partnerships between the government and private sector actors to introduce social resources that enrich service offerings. These systemic shifts lay a foundational infrastructure for the delivery of elderly mental health services and ensure the efficient integration of resources.

At the management level, a hierarchical management approach will be applied to mental health services for the elderly, employing dynamic risk-level tracking to prioritize high-risk individuals, thereby improving the efficiency of resource allocation and enabling more precise service provision. Concurrently, the scope of services provided by grassroots community workers will be expanded to formally include mental health support as a basic service category. These changes offer an invisible but critical safety net for elderly residents' community lives,

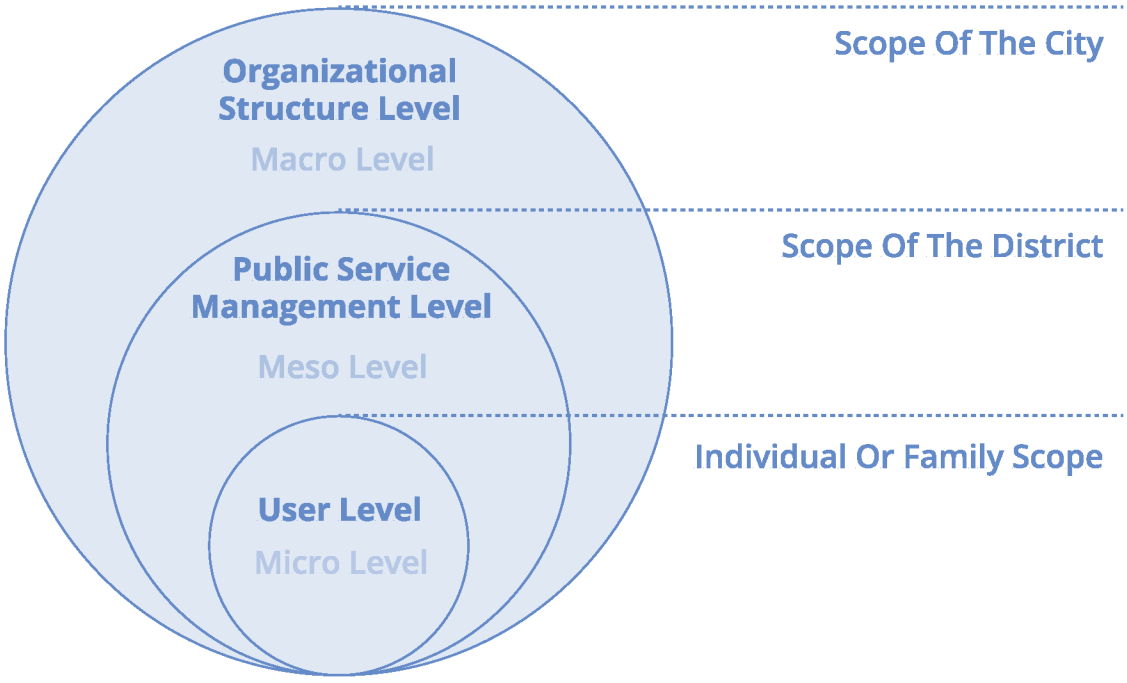


Figure 48. Three Level of the new system

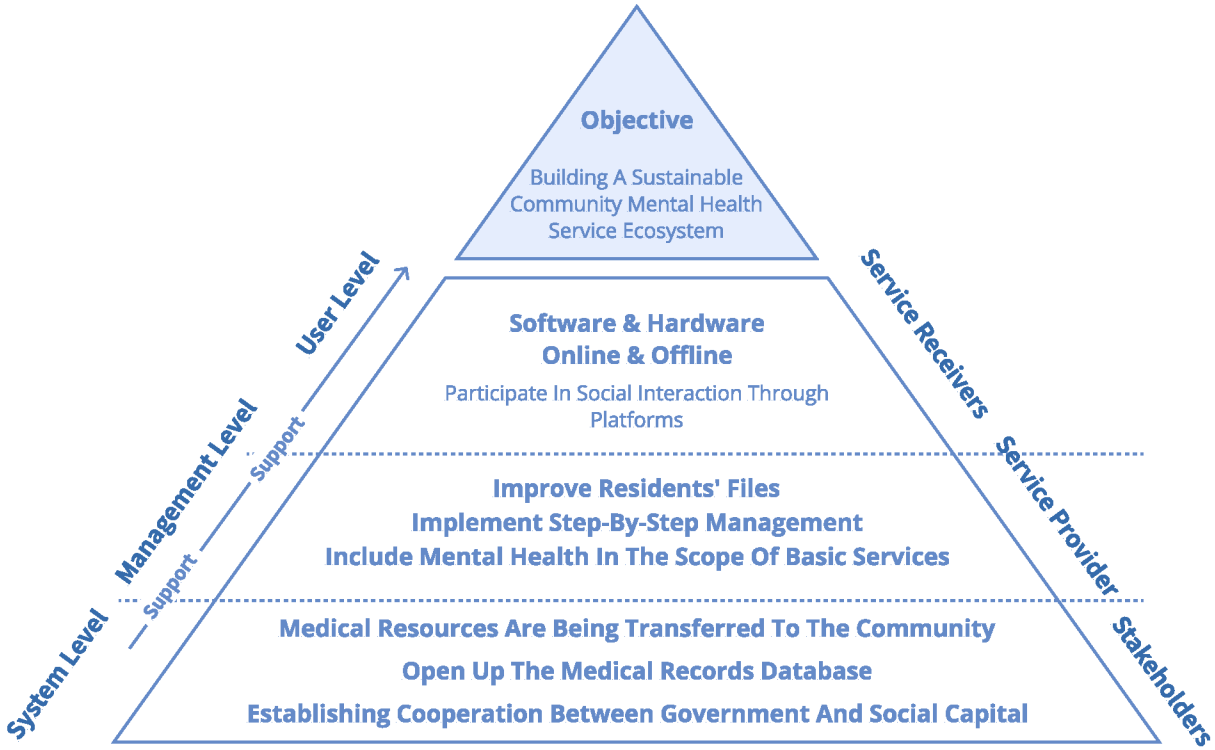


Figure 49. The hierarchy of the new system serves the common goal of Building a sustainable community mental health service ecosystem

ensuring the timeliness and effectiveness of the services provided.

At the user level, a dedicated psychological comfort service platform will be developed to provide personalised, multi-layered mental health support tailored to older adults' psychological needs. By integrating smart hardware, the platform will bridge the gap between online and offline service environments, enhancing the realism of elderly users' experiences and ensuring service continuity. However, this user-facing system forms part of a larger ecosystem, underpinned by organisational structures and public service management mechanisms. Without robust systemic support from these underlying levels, it would be difficult to sustain the platform's psychological support functions.

The diagram below illustrates the new service system architecture, highlighting the revised flow of elements among stakeholders (Figure 49) .

From the perspective of elderly residents at the centre of the community, the newly established community life service system—anchored by the comprehensive psychological comfort service platform—introduces a variety of services that foster richer social relationships. For example, the system incorporates new social roles such as group dining leaders, dining companions, Heartwarming Cloud partners, and neighbourhood friends, creating expanded opportunities for elderly individuals to build their social support networks.

Within the primary healthcare service system, the most notable changes include the decentralization of specialist medical resources to community health service centres, as well as the synchronization of medical records, enabling more seamless and coordinated service provision at the community level.

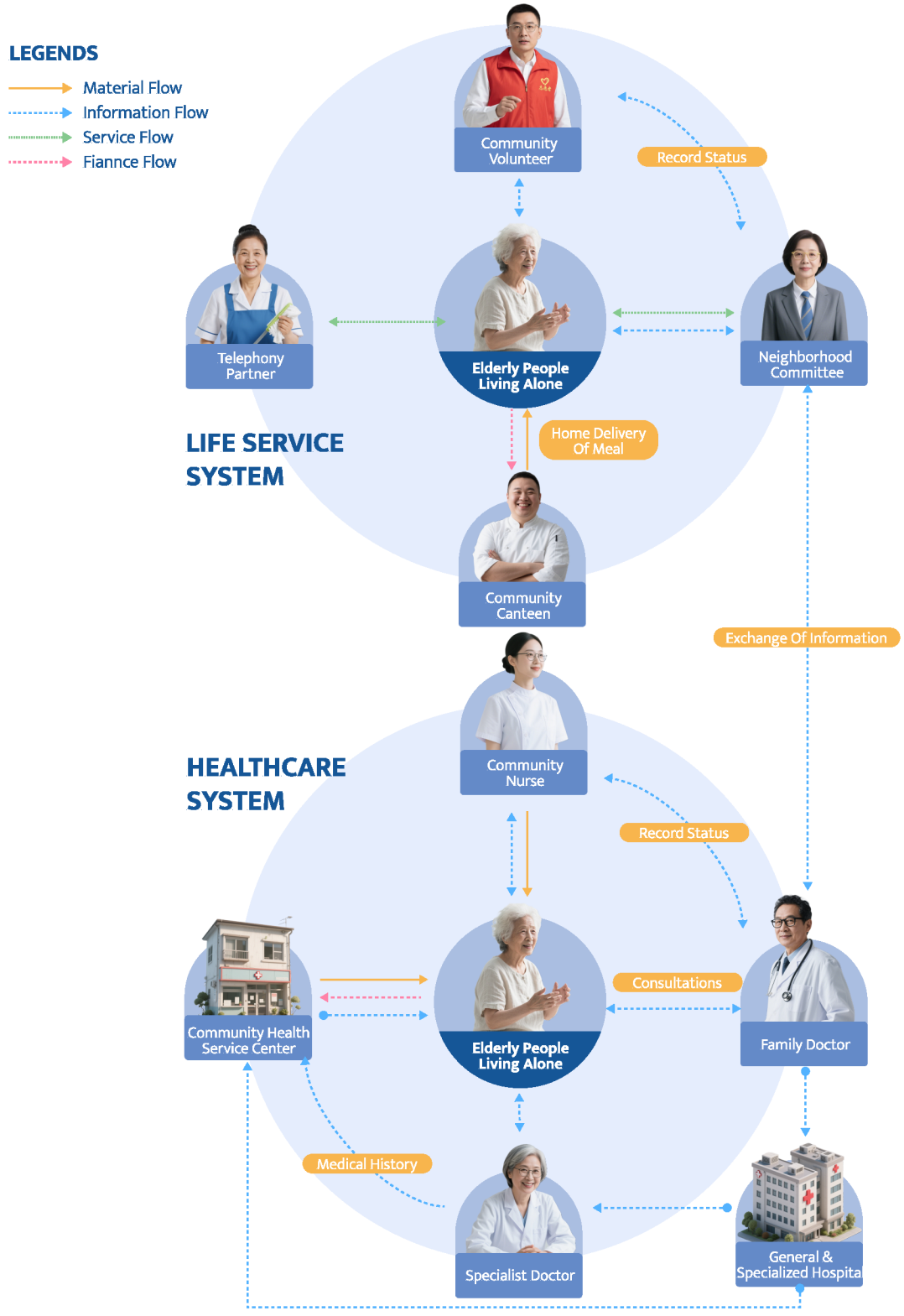


Figure 50. The system map of the new system

6.4 Roadmap For System Development

The development path of the system can be visually presented through the Roadmap.

In the first stage, the system data must be integrated and residents' files established. These files serve as the data foundation for all management activities. At the same time, the cooperative resources of community canteens and merchants must be expanded in preparation for the next steps.

In the second stage, services for high-risk groups (such as elderly people living alone) will be prioritised and launched first, starting with projects that can be implemented fastest and receive most resource support currently. For example, give priority to compiling and distributing the "Mental Health Self-Service Toolkit", and carry out group dining services based on the existing meal assistance points for the elderly.

In the third stage, the elderly become more familiar with the service platform. At this stage, functions based on the new connection can be expanded, such as volunteer recruitment and the telephone comfort service. These functions will be extended to a broader scope to establish connections among the elderly in different communities, which requires relying on a certain user base. Secondly, there is AI voice companion. The development of industry vertical dialogue models requires certain training data support. The existing voice assistant language model can first be applied to launch the basic version. During this process, corpora should be continuously collected and the model improved to create an industry-specific model that better understands the elderly.

In the fourth stage, broader connections are established on a societal scale. At this point, more external resource input is also needed to support the operation of the system. For example, Travel Route recommendations involve cooperation with merchants from all walks of life, public cultural service venues and the transportation system, and it requires more time to build a complete cooperation network.

Based on this development strategy, the public mental health service system can gradually improve, expanding from a small community to a wider society. Starting with key groups, it can benefit all elderly community members who are ageing at home, laying the foundation for a happy and healthy old age.

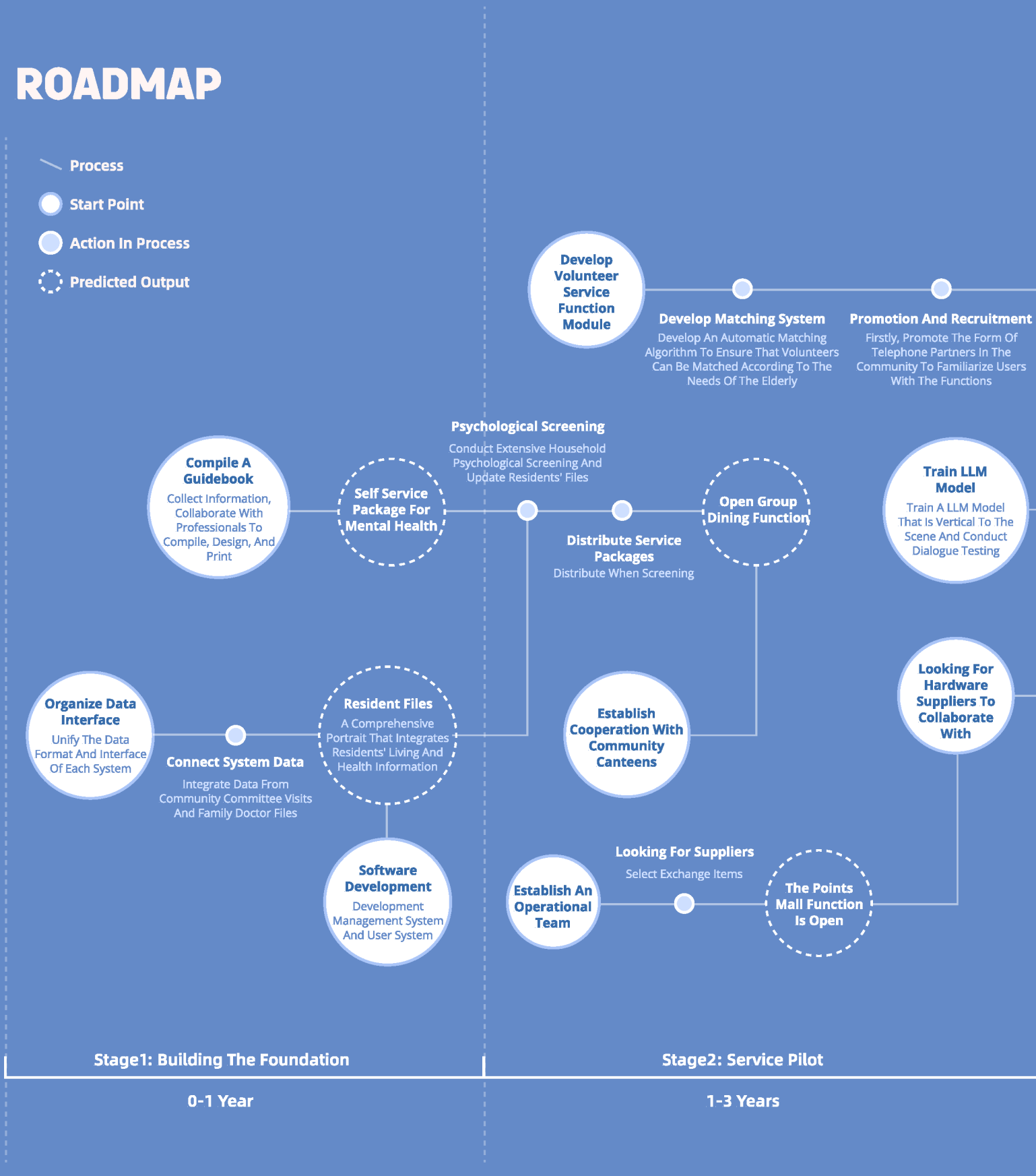
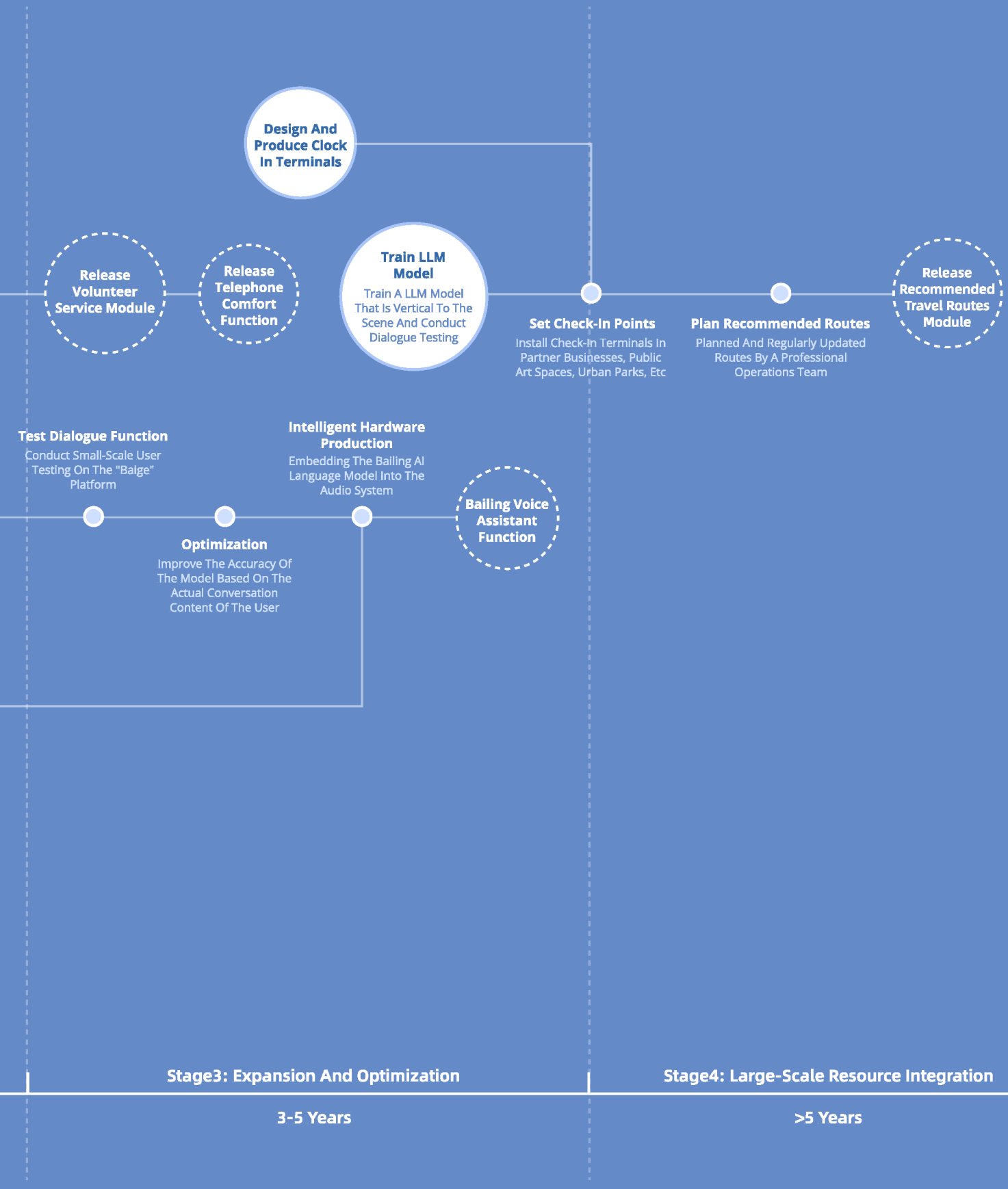


Figure 51. The roadmap of the development of the new system in future


Design And Produce Clock In Terminals
Release Volunteer Service Module
Release Telephone Comfort Function
Train LLM Model
Train A LLM Model That Is Vertical To The Scene And Conduct Dialogue Testing
Set Check-In Points
Install Check-In Terminals In Partner Businesses, Public Art Spaces, Urban Parks, Etc
Plan Recommended Routes
Planned And Regularly Updated Routes By A Professional Operations Team
Release Recommended Travel Routes Module
Test Dialogue Function
Conduct Small-Scale User Testing On The "Baige" Platform
Optimization
Improve The Accuracy Of The Model Based On The Actual Conversation Content Of The User
Intelligent Hardware Production
Embedding The Bailing AI Language Model Into The Audio System
Bailing Voice Assistant Function
Stage3: Expansion And Optimization
3-5 Years
Stage4: Large-Scale Resource Integration
>5 Years

CHAPTER 07

Conclusion

7.1 Result Of The Research

The existing elderly care service system is under tremendous pressure. Although China's home-based elderly care service system has been in development for over ten years and has gradually improved, there is still a shortage of services for specific groups. Currently, services mostly focus on life care and basic medical care. In contemporary society, which emphasises the coordinated development of the body and mind, elderly care services in terms of mental health are clearly lacking. This study focuses on designing a public service for the mental health of elderly community residents, providing a basis for the precise development of community elderly care services.

Based on the findings of the research, this study proposes improvements and expansions to the existing community service system across three levels: system, management, and user. It proposes a multi-scenario design scheme for a community mental health service system for the elderly. Employing a risk rating strategy, this system focuses on high-risk elderly individuals living alone while balancing the overall needs of the community, thus forming a hierarchically structured, functionally integrated service system.

The public service plan for mental health issues proposed in this study provides targeted services for elderly people with varying degrees of problem severity, at both the prevention and intervention levels. Prevention services are mainly provided through a psychological support platform for the elderly, as well as various peer and interest-based support services. Assist the elderly in participating more in group activities, expand the range of outdoor activities, enhance the resilience of social networks, and provide certain life assistance to alleviate the boredom and loneliness of their lives, reduce the pressure on life and economic problems, and thereby indirectly improve their mental health. In terms of intervention, management can grasp the mental health risk situation of the elderly in the community in real time through system data exchange, enabling them to dispatch family doctors to assess the situation promptly. If there are symptoms of mental health diseases, they can be referred to the specialized outpatient department of the community health

service center through the referral channel for treatment very close to home.

Based on an understanding of common mental health issues affecting elderly people in the community, this study focuses on the specific needs of some elderly residents with particular conditions. It proposes a personalised, stepped psychological support service plan that achieves an organic unity between the universal and the particular, providing a more coherent service experience for elderly people. At the same time, non-invasive methods of psychological support should be adopted to avoid any negative impact on the self-esteem of elderly residents. Safe, timely and private channels should be created to help the elderly obtain professional, effective assistance and improve their mental health and well-being.

The aim of this study is to improve the efficiency of the existing service system and expand its functions. The study's methodological value lies in providing a reference model for the development of regional elderly care services and encouraging local adaptation of practical approaches. It provides an empirical basis for policymaking and promotes the professional development of the community mental health service system. This research approach also has significant practical value in optimising the governance pattern of an ageing society.

7.2 Limitations And Prospects

Although this study has completed the theoretical construction, including the user-end service system, system optimisation plan and supply-side management platform, the following areas still need improvement due to the limitations of the researchers' academic ability and the objective conditions:

(1) Lack of quantitative research to validate the effectiveness of conclusions

This study encountered several obstacles in the initial stage of collecting quantitative data, primarily due to the following reasons: Firstly, the deterioration of physical functions in the elderly (such as vision and hearing deterioration) can lead to communication barriers. Secondly, the elderly are not yet familiar enough with digital tools, so data can only be collected from them in traditional ways, which is less efficient. Thirdly, misunderstandings about the background of the research may arise during the communication process. When recovering data, it is difficult to ensure its quantity and quality, resulting in a lack of acceptance of the conclusions of quantitative experiments.

(2) The replicability of the proposed solutions requires further validation

Although the replicability of the scheme was considered in its design, the conclusion of this study has a strong correlation with the characteristics of the field. It has not been confirmed whether this scheme can truly be applied to other fields. Jing'an District has a relatively high proportion of elderly people, but it is also a leading economic area. The quality of life for the elderly in this area is better than in most other areas of China. Whether fluctuations in economic conditions will bring about other contradictions remains to be studied.

Future research will address the aforementioned deficiencies by improving existing research methods, while focusing on exploring the Autopoiesis model of the service system to reduce reliance on external funds and support. For example, regular cooperation mechanisms will be established between grassroots organisations and social enterprises, such as sponsorship, naming rights and targeted procurement, to enhance the system's sustainability. Furthermore, although the current program provides both formal and informal social support, it still relies on medical referrals for professional treatment services. In future, two approaches could be adopted to improve the quality of professional services: The first is to incorporate qualified and certified mental health professionals into the community service network, and the second is to establish a franchise cooperation model with professional medical institutions.

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Acknowledgements

When I start to write this passage, it means that my student life is truly coming to an end. Nineteen years of study, this year in Italy is like a pearl on the crown, embellishing it with endless brilliance. In the short period of this year, I have met so many precious people who have given me help and encouragement. They are the reason for my fulfilment and happiness today.

First of all, I would like to thank my supervisor, Professor Amina Pereno, and researcher Wen Lu. While promoting the graduation project, we encountered some obstacles due to differences in national conditions, cultural contexts and the research topics themselves (the mental health of the elderly remains a relatively challenging topic in China). However, throughout this process, we maintained an open and inclusive attitude, engaging in many beneficial discussions about the issues encountered. Professor Pereno and Researcher Wen Lu were also able to provide me with valuable suggestions at every stage. This support enabled me to continue my research. Additionally, researcher Wen Lu helped me to contact staff in Jing'an District, Shanghai, building a communication bridge between the Politecnico di Torino, Tongji University, and Jing'an District, Shanghai. This made an important contribution to the advancement of the research.

I would like to express my gratitude to the professors and researchers for their dedication throughout the project. They have also provided me with many unexpected gains, such as enabling me to view local issues in China from a cross-cultural perspective and to understand international solutions. I also hope that my research will enable Italian researchers to recognise China's excellent community service practices.

I would also like to thank my foreign classmates with whom I studied at Polito. During the Open System course, I met some very friendly group members. By working together towards the course goals, we formed valuable cross-cultural friendships, which is another valuable gain for me this year. Thank you, Sofia, Matilde, Nicole, Nicolo and Isabella. Thank you for your help with life and studies. You have also made me develop a stronger interest in Italian culture. I will always remember the joy we created together and will continue to support you from another corner of the world.

And my roommates: Shuxiao Zhong and Yinxiang Wang. Over the past year, we have become like friends, comrades-in-arms and family. We have shared many once-in-a-lifetime experiences and countless happy and touching moments.

When we are together, it is a victory for idealists — we share pure and passionate dreams, embrace hope for our future lives and allow our viewpoints and thoughts to flow freely between us. This replaces biased value judgements with equality and respect. We share the funny things in life, sincerely wish each other well and are willing to make selfless efforts to make each other happy. Shuxiao often says, 'A friend is the family one chooses for oneself.' Thank you for being each other's family. All the memories we made in Italy will fuel me on my journey forward, always burning a flame in my heart. I hope that, as we move forward, we will gather as a blazing fire and scatter as stars across the sky.

And the environment created by Polito is like a fertile soil, allowing me to take root everywhere like a plant and absorb nutrients. The international exchange atmosphere that Polito provides has benefited me greatly. The more I interact with people from all over the world, the more diverse and inclusive my mindset becomes, and the more courage I gain to face unknown challenges. A person's thoughts and feelings can be shaped by their environment, and Polito has created a very free, open and inclusive environment for us, which has also changed me greatly.

I would also like to express my gratitude to my family and elders for giving me complete freedom. They never limit my life with expectations. It is precisely in such an environment that I can choose what I love, do what I love and have ample space to explore and develop. I am grateful to my family for their unwavering support and backing of my choices.

Finally, I would also like to thank myself. During my three years of postgraduate study, I gradually climbed back onto the right track. As well as thanking my family and friends for their support, I would like to thank myself for never giving up. When I decided to pursue a postgraduate degree at Tongji University, perhaps the gears of fate had already begun to turn, presenting me with the opportunity to come to Italy and Polito and explore a brand-new life. I left behind a familiar school, city and social circle to immerse myself in a completely new environment and face new challenges. I am grateful for my persistence, hard work and courage. Perhaps the happiness I have today is not a coincidence, but the result of one small choice after another. Life's score has merely drawn a brief pause, and I hope that I can continue with such tenacity to write the sequel.

Studying in Italy this year has been a time of intense conflict and change for me, but also a time of significant progress. I want to keep a grateful heart, never forget my original intentions for coming here and continue exploring and moving forward on the path of design.