LABOR MARKET CONDITIONS FOR HEALTH AND ELDERLY CARE WORKERS IN THE PEOPLE'S REPUBLIC OF CHINA

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ABSTRACT

This paper examines the labor market conditions in the health and social work industry in the People's Republic of China (PRC). The analysis indicates that while population aging and increased chronic disease burdens have greatly expanded the demand for health and elderly care services, the growth in employment in the health and social work industry has lagged behind other sectors. This limits the supply of high-quality health and elderly care services for the growing population with care needs. To understand the causes of this shortage of health and elderly care workers, the paper explores the labor market conditions in the sector. The analysis reveals that women constitute most of the health-care workforce in the PRC, and the elderly care workforce is predominately composed of older migrant women with a junior high school education or lower. Data further indicate that the working conditions of health and elderly care workers could improve. A majority of the medical staff surveyed for this study were dissatisfied with their compensation, a third intended to leave their occupation, and a quarter had encountered verbal or physical abuse from patients over the past 6 months. Wages for elderly care workers were also low, and most of the elderly care institutions had difficulty generating sufficient revenue to cover operational costs. These results point to the need for a comprehensive strategy for care provision that aims to provide decent jobs for care workers while making quality care services accessible for all persons with care needs.

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ABBREVIATIONS

CNY	–	Chinese yuan
GDP	–	gross domestic product
ICT	–	information and communication technology
ILO	–	International Labour Organization
LTC	–	long-term care
OECD	–	Organisation for Economic Co-operation and Development
PPP	–	purchasing power parity
PRC	–	People's Republic of China

DATA SOURCES

China Population Census (1982, 1990, 2000, 2010, 2015)	Censuses conducted by the National Bureau of Statistics of the People's Republic of China (PRC).
China Medical Staff Survey 2013	This survey is a part of the National Health Services Survey conducted every 5 years by the National Health and Family Planning Commission (and its predecessor, the Ministry of Health) since 1993. The survey covers all provinces in the PRC.
Beijing Elderly Care Institutions Census 2016	Census carried out by Beijing Normal University on behalf of the Beijing Civil Affairs Bureau. It covers all public welfare homes and private nursing homes in areas under the jurisdiction of the Beijing municipality.
China Statistical Yearbook 2019	Annual publication of the National Bureau of Statistics.
China Civil Affairs Statistical Yearbook (1991, 2001, 2011, 2017)	Annual publication of the Ministry of Civil Affairs.
China Health Statistical Yearbook (1991, 2001, 2011, 2017)	Annual publication of the National Health and Family Planning Commission.
World Health Statistics 2019	Annual publication of the World Health Organization.

I. INTRODUCTION

The work of caring for children, the sick, and the elderly is a critical determinant of the well-being and quality of life for service users and their families. In the People's Republic of China (PRC), as in most other countries, the bulk of this care work is delivered at home and carried out by women who are unpaid. However, tasks associated with care work are also commodified and provided for pay or profit outside the home, whether through the private sector, the community, or the state. Paid care work is also largely undertaken by women—as teachers, doctors, nurses, nannies, caregivers for the elderly, or domestic workers. International research has found that paid care workers suffer substantial labor market disadvantages—they are poorly paid, overworked, and lack social protection (Heyes 2005, Kingma 2007, Morris et al. 1999, Nelson and Folbre 2006, Peng 2010, Razavi and Staab 2010). The working conditions of paid care workers not only impact their living standards, but also affect the quality and availability of paid care services, which, in turn, affects service users. Access to paid care services also limits opportunities for women with unpaid care responsibilities to participate in paid work and also affects the quality of jobs they undertake. Thus, understanding how paid care work is organized and rewarded can help in formulating effective public policies to promote gender equality and protect the interests of both paid care workers and care service users.

The paid care workforce in the PRC is an understudied subject, compared with the substantial amount of research focusing on unpaid care work and its impact on women.[1] While the wage and working conditions for domestic workers have received growing attention from academic communities (Hu 2010; Dong, Feng, and Yu 2017; Tong 2018), much less is known about the situation of care workers employed in the "public" domain, such as hospitals and elderly care institutions.[2] This report attempts to fill in this knowledge gap by examining the employment, earnings, and working conditions of care workers in the health and social work industry in the PRC and exploring their implications on gender equality in the labor market. To achieve this, we first document the wages and employment trends in the health and social work industry since the 1990s, using published statistics and data from the *China Population Census*. We then focus on workers employed in direct service delivery roles, examining the main characteristics of medical staff and elderly care workers, as well as their earnings and working conditions, using data provided by the *China Medical Staff Survey 2013* and the *Beijing Elderly Care Institutions Census 2016*.

Section II presents the theories that have been proposed to explain poor labor market conditions for care workers, and strategies to address the problems of care service markets. Section III provides an overview of the development of health and elderly care services in the PRC, and section IV presents the main empirical findings. The last section concludes with policy implications for improving the labor market conditions of care workers in the PRC.

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1 For a survey of the literature on care work and its impact on Chinese women in the labor market, see Connelly et al. (2018).

2 In developed countries, paid care workers also include those providing services for the elderly at home and in the community. In the PRC, home-based services are mostly provided by the family and relatives or domestic workers, and community-based services are just beginning to emerge.

II. WHY ARE PAID CARE SERVICES VULNERABLE TO LOW-PAY AND LOW-QUALITY OUTCOMES?

A. Care Is Relational

A number of theories have been put forth to explain the generally poor labor market conditions for paid care workers and their impact on care service provision. The first one is grounded on the relational characteristic of care services (Donath 2000, Himmelweit 2007). Good-quality care is labor intensive, with close interaction between service users and providers. Unlike in manufacturing, for example, the relational nature of care work limits the potential for raising productivity, such as automating related tasks through technology use. A care worker can only attend to a limited number of people without hampering the quality of the care that is provided. This creates constraints to raising productivity, which, in turn, limits the ability of service providers to raise the wages of care workers.

B. Care Provision Is Affected by the Dependency of Care Users on the Resources of Others

Service providers are also constrained by how much wage increases can be passed on to care users (Folbre 2006) as care users are often economically dependent, which also explains the low pay and status of care workers. As England, Budig, and Folbre (2002) note, children, the disabled, and the elderly need care services the most but are the least able to pay for them. Affordability is a key issue and the economic dependency theory is particularly relevant to persons with disability and the elderly, who need care most, but are unable to earn an income and often have accumulated little wealth at retirement. As a result, their access to medical or care services depends on the financial resources of others—remittance from their adult children or public assistance, which are not always reliable. The vulnerability of most care users hinders their ability to pay rising prices for care services, thereby putting a downward pressure on wages for care workers.

C. Gender Roles and Devaluation of Female-Dominated Occupations

Another explanation for poor labor market conditions for paid care workers stems from theories of gender segregation that emphasize the cultural devaluation of female-dominated occupations (England 1992). Throughout the world, women are overrepresented in paid care services, such as nursing, teaching, childcare, elderly care, or domestic services. These occupations are culturally undervalued because they involve tasks that have traditionally been performed by women at home without pay. The skills required for these tasks are often perceived as innate in nature and therefore not requiring as much training as the skills required for other occupations (England et al. 1994). Such perceptions and attitudes may affect society's perception of how much care services should cost, thereby lowering the wages for care workers relative to workers with similar characteristics in other occupations, even when the work is performed by men (Cancian 2000; England, Budig, and Folbre 2002).

D. The Problem of Asymmetric Information in Care Services

Last but not least, another reason relates to the problem of asymmetric information in care service markets, given that it is difficult to measure and evaluate the quality-of-care services, especially when care users (e.g., people with dementia or severe illness) are not in the state to evaluate the services they receive (Folbre 2006). Due to lack of information on the quality of the service received, users tend to pay according to the average quality in the market. This leads to under-compensation for those who provide above-average quality services yet are reluctant to quit due to low wage since they value the nonmonetary rewards of the occupation, i.e., they derive satisfaction from "saving lives" and "helping people" (Heyes 2005). Nevertheless, the presence of asymmetric information can also result in the mistrust between care service users and providers, leading to workplace violence against care workers.

Poor labor market conditions for care workers lead to poor-quality care services and a shortage in care service supply. Low pay and status can reduce incentives for care workers to develop their skills and deliver high-quality services. Poor conditions also worsen turnover, as workers with higher qualifications will quit once better opportunities outside the care sector become available and the nonmonetary rewards of the occupation become inadequate. Difficulty in recruiting and retaining qualified workers hampers the supply of quality services for a large segment of the population who are in need of care (Scheil-Adlung 2015, Kingma 2007, Meyer 2000).

E. Care Provision as a Public Good

To avoid low-pay and low-quality outcomes, the International Labour Organization (ILO) proposed a comprehensive strategy for care provision (ILO 2018, Folbre 2006), which has two pillars: (i) provide decent jobs for care workers, and (ii) make quality care services accessible for all persons with care needs.[3] To achieve this dual goal, the state needs to become an active investor, provider, and regulator of paid care services. The state can bridge the gap between price affordability and good-quality services, and finance part of the costs for health care, childcare, and elderly care through general taxation, obligatory social insurance contributions, subsidies, or direct delivery of care services. In developed economies, the provision of health care and long-term care (LTC) services represents a large share of total public spending and a non-negligible share of gross domestic product (GDP) (Tables 2 and 5). The state also has a role to play in improving labor market conditions for care workers by promoting training and professionalization, extending labor and social protections to care workers, and strengthening regulatory standards of care service provision (ILO 2018). These policy measures should generate long-term benefits to society far exceeding their actual cost, and can lead to better-paying jobs, enable more unpaid care givers to enter the labor market, increase the capabilities of the current and future labor force, and improve the overall well-being of the population (ILO 2018; De Henau, Himmelweit, and Perrons 2017).

[3] The low-pay and low-quality outcomes in unregulated markets for care services are termed a low-road approach to care provision (Folbre 2006).

III. OVERVIEW OF HEALTH AND ELDERLY CARE PROVISION IN THE PEOPLE'S REPUBLIC OF CHINA

A. Demographic and Epidemiological Transitions

Over the past 4 decades, the PRC has witnessed rapid demographic and epidemiological transitions, along with a remarkable improvement in the standards of living. The PRC's GDP per capita has increased from $318 in 1978 to $9,771 in 2019, and its life expectancy at birth has risen from 65.8 to 76.7 years during the same period.[4] Associated with increased life expectancy and declining fertility, the PRC has also experienced rapid population aging. Between 1981 and 2020, the share of the population over 65 years old has increased from 4.7% to 11.9% of the total population, and the old-age dependency ratio has doubled from 7.9% to 16.9% (Table 1). Based on United Nations projections (United Nations 2019), by 2030, the population over 65 years old in the PRC is expected to increase to 16.9% of the total population (246 million) and the old-age dependency ratio is expected to rise to 25.1%.

Table 1: Changes in the Age Structure of the Population, 1980–2030
(%)

Year	Age 0–14	Age 15–64	Age 65+	Old-Age Dependency Ratio
1980	35.9	59.4	4.7	7.9
1990	28.6	65.8	5.6	8.5
2000	24.8	68.4	6.8	9.9
2010	18.7	73.3	8.0	10.9
2018	17.9	71.2	10.9	15.3
2020	17.7	70.4	11.9	16.9
2030	15.8	67.3	16.9	25.1

Note: Data for 1980 to 2018 from the World Bank; data for 2020 and 2030 are from the United Nations.

Sources: World Bank. World Development Indicators. http://databank.worldbank.org/data/reports.aspx?source==world-development-indicators (accessed 11 May 2020); United Nations. *World Population Prospects 2019.* https://population.un.org/wpp/Publications/Files/WPP2019_Volume-I_Comprehensive-Tables.pdf. New York: Department of Economic and Social Affairs.

The improvement in standards of living, population aging, and decline in fertility rates are attributed to a dramatic change in the patterns of disease burdens (Zhou et al. 2019). The burden of disease due to communicable, maternal, neonatal, and nutritional conditions has been on a rapid decline in the PRC, with maternal mortality, and mortality for children under 5 years old and 1 year old falling well below the levels of countries at a similar stage of development, such as Brazil and South Africa (Table 2). Meanwhile, the PRC has seen a growing burden of noncommunicable diseases associated with population aging, lifestyle, food safety, and pollution, such as cardiovascular disease, cancer, chronic respiratory diseases, diabetes, and dementia (Zhou et al. 2019). Between 1993 and 2013, the rate of 2-week illnesses[5] increased from 14.0 to 24.1 per 1,000 persons for the population as a whole;

[4] GDP per capita is in current United States (US) dollars; see World Bank. *World Development Indicators*. http://databank.worldbank.org/data/reports.aspx?source==world-development-indicators (accessed 2 June 2020).

[5] The rate of 2-week illness covers those individuals who went to see a doctor, took self-care, or stopped working or schooling due to illness or injuries in the past 2 weeks.

Table 2: Health Indicators of Selected Countries

	China, People's Rep. of	Russian Federation	Brazil	South Africa	Japan	Korea, Rep. of	Germany	Global Average
Life expectancy at birth	76.4	72.0	75.1	63.6	84.2	82.7	80.9	72.0
Healthy life expectancy at birth	68.7	63.5	66.0	55.7	74.8	73.0	71.6	63.3
Maternal mortality ratio per 100,000 live births	27	25	44	138	5	11	6	216
Child mortality per 1,000 live births								
Under 5 years old	9	8	15	37	3	3	4	37
Neonatal	5	3	9	11	1	2	2	18
Universal health coverage index	76	63	77	67	≥80	≥80	79	64
Doctors per 10,000 population	25.9[a]	40.1	21.5	9.1	24.1	23.7	42.1	15.1
Nurses and midwives per 10,000 population	29.4[a]	86.2	97.1	35.2	115.2	69.7	132.0	34.8
Health expenditure per capita ($)	398	469	1,016	428	4,233	2,044	4,714	1,001
Health expenditure as % of GDP	6.6	5.3	11.8	8.1	10.0	7.3	11.1	6.6
Public health expenditure as % of total public expenditure	7.4	8.2	9.9	13.3	23.4	13.5	21.4	10.6
GDP per capita (constant 2017 PPP $)[b]	15,243	26,667	14,596	12,639	41,074	41,894	53,660	16,638

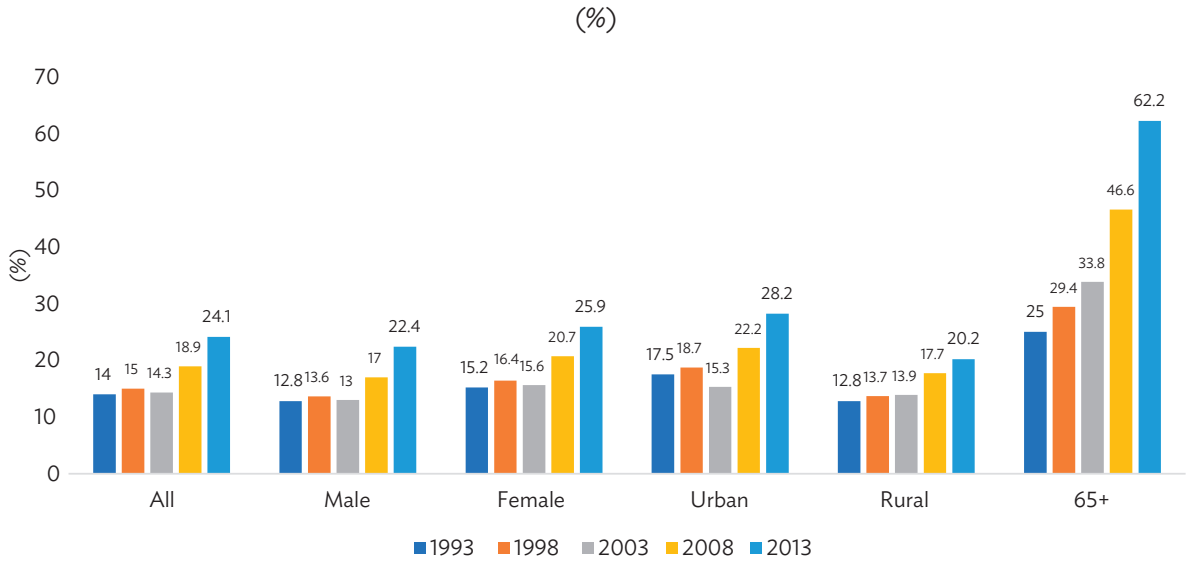
GDP = gross domestic product, PPP = purchasing power parity.

[a] Data from *China Statistical Yearbook 2019* (Tables 22–23).
[b] Data from World Bank Open Data and *World Health Statistics 2019*.

Sources: National Bureau of Statistics. 2019. *China Statistical Yearbook 2019.* Beijing; World Bank. World Bank Open Data. https://data.worldbank.org/ (accessed 23 December 2020); World Health Organization. 2019. *World Health Statistics 2019*. Geneva.

and from 25.0 to 62.2 per 1,000 persons for those over 65 years old (Figure 1). While the 2-week illness rate is trending upward for all groups, the rate is consistently higher for women than men, and also higher for urban residents than rural residents.

Figure 1: Two-Week Illness Rates by Gender and Sector, 1993–2013



Source: National Health and Family Planning Commission. National Health Service Survey of China 1993, 2003, 2008, and 2013. Beijing.

The growth of aged populations and chronic disease burdens has significantly increased demands for health and elderly care services. According to the *China Health and Retirement Longitudinal Survey 2015* (National School of Development, Peking University 2015), 21.5% of Chinese residents over 60 years old are dependent on others for assistance in at least one activity of daily living or one instrumental activity of daily living (Table 3), and the proportion of residents with care needs is 10.2 percentage points higher for women than men and 9.3 percentage points higher for rural residents than urban residents.[6]

Table 3: Residents Aged 60 and Above with Care Needs, 2015

	Percentage	Observations
Total	21.5	9,628
Men	16.3	4,751
Women	26.5	4,877
Urban residents	15.8	2,665
Rural residents	25.1	6,963

Note: Persons with care needs are individuals who are dependent on others for assistance in at least one activity of daily living or one instrumental activity of daily living.

Source: The National School of Development, Peking University. *China Health and Retirement Longitudinal Survey 2015*. Beijing.

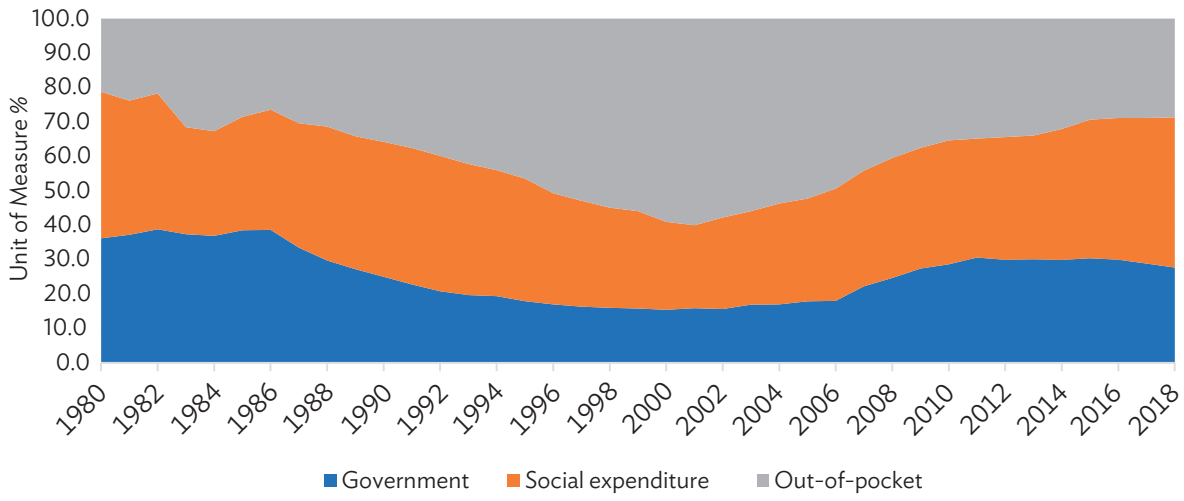
[6] Part of the urban–rural gap in illness rates may reflect the fact that urban residents are more likely to seek medical treatment than rural residents, other things being equal, as hospitals and clinics are more accessible in urban areas than rural areas.

B. Health-Care Reforms

During Chairman Mao Tse Tung's era (1949–1976), the PRC developed a broad-based basic health-care system. In the urban sector, medical services were mostly provided by public hospitals and the health-care expenditure of workers and their families was, for the most part, covered by their work unit (*danwei*)[7] (Wang 2008). In rural areas, residents gained access to basic but affordable health care through the commune-operated cooperative medical system, which covered 90% of the rural population (Wang 2008). The relatively high accessibility of basic health care significantly improved the health status of Chinese people and was a main driver of the steep increase in life expectancy (from 35 to 65.8 years old) between 1949 and 1978.

In the first 2 decades after the PRC embarked on the transition toward a market-oriented economy in the late 1970s, the work unit-based and commune-based welfare systems were gradually dismantled and health-care delivery was gradually commercialized. In 1980, the out-of-pocket payments of individuals accounted for 21% of total health expenditure, while government spending and social insurance accounted for the remaining expenditure. By 2001, the government's share of total health expenditure had decreased from 36.2% to 15.9%, and the portion of social insurance had decreased from 42.6% to 24.1%. As a result, individual residents were responsible for paying 60% of total health expenditure (Figure 2). The health-care reform during this period fundamentally shifted the financial responsibility for health care from the government and society to the individuals, thereby limiting the access to health care to those who could afford to pay for it.

Figure 2: Changes in the Composition of Total Health Expenditure, 1980–2018



Source: National Bureau of Statistics. 2019. *China Statistical Yearbook 2019*. Beijing.

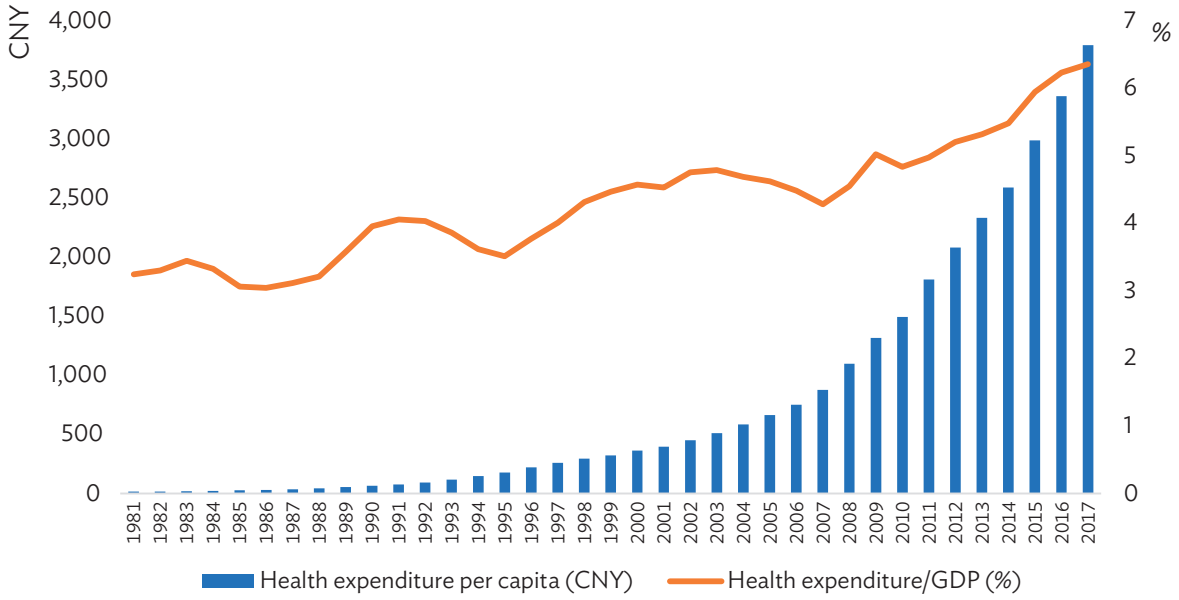
In 2003, the outbreak of severe acute respiratory syndrome (SARS) emphasized the need for action in addressing affordable health-care services. From 2001 to 2018, total health expenditure by the government, social insurance programs, and individuals increased from 4.5% to 6.6% of GDP, and per capita health expenditure increased from CNY90[8] to CNY651 (in 1978 constant price) (Figure 3). Government expenditure on health care increased substantially from CNY80 billion in 2001 to CNY1.64 trillion in 2018, and the share of government health expenditure in total government

[7] *Danwei* refers to a place of employment in the context of state-owned enterprises.
[8] $1 = CNY6.46 as of 7 September 2021.

expenditures grew from 4.2% to 7.4%.[9] The PRC has also expanded its health insurance programs at a speed that has few precedents globally, from covering about 76% of the population in 2003 to 96.9% in 2017 (ILO 2018).

The PRC's health-care insurance consists of three programs (Li 2011), with urban workers and retirees covered by the Urban Employees Basic Medical Care program, the remaining urban residents by the Urban Resident Basic Medical Care program, and rural residents by the New Rural Cooperative Medical Insurance program. There are large disparities in benefits among the three programs. Nevertheless, with the increase in government health expenditure and the expansion of health insurance coverage, the proportion of health expenditure paid by individual residents has decreased from 60% in 2001 to 28.6% in 2018 (Figure 2).

Figure 3: Health Expenditure per Capita and as a Share of Gross Domestic Product, 1981–2017



CNY = Chinese yuan, GDP = gross domestic product.

Source: National Bureau of Statistics. 2019. *China Statistical Yearbook 2019.* Beijing.

Despite the improvements, obstacles remain to achieving basic universal health coverage. The amount of financial resources invested in health care in the PRC is still relatively low by international standards. In 2018, its per capita health expenditure stood at $398, and the proportion of total government expenditure on health was 6.6%—both lower than the respective global averages of $1,001 and 7.4%, respectively, and also lower compared to countries at a similar stage of development (Table 2). Efforts to provide basic health services for all are also constrained by acute shortages and inequitable distribution of skilled health workers. In 2018, there were only 55.3 skilled medical staff (doctors and nurses combined) per 10,000 population in the PRC, which was much lower than the 93.4 in the Republic of Korea, 118.6 in Brazil, 126.3 in the Russian Federation, and 139.3 in Japan (Table 2). The shortage of nurses in the PRC is particularly acute. There were only 1.14 nurses for every doctor in the PRC; in contrast, the average nurse-to-doctor ratio is 2.3 globally, 2.15 in the Russian Federation, 2.89 in the Republic of Korea, 3.87 in South Africa, 4.52 in Brazil, and 4.78 in Japan. The human resource constraint in the PRC is higher in rural areas than in urban areas; there are 40.1 doctors and 50.8 nurses

[9] See National Bureau of Statistics (2019).

for every 10,000 urban inhabitants, but only 18.2 doctors and 18 nurses per 10,000 rural inhabitants.[10] Like most countries, the PRC has difficulty in recruiting and retaining skilled medical staff in rural villages and small cities, and well-trained physicians and specialists are concentrated in large cities (Su et al. 2018; Zhang et al. 2018; Hsiao, Li, and Zhang 2014).

Moreover, the country's health service delivery system faces serious challenges in transforming scarce financial and human resources into effective services (Yip et al. 2019; Hsiao, Li, and Zhang 2014). In the post-reform era, public hospitals and clinics, which deliver over 90% of the country's inpatient and outpatient services, have been transformed into for-profit commercial entities. Health-care services are delivered on a fee-for-service basis and hospitals need to cover 70%–90% of their operational cost by the revenue from service provision. The compensation of hospital directors and medical staff is linked to hospitals' profits. The profit-driven service delivery has been associated with overprescription of expensive medicines, oversupply of tests, and undue emphasis of treatment over disease prevention. These practices have caused the rapid growth of health-care expenses, posing a serious challenge to the sustainability of health-care insurance programs (Zhai, Goss, and Li 2017). The incentive system also has a negative impact on professional ethics and practice norms in the PRC, thereby amplifying the tensions between physicians and patients over asymmetrical information and exacerbating workplace violence against doctors and nurses (Yip et al. 2010, Shi et al. 2017, Chen et al. 2016). Since 2009, a dozen of pilot cities have been selected to experiment with different approaches to reforming public hospitals in accordance with local conditions. The attempt to change the hospitals' organizational behavior has been so far met with limited success (Yip et al. 2019).

The outbreak of the coronavirus disease (COVID-19) pandemic has highlighted some important limitations in the PRC's health-care system. The pandemic first broke out in the city of Wuhan in December 2019 and then quickly spread to other parts of the country. While preventive measures have been successful in bringing the outbreak under control in a few months, the health-care system was overstretched (Ji et al. 2020). This suggests that despite the significant increase in the supply of health-care resources following SARS in 2003, important gaps remain. The COVID-19 pandemic also underscored the need to balance the attention given to medical care in relation to public health as well as public health prevention and control capacity (Xing and Zhang 2021). Further, the pandemic has impacted the working conditions for health-care workers. During the worst of the outbreak, frontline health-care workers faced enormous pressure, including a high risk due to infection, overwork, isolation, patients with negative emotions, and a lack of contact with their families (Que et al. 2020, Zhang et al. 2020). Li et al. (2021) found that health workers at the frontlines of the COVID-19 pandemic experienced mental health problems, such as stress, anxiety, depressive symptoms, insomnia, anger, and fear (Li et al. 2021). Empirical studies show that, in general, frontline health-care workers have higher prevalence rates of anxiety, depression, and insomnia, compared with general health-care workers (Que et al. 2020).

C. Evolution of Institutional Elderly Care

In the PRC, as in many other countries, the provision of care for the elderly is primarily the responsibility of the family. The Marriage Law of 1950 and the Constitution of 1954 stipulate that care for frail elderly parents is a responsibility that cannot be evaded by their adult children (Palmer 1995). The Law of Elderly Rights and Security, which was enacted in 1996, reiterates that it is a criminal offense for an adult child to refuse to perform his or her duty to support an aged family member.

[10] See Table 22–23 in National Bureau of Statistics (2019).

In this context, the government limited its role in elderly care provision to financing and operating public welfare homes only for childless elders, orphans, the mentally ill, and developmentally disabled adults without families. However, the growth of older populations with care needs and the decline in household size (exacerbated by the one-child policy) has eroded the familial system of elderly care provision, raising demands for social care services.

In response to this rising demand, in 1998, the government introduced regulation to encourage private enterprises, nongovernment organizations, and individuals to invest in institutional elderly care services, while allowing public welfare homes to take in non-welfare, self-paying customers (Wong and Leung 2012). In the 12th Five-Year Development Plan for Social Services System for Old Persons (2011–2015),[11] the government proposed to develop social care for the elderly through the development of an elderly care market, nonprofit organizations, and voluntary service providers. The plan envisioned a new model of elderly care that has three integrated components, with home-based care as the foundation, supported by community-based services and underpinned by institutional care (*jujiayanglao*). The plan also encouraged mutual assistance among the elderly, with younger elders providing volunteer services for disabled older elders in the community. It is estimated that about 10% of the Chinese elderly population were engaged in community volunteer services in 2015 (General Office of State Council 2018).

In 2013, the Law of Elderly Rights and Security was revised with new articles obliging local governments to provide means-tested subsidies to older persons with long-term care (LTC). The law also pledges that the state will gradually expand LTC services to meet the care needs of the elderly (Scheil-Adlung 2015). Thus, in recent years, local governments in more developed areas began to provide subsidies for private nursing homes and purchase care services from the non-state sector to meet the needs of low-income families (Shang and Wu 2011). In large cities such as Beijing, Shanghai, and Nanjing, the non-state sector is now allowed to operate public welfare homes under the policy of "state-owned, society-operated." This policy has shifted the role of the state in elderly care from being a service provider to more of a funder and regulator (Wong and Leung 2012).

D. Coverage

Despite the growing attention to social care, the coverage of institutional elderly care in the PRC remains extremely limited. By 2016, the PRC had a total of 414,778 elderly care institutions (public welfare homes, private nursing homes, and community service centers combined), which employed 1.741 million workers and served 2.198 million older persons with disability (about 1% of the population aged 60 and above and 1.5% of the population aged 65 and above).[12] When the supply of paid elderly care services is limited, infirm older residents have to rely on family care or forego care altogether. According to the *China Health and Retirement Longitudinal Survey 2015* (Table 4), 16.7% of Chinese residents aged 60 years or older who were in need of care did not receive it; the care deficit was particularly large for women (17.2%) and rural residents (17%). Of those who received care, 94.3% were cared for by spouses, adult children, and relatives; only 5.7% used paid services provided by public welfare homes, private nursing homes, community service centers, or domestic workers. The utilization rate of paid elderly care was higher for men than women (7.8% versus 4.4%) and also higher

[11] General Office of State Council. General Office of State Council's Announcement of Circulating Social Eldercare Services System Program (2011–2015) (国务院办公厅关于印发社会养老服务体系建设规划 (2011–2015年) 的通知). http://www.gov.cn/zwgk/2010-11/24/content_1752377.htm (accessed 12 January 2016).

[12] The information is obtained from Tables A-2-2, A-1-7, and B2-2 in Ministry of Civil Affairs (2017).

Table 4: Patterns of Care by Type of Provider Received by Residents with Care Needs, 2015

	Total Aged 60+	Women	Men	Urban Residents	Rural Residents
Care deficit					
Without care	16.7	17.2	15.7	15.8	17.0
With care	83.4	82.8	84.3	84.2	83.0
Total	100.0	100.0	100.0	100.0	100.0
Care provision type					
Spouse only	37.5	29.3	51.2	34.9	38.7
Children only	39.4	49.6	22.5	44.8	37.3
Spouse and children	10.9	9.9	12.6	9.3	11.6
Other relatives only	4.6	4.8	4.0	2.0	5.5
Spouse or children jointly with relatives	1.9	1.8	1.9	0.7	2.3
Paid care* only	2.8	2.7	3.1	2.0	3.1
Paid care jointly with household members or relatives	2.9	1.7	4.7	6.4	1.4
Total	100.0	100.0	100.0	100.0	100.0
Observations	2,860	1,804	1,056	564	2,296

Note: Totals may not sum precisely because of rounding.

* Paid care refers to care provided by elderly care institutions, communities, volunteers, or domestic workers.

Source: The National School of Development, Peking University *China Health and Retirement Longitudinal Survey 2015*. Beijing.

for urban residents than rural residents (8.4% versus 4.5%). The family-based care provision cannot meet the demand of the elderly, who often suffer from multiple and concurrent diseases which require complex, long-term medical care.

E. Financing

As with health care, public financing of LTC in the PRC remains limited. Because national budget commitments for elderly care are lacking, public financing for elderly care mostly comes from the Public Welfare Lottery Fund and local budgets (Glinskaya and Feng 2018). It is estimated that the average public expenditure between 2006 and 2010 in the PRC stood at 133 $ purchasing power parity (PPP) per person aged 65 years or older and accounted for about 0.1% of GDP. In comparison, the respective statistics are 361.7 $ PPP and 0.2% of GDP for the Russian Federation; 450.2 $ PPP and 0.2% for South Africa; 7,945 $ PPP and 0.3% for the Republic of Korea; and 994.1 $ PPP and 0.7% for Japan (Table 5). Without adequate government funding, commercialized elderly care institutions have increasingly relied on individuals' out-of-pocket payments to generate revenues. A field study finds that individual payments and nongovernment resources contributed to more than 80% of daily operating revenues of elderly care institutions in Nanjing (Feng et al. 2011). Because care services delivery is a costly endeavor, the high proportion of out-of-pocket payments for elderly care services means that except for the poorest elders who are covered by publicly funded care services, institutional elderly care services are largely unaffordable for low- and medium-income families (Scheil-Adlung 2015).

Table 5: Aged Population, Public Expenditures for Long-Term Care, and Long-Term Care Workers in Selected Countries

	Population Aged 65+ as Share of Total Population, 2018[a] (%)	Public Expenditure for Long-Term Care per Person Aged 65+ ($ PPP)[b]	Public Expenditure for Long-Term Care as Share of GDP[b]	Formal Expenditure for Long-Term Care Workers per 100 persons Aged 65+[c]
China, People's Rep. of	10.9	133.0	0.1	1.2
Russian Federation	14.7	361.7	0.2	0.7
South Africa	5.3	450.2	0.2	0.4
Korea, Rep. of	14.4	7,945.0	0.3	3.6
Japan	27.6	994.1	0.7	5.9
Germany	21.5	1,826.0	0.9	5.2
United States	15.8	2,206.4	0.6	6.4
Median of 18 OECD countries	NA	NA	NA	4.2

GDP = gross domestic product, NA = no data available, OECD = Organisation for Economic Co-operation and Development.

[a] Data from the World Bank.

[b] Data from Scheil-Adlung (2015).

[c] Data for Germany, Japan, the Republic of Korea, and the United States are from OECD; data for the People's Republic of China are from *China Civil Affairs Statistical Yearbook 2017,* and data for the Russian Federation and South Africa are from Scheil-Adlung (2015).

Sources: World Bank. World Development Indicators Database. http://data.worldbank.org/datacatalog/world-development-indicators (accessed 10 May 2020); OECD. *Health Statistics 2019*. https://stats.oecd.org/Index.aspx?DataSetCode=HEALTH_LTCR (accessed 10 May 2020); Ministry of Civil Affairs. 2017. *China Civil Affairs Statistical Yearbook 2017.* Beijing; X. Scheil-Adlung. 2015. Long-Term Care Protection for Older Persons: A Review of Coverage Deficits in 46 Countries. *ESS Working Paper.* No. 50. Geneva: International Labour Organization. https://www.ilo.org/secsoc/information-resources/publications-and-tools/Workingpapers/WCMS_407620/lang--en/index.htm.

To improve access to LTC services, the central government proposed to establish a "multi-level long-term care insurance system" and carry out pilot LTC insurance in 15 cities and two key associated provinces across the country in 2016 (Luo and Wang 2021). In May 2020, the government expanded the original 15 pilot cities to a total of 29 cities and two key associated provinces throughout the country, with a pilot period of 2 years.[13] The LTC insurance program is funded based on equal contributions from employers and employees and will cover about 70% of the LTC costs for severely disabled adults.

F. Elderly Care Workforce

The development of LTC services has also been handicapped by the shortage of qualified and skilled care workers. In the PRC, as in many countries, the formal LTC workforce[14] is a low-pay and low-status occupation, and majority of LTC workers are less-educated, middle-aged women mostly from rural areas (Wu and Wei 2010). The recruitment and retention of care workers has been a major challenge for elderly care institutions (Zhang et al. 2018). From the statistics provided by the Ministry of Civil Affairs, in 2016, there were only 1.2 formal LTC workers per 100 persons aged 65 years or older in the PRC; in

[13] See State Health Insurance Bureau. *Guidelines on Expanding the Pilot of the Long-Term Care Insurance System.* http://renxinhealth.com/Detail/detail/id/25268 (accessed 9 February 2021). Draft.

[14] Formal LTC workers refer to care workers employed in public welfare homes, private nursing homes, and community service centers.

comparison, there were 3.6 formal LTC workers per 100 persons aged 65 or older in the Republic of Korea, 5.9 in Japan, 5.2 in Germany, and 6.4 in the United States (Table 5). The median number of Organisation for Economic Co-operation and Development (OECD) countries is 4.2 formal LTC workers per 100 persons aged 65 years or older (Scheil-Adlung 2015). Using this value as the benchmark, the formal LTC workforce in the PRC needs to increase dramatically from 1.741 million in 2016 to 10.332 million in 2030 to provide universal coverage to all persons aged 65 and over who are in need of care.[15] The shortage of qualified and skilled LTC workers has major implications for the quantity and quality of elderly care services provided, given the labor-intensive nature of care work.

IV. LABOR CONDITIONS OF HEALTH AND ELDERLY CARE WORKERS

This section presents the findings on employment, earnings, and working conditions of care workers in the health and social work industry in the PRC. Broadly speaking, the care workforce consists of "workers-for-profit or pay whose occupations involve providing a face-to-face service that develops the human capabilities of the care recipient – personal care or nurturing care" (ILO 2018). Based on this definition, the education and health and social work industries constitute the care sector. The care workforce includes people employed in the care sector, care workers employed outside the care sector (medical staff in a factory's clinic or preschool teachers in an employer-provided daycare), and domestic workers. For the purpose of this paper, we focus on workers employed in the health and social work industry. In the PRC, the workforce of the health and social work industry consists of those employed in health-care institutions, social welfare institutions for childless elders, orphans, the mentally ill, developmentally disabled adults without families, and elderly care institutions. We first document the employment trends and relative wages of the health and social work industry in the PRC and then examine the pay and working conditions for medical staff and elderly care workers. We also explore gender differences in labor market conditions for the two types of care workers. The analysis seeks to shed light on the underlying causes of the shortage of health and elderly care workers in the PRC.

A. Trends in Employment and Wages in the Health and Social Work Industry

We first examine the employment and wages of the health and social work industry from a macroeconomic perspective using published statistics and unpublished data from *China Population Census* of various years. Table 6 presents the trends in employment in the health and social work, education, and construction industries for 1990–2016. We report the trends in employment of the education and construction industries for comparison purposes. De Henau et al. (2016) and De Henau, Himmelweit, and Perrons (2017) have showed that public investment in social and physical infrastructure can have a strong positive effect on employment in the education, health and social work, and construction industries. In their analysis, social infrastructure refers to education, health, and care services, while physical infrastructure refers to the construction industry. As indicated in Table 6, during the period under investigation, in health and social work and in education, employment growth was more sluggish compared to the construction industry. Between 1990 and 2016, employment in

[15] The estimates are based on the statistics that the population aged 65 and above numbered 166.58 million in 2018 and are projected to increase to 246 million by 2030.

the health and social work industry increased from 7.931 million to 13.992 million, up by 76%, and employment in the education industry increased from 14.321 million to 20.259 million, up by 41%. In contrast, employment in the construction industry increased from 10.107 million to 51.845 million, up by 413%. The growth gap between the two types of workforce was, to a certain extent, reflective of an unbalanced development between social and physical infrastructure in the PRC. While public investment in physical infrastructure is crucial to spur economic growth, especially at the early stage of development, as the country has transformed from a low-income to an upper-middle-income country, a more balanced investment in social and physical infrastructure is warranted. Encouragingly, the supply of frontline care workers—nurses and LTC workers—has significantly increased in recent years, with the number of registered nurses increasing by 260%, from 0.975 million in 1990 to 3.507 million in 2016, and the LTC workforce up by 503%, from 0.289 million in 2000 to 1.741 million in 2016. However, we must emphasize that nurses and LTC workers remain in short supply.

Table 6: Employment Trends in Selected Industries, 1990–2016
(per 1,000 persons)

	1990	2000	2010	2016	2016–1990	2016–2000
Health and social work	7,931	8,944	10,548	13,992	1.76	1.56
Medical staff[a]	6,138	6,910	8,208	11,173	1.82	1.62
Licensed Doctors[a]	3,066	3,679	4,386	5,842	1.91	1.59
Registered nurses[a]	975	1,267	2,048	3,507	3.60	2.76
Social services[b]	1,793	2,034	2,340	2,819	1.57	1.38
Long-term care workers[b]	–	289	572	1,742	–	6.03
Education[c]	14,321	15,735	17,816	20,259	1.41	1.29
Construction[d]	10,107	19,943	41,604	51,845	5.13	2.60

– = data not available.

[a] Data from *China Health Statistical Yearbook 2017* (Table 2-1-1).
[b] Data from *China Civil Affairs Statistical Yearbook 2001* (Table B-5) and 2017 (Table A-1-7).
[c] Data from *China Education Statistical Yearbook* (1991, 2001, 2011, 2017).
[d] Data from *China Statistical Yearbook* (1991, 2001, 2011, 2017).

Notes: The employment of health and social work is equal to the sum of medical staff and social services. Long-term care workers are the sum of workers employed at the institutions providing care for the disabled and infirm elders and workers employed at community services centers for the disabled and infirm elders.

Sources: National Health and Family Planning Commission. *China Health Statistical Yearbook 2017. Beijing;* Ministry of Civil Affairs. 2017. *China Civil Affairs Statistical Yearbook 2017.* Beijing; Ministry of Education. Various years. *China Education Statistical Yearbook.* Beijing. National Bureau of Statistics. Various years. *China Statistical Yearbook*. Beijing.

We next examine the trends in employment of the health and social work industry relative to other service industries by comparing changes in the share of an industry in total employment. In developed countries, the massive entry of women into the labor force has been associated with the expansion of the services sector, particularly the rise of professional care service industries such as education, health, childcare, and elderly care (Folbre and Nelson 2000). Over the past 4 decades, the Chinese economy has undergone dramatic structural changes, with hundreds of millions of workers leaving the agriculture sector and moving into the industrial and service sectors. As Table 7 indicates, the share of the agriculture sector in total employment decreased from 71.5% to 36.7% between 1982 and 2015, and in its place had been the rising employment share for all nonagricultural industries. However, the employment expansion of two care service industries (health and social work, and education) has lagged behind the growth of not only the manufacturing and construction industries but also all other service industries. Between 1982 and 2015, the share of the health and social work

industry in total employment increased from 0.8% to 1.6%, up only by 0.8 percentage point and the share of the education industry increased from 2.2% to 2.9%, up only by 0.7 percentage point. In contrast, the employment share of more market-oriented services industries, such as the low-skilled accommodation and catering industry or the high-skilled information and communication technology, or finance and real estate industries, has increased from 0.4% to 3.8%, up by 3.4 percentage points. Despite the relative sluggish growth, the expansion of the education and health and social industries has created more professional job opportunities for women, raising their employment share in the health and social work industry from 48% in 1982 to 64% in 2015, and their share in the education industry from 36% to 60%.

Table 7: Changes in Employment Distribution by Industry and Women's Share, 1982–2015
(%)

	1982		1990	
	Share of Total Employment	Women's Share	Share of Total Employment	Women's Share
Agriculture, fishery, forestry, and animal husbandry	71.5	46	70.1	47
Manufacturing	11.8	44	12.0	45
Construction	2.1	19	1.8	16
Mining and utility	2.1	20	1.5	22
Health and social work	0.8	48	0.8	54
Education	2.2	36	2.1	42
Hotels and catering	0.4	58	0.7	57
ICT, research and development, finance, and real estate	0.4	34	0.6	38
Other service industries	8.8	33	10.4	35
Total	**100.0**	**44**	**100.0**	**45**

	2000		2010		2015	
	Share of Total Employment	Women's Share	Share of Total Employment	Women's Share	Share of Total Employment	Women's Share
Agriculture, fishery, forestry, and animal husbandry	62.3	48	46.0	49	36.7	48
Manufacturing	12.5	46	16.9	44	18.1	41
Construction	2.7	11	5.5	14	7.5	13
Mining and utility	1.8	23	1.8	22	1.8	20
Health and social work	1.0	56	1.1	60	1.6	64
Education	2.3	50	2.3	55	2.9	60
Hotels and catering	1.6	54	2.7	54	3.8	52
ICT, research and development, finance, and real estate	1.1	42	2.4	42	3.8	41
Other service industries	15.0	39	21.3	43	26.7	43
Total	**100.0**	**45**	**100.0**	**45**	**100.0**	**43**

ICT = information and communication technology.

Note: Totals may not sum precisely because of rounding.

Source: National Bureau of Statistics. Various years. *China Population Census*. Beijing.

Comparatively, the size of the workforce of the education and health and social work industries in the PRC as an upper-middle-income country is relatively small by international standards. Based on the ILO's estimates for 2018 (Table 8), the employment of the education and health and social work industries accounted for 4.64% and 2.3% of the PRC's total employment, respectively,[16] which are lower than the respective world average of 5.24% and 4.04%, and much lower than the levels of other countries at a similar stage of development.

Table 8: Employment Share of the Education and Health and Social Work Industries for Selected Countries, 2018

(%)

	Education	Health and Social Work
China, People's Rep. of	4.64	2.30
Brazil	6.92	5.03
Russian Federation	7.76	6.02
South Africa	5.66	6.38
Korea, Rep. of	6.89	7.63
Japan	6.24	16.14
Germany	6.72	13.01
United States	8.93	13.89
World Average	5.24	4.04

Note: The numbers for the PRC are the estimated values and the rest are the real values.

Source: ILOSTAT. Employment Distribution by Economic Activity—ILO Modelled Estimates. Geneva: International Labour Organization. https://ilostat.ilo.org/data (accessed 14 May 2020).

Table 9 presents wage levels of the health and social work, education, and selected non-care industries in the urban sector relative to the average of all industries for the period from 2003 to 2017. Workers in the health and social work industry were paid more than average, and also more than workers in the education, accommodation and catering, manufacturing, and construction industries, but less than workers in the information and technology, and finance and insurance industries. The wage levels of the health and social work industries appear to have grown faster relative to all other industries except for education and finance and insurance. Nevertheless, the relative wage level of the health and social work industry in the PRC—at 120% of the average wage of all industries in 2017—was lower than the wage levels in other emerging economies, for instance, 127% in Brazil, 187% in Costa Rica, 126% in Indonesia, and 155% in South Africa (De Henau et al. 2017). Thus, an increase of public investment in social infrastructure will not only alleviate the shortage of health and care workers but also improve women's position in the labor market in the PRC.

[16] The ILO's estimates are a bit higher than the employment shares of the education and health and social work industries derived from the PRC's population census in 2015.

Table 9: Relative Wages in Selected Industries for Urban Workers

Sector	2003	2010	2015	2017
All industries	100.0	100.0	100.0	100.0
Health and social work	115.9	110.1	115.5	120.6
Education	101.6	106.6	107.4	112.2
Accommodation and catering	80.2	64.0	65.8	61.6
Information and technology	221.2	176.3	180.6	179.2
Finance and insurance	148.8	192.0	185.0	165.3
Manufacturing	90.7	84.6	89.2	86.7
Construction	81.1	75.3	97.3	74.8

Source: National Bureau of Statistics. Various years. *China Labor Statistical Yearbook*. Beijing.

B. Care Workers in the Health Sector

We now examine labor market conditions for doctors and nurses in the PRC using data from the *China Medical Staff Survey 2013*, which is a part of the National Health Services Survey conducted every 5 years by the National Health and Family Planning Commission (and its predecessor, Ministry of Health) since 1993.[17] The *China Medical Staff Survey 2013* covers 156 counties and cities selected from 31 provinces and autonomous regions in the PRC using a multistage stratified cluster random sampling method. The survey interviewed the medical staff randomly selected from all the tertiary general hospitals, all the community health centers, and selected secondary hospitals and township hospitals in the sample localities. The sample for our analysis consists of 15,768 medical staff members, with 5,891 men and 9,877 women.

Table 10 presents summary statistics of characteristics of the medical staff in the sample. In line with the result from the 2015 population census presented earlier, women accounted for 62.6% of the medical staff in the sample. Compared with their male counterparts, women medical staff were, on average, younger, less experienced, and less educated. The presence of vertical occupational segregation by gender was evident for a number of indicators. With respect to accreditation, 57.2% of the licensed doctors were men, whereas almost all registered nurses (98.7%) were women. In terms of tenure status, men were more likely than women to be permanent staff (85.3% versus 75%), whereas women were more likely than men to hold a temporary position (25.3% versus 14.7%). In terms of specialty, 89.5% of the male medical staff and 38.2% of the female staff specialize in clinic care. In nursing, the proportion of males was 1.3% and the proportion of females was 49.6%. For public health, the proportion of males was 9.2%, while the proportion of females was 12.2%. In terms of organization type, men were more likely than women to work in hospitals (60.6% versus 56.6%), whereas women were more likely than men to work in community health centers. In short, men were overrepresented at the upper levels of the hierarchy within medical professions, while women were crowded at the lower levels of the hierarchy.

[17] The latest medical staff survey was conducted in 2018 and the survey results have not yet been publicly released.

Table 10: Characteristics of Medical Staff

	Total	Men	Women
Gender	100.0	37.4	62.6
Mean age	38.3	42.8	36.1
Mean years of experience	14.7	16.0	13.9
Education			
Doctorate	1.3	2.1	0.8
Master's degree	6.3	9.6	4.4
Baccalaureate	44.3	50.1	40.9
Junior college	33.1	25.7	37.5
Vocational or senior high school or lower	14.9	12.4	16.5
Accreditation			
Licensed doctor	43.9	67.3	30.0
Licensed assistant doctor	6.8	9.8	5.0
Licensed doctor of traditional Chinese medicine	6.6	10.8	4.1
Licensed assistant doctor of traditional Chinese medicine	0.8	1.4	0.4
Registered nurse	33.4	1.2	52.6
Other	8.6	9.5	8.0
Tenure status			
Permanent staff	78.8	85.3	75.0
Temporary staff	21.3	14.7	25.3
Specialty			
Clinical care	57.4	89.5	38.2
Nursing	31.6	1.3	49.6
Public health	11.1	9.2	12.2
Organization type			
Hospital	58.1	60.6	56.6
Community health center	18.6	12.9	22.0
Township health center	23.3	26.5	21.5
Observations	15,768	5,891	9,877

Source: National Health and Family Planning Commission. 2013. *China Medical Staff Survey 2013.* Beijing.

Table 11 reports average working hours and annual earnings of the medical staff in the sample. Both men and women worked long hours, 54.1 hours per week for men and 48.1 hours per week for women, with men on average taking 5.5 night shifts per month and women taking 4.4 night shifts. The average annual earnings of medical staff were CNY43,034 and the median annual earnings were CNY35,000.[18] Male medical staff on average earned 12.7% more than female medical staff, although the actual gender earnings gap may be much larger, given that men dominate the positions at the upper levels of the professional hierarchy, and which have more opportunities to receive discretionary compensations. Regardless, the average earnings of the medical staff varied widely by accreditation, specialty, and organization type, and were relatively low for women-dominated categories such as nurses and public health.

[18] The actual average earnings of medical staff may be higher than what the respondents reported, given that many Chinese doctors received discretionary compensations either from pharmaceutical sales agents or from patients' gratuities.

Table 11: Average Working Hours and Earnings of Medical Staff

	All	Men	Women
Working hours per week	50.4	54.1	48.1
Number of night duty per month	4.8	5.5	4.4
Average earnings (yuan/year)	43,034	46,306	41,070
Median earnings (yuan/year)	35,000	38,000	33,000
Observations	15,768	5,891	9,877
	Average Earnings (yuan/year)	**Women's Employment Share** (%)	
By accreditation			
Licensed doctor	51,082	42.8	
Licensed assistant doctor	31,941	46.1	
Licensed doctor of traditional Chinese medicine	42,858	38.6	
Licensed assistant doctor of traditional Chinese medicine	28,606	30.5	
Registered nurse	38,860	98.6	
By specialty			
Clinical care	47,055	41.7	
Nursing	39,012	98.5	
Public health	33,858	68.9	
By organization type			
Hospital	48,439	61.0	
Community health center	40,773	74.0	
Township health center	31,694	57.6	

Note: Average wages of urban units are from *China Statistical Yearbook 2014*, and the rest are from *China Medical Staff Survey 2013*.

Sources: National Bureau of Statistics. 2014. *China Statistical Yearbook 2014.* Beijing; National Health and Family Planning Commission. 2013. *China Medical Staff Survey 2013.* Beijing.

Table 12 presents summary statistics on job satisfaction, stress, and employee turnover intention of medical staff, revealed by their responses to a list of subjective questions. From the table, 79.3% of the medical staff agreed, in various degrees, with the statement "I am very satisfied with the work I am doing" and the difference between the responses of men and women was negligible. However, majority of medical staff (57.9%) disagreed, in various degrees, with the statement "I am very satisfied with the compensation I received from the hospital," wherein the proportion of men choosing "strongly disagree" was noticeably higher than that of women (23.5% versus 18.2%). In terms of work stress, 83.3% of the medical staff agreed with the statement "I feel a lot of stress at work," 49.3% agreed with the statement "I am nervous about my work," and 54.9% agreed with the statement "I cannot fall asleep because of work." The work seems more stressful for men than for women as there are noticeably more men than women who strongly agreed with the aforementioned statements. Dissatisfaction with compensation and work stress are the common drivers of labor turnover. Unsurprisingly, 29.8% of the medical staff expressed intention to leave the hospital, 37% expressed the intention to leave the occupation they were in, 34.6% indicated that they often want to change their job, and 15.9% indicated that they were likely to find a new job next year. In line with the gender difference in compensation dissatisfaction and work stress, men had a greater intention to quit the job than women.

Table 12: Job Satisfaction, Stress, and Turnover Intention of Medical Staff

	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
I am very satisfied with the work I am doing.						
All	3.9	5.5	11.3	17.7	35.5	26.1
Men	4.6	5.7	10.9	17.7	34.7	26.5
Women	3.5	5.4	11.5	17.8	36.0	25.9
I am very satisfied with the compensation I receive from the hospital.						
All	20.2	15.3	22.4	18.6	17.4	6.2
Men	23.5	15.3	21.4	17.6	16.6	5.6
Women	18.2	15.2	22.9	19.1	17.9	6.5
I feel a lot of stress at work.						
All	2.4	4.5	9.9	22.4	28.3	32.6
Men	1.9	3.5	7.3	18.8	28.9	39.6
Women	2.7	5.0	11.4	24.6	28.0	28.3
I am nervous about my work.						
All	13.8	14.5	22.4	21.6	14.5	13.2
Men	11.3	13.9	20.5	21.3	16.6	16.4
Women	15.2	14.8	23.6	21.7	13.2	11.4
I cannot fall asleep because of work.						
All	11.8	13.8	19.6	23.4	16.7	14.8
Men	9.8	12.7	18.0	23.6	18.3	17.6
Women	12.9	14.4	20.5	23.2	15.7	13.2
I often want to leave this hospital.						
All	30.1	19.3	20.8	16.3	6.5	7.0
Men	26.4	18.7	21.2	17.6	7.5	8.5
Women	32.3	19.7	20.5	15.5	6.0	6.1
I often want to leave the occupation I am in.						
All	28.4	16.9	16.8	18.0	8.8	11.1
Men	27.6	16.0	16.3	17.1	9.3	13.6
Women	28.8	17.4	17.1	18.5	8.5	9.6
I often want to change my job.						
All	30.7	17.4	17.4	17.1	8.3	9.2
Men	28.8	16.8	17.5	16.8	9.0	11.0
Women	31.7	17.7	17.3	17.3	7.8	8.1
I am likely to find a new job next year.						
All	47.4	18.5	18.3	9.5	3.0	3.4
Men	43.8	18.6	19.2	10.6	3.3	4.5
Women	49.5	18.5	17.8	8.8	2.8	2.6

Source: National Health and Family Planning Commission. 2013. *China Medical Staff Survey 2013.* Beijing.

Table 13 presents the medical staff's assessment on the extent to which their work interferes with their family life. The responses to each statement presented in the table show that the medical staff were

experiencing acute work–family conflicts. For example, 70.2% of the medical staff agreed or strongly agreed with the statement "The time I spend at work inevitably affects my time for family activities" and 64.3% agreed or strongly agreed with the statement "Because of all the pressures at work, sometimes even when I get home, I don't want to do things I like." Consistent with the finding that men worked longer hours and took more night shifts than women, the proportion of men who strongly agreed with the aforementioned statements was higher than that of women.

Table 13: Assessment of Work–Family Balance among Medical Staff
(%)

	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Disagree
My job prevents me from attending family activities more than I thought.					
All	6.3	11.7	15.1	31.4	35.5
Men	5.3	9.1	14.0	31.1	40.5
Women	7.0	13.3	15.7	31.5	32.5
The time I spend at work inevitably affects my time for family activities.					
All	5.0	11.8	12.9	33.8	36.4
Men	3.7	8.9	11.5	33.7	42.2
Women	5.8	13.5	13.8	33.9	33.0
As I have to spend my time at work, I often miss family activities.					
All	4.4	11.4	12.6	34.6	37.0
Men	3.5	8.2	11.6	34.1	42.7
Women	5.0	13.3	13.3	34.9	33.5
When I get out of work, I am often too tired to take part in activities at home.					
All	5.7	15.8	14.9	32.6	31.1
Men	5.1	14.1	15.6	32.5	32.7
Women	6.0	16.8	14.4	32.6	30.2
Because of all the pressures at work, sometimes even when I get home, I don't want to do things I like.					
All	6.7	15.4	13.6	33.5	30.8
Men	6.4	15.0	14.4	33.0	31.2
Women	6.9	15.6	13.1	33.8	30.5

Source: National Health and Family Planning Commission. 2013. *China Medical Staff Survey 2013.* Beijing.

Table 14 presents the medical staff's assessment of doctor–patient relationship. From the responses to the questions concerning the staff's relationship with patients, the proportion of the respondents holding a positive view was much higher than that of those holding a negative view. For instance, 49.1% of the respondents considered their patients being "very respectful" or "respectful," while only 9.7% considered their patients "disrespectful" or "very disrespectful"; 47.9% expressed the view that their patients were "very trusting" or "trusting" of their services , while only 9.8% held the view that their patients were "distrustful" or "very distrustful." However, an opposite pattern emerges from the responses to the questions concerning general doctor–patient relationship. Only 19% of the respondents viewed the current doctor–patient relationship as "very good" or "good," while 43.7% viewed the relationship as "bad" or "very bad." More disturbingly, there were more respondents considering the situation getting worse over time than those considering the situation getting better. Specifically, 44.8% of the respondents felt that compared to 5 years ago, the level of respect society has with medical staff had "slightly or significantly decreased," while 23.5% felt that it had "slightly or

Table 14: Assessment of Doctor–Patient Relationship among Medical Staff
(%)

Assess the level of patient's respect for you.					
	Very Respectful	**Respectful**	**Neither Respectful Nor Disrespectful**	**Disrespectful**	**Very Disrespectful**
All	8.5	40.6	41.1	6.8	2.9
Men	9.3	42.4	38.7	6.5	3.2
Women	8.0	39.6	42.6	7.0	2.8
Assess the level of patient's trust in your services.					
	Very Trusting	**Trusting**	**Neither Respectful Nor Disrespectful**	**Distrustful**	**Very Distrustful**
All	6.9	41.0	42.4	7.2	2.6
Men	7.4	43.2	38.9	7.2	3.2
Women	6.6	39.6	44.4	7.2	2.2
What do you think of the current doctor–patient relationship?					
	Very Good	**Good**	**Neither Respectful Nor Disrespectful**	**Bad**	**Very Bad**
All	3.6	15.4	37.3	27.5	16.2
Men	2.8	13.0	32.3	29.0	23.0
Women	4.0	16.9	40.4	26.6	12.1
Compared to 5 years ago, you feel the level of respect society has with medical staff has					
	Significantly Increased	**Slightly Increased**	**No Change**	**Slightly Decreased**	**Significantly Decreased**
All	3.4	20.5	31.4	27.6	17.2
Men	2.7	18.1	30.3	28.0	20.9
Women	3.8	21.9	32.0	27.4	14.9
Compared to 5 years ago, you feel the social status of medical staff has					
	Significantly Increased	**Slightly Increased**	**No Change**	**Slightly Decreased**	**Significantly Decreased**
All	2.3	16.0	33.6	29.3	18.8
Men	1.9	14.1	31.6	30.3	22.1
Women	2.6	17.1	34.8	28.7	16.8
Compared to 5 years ago, you feel the doctor–patient relationship has					
	Significantly Improved	**Slightly Improved**	**No Change**	**Slightly Deteriorated**	**Significantly Deteriorated**
All	3.9	21.7	24.7	31.7	18.0
Men	2.9	18.4	24.8	31.9	21.9
Women	4.4	23.7	24.6	31.6	15.6

Source: National Health and Family Planning Commission. 2013. *China Medical Staff Survey 2013.* Beijing.

significantly increased." Moreover, 48.1% felt that compared to 5 years ago, the social status of medical staff had "slightly or significantly decreased," while 18.3% thought that it had "slightly or significantly increased." Lastly, 49.7% of the respondents felt that compared to 5 years ago, the doctor–patient relationship had "slightly or significantly deteriorated," while 25.6% felt that the relationship had "slightly or significantly improved."

Table 15 presents self-reported incidence of patient violence against the medical staff in the sample. Overall, 21.2% of the respondents reported that they had encountered verbal abuse by patients in the last 6 months, 0.7% had suffered physical assault, and 3.9% had suffered both. Male medical staff appear more vulnerable to patient violence than their female counterparts: 30.3% of the male respondents reported having encountered at least one type of violence compared with 23.1% of the female respondents.

Table 15: Patient Violence against Medical Staff
(%)

	Verbal Abuse	Physical Assault	Both	Neither
All	21.2	0.7	3.9	74.2
Men	23.8	1.0	5.6	69.7
Women	19.7	0.5	2.9	76.9

Source: National Health and Family Planning Commission. 2013. *China Medical Staff Survey 2013.* Beijing.

C. Care Workers in Elderly Care Institutions

In the remainder of this section, we examine the characteristics of labor market conditions for care workers employed in elderly care institutions in Beijing. Our analysis relies on data from the *Beijing Elderly Care Institutions Census 2016* conducted by Beijing Normal University on behalf of the Beijing Civil Affairs Bureau in 2016. The census collected institution-level information on ownership type, operational scale, personnel, medical equipment and facilities, fees and services, and operation and management of all elderly care institutions—public welfare homes, private nursing homes, and community service centers—located in areas under the jurisdiction of the Beijing municipality. The sample available for our analysis consists of 460 public welfare homes and private nursing homes, excluding community service centers. Of the 460 elderly care institutions, 237 were publicly owned, 214 were privately owned, and nine were owned by rural township governments (hereafter termed "rural collective"). Most of the publicly owned elderly care institutions in the sample were operated by private entrepreneurs. Both public and private elderly care institutions mainly served the urban elderly, while rural collective institutions served the rural elderly and also took in self-paying urban customers.

Table 16 presents the average employment and composition of employees in elderly care institutions in Beijing. Each elderly care institution in the sample, on average, had 30.3 employees, composed of 4.5 administrative personnel, 1.5 doctors, 2 nurses, and 17.4 care workers. By ownership, there were 48.4 employees per institution for rural collective institutions, 39 employees per institution for private institutions, and 21.8 employees per institution for public institutions. Comparatively, private elderly care institutions on average had more doctors and nurses than public and rural collective institutions, indicating that the former provided more medical services for the residents than the latter.

Table 16: Composition of Employees in Elderly Care Institutions in Beijing

	Total	Public	Private	Rural Collective
Average number of employees	30.3	21.8	39.00	48.4
Average number of administrative personnel	4.5	3.6	5.6	4.4
Average number of doctors	1.5	1.0	2.2	1.5
Full-time	1.2	0.8	1.7	0.9
Part-time	0.3	0.2	0.5	0.6
Average number of nurses	2.0	1.5	2.5	1.3
Full-time	1.8	1.4	2.3	1.3
Part-time	0.2	0.1	0.2	0.0
Average number of care workers	17.4	13.4	21.2	31.7
Full-time	16.9	12.9	10.6	31.7
Part-time	0.5	0.5	0.6	0.0
Observations	460	237	214	9

Source: Beijing Normal University. 2016. *Beijing Elderly Care Institutions Census 2016.* Beijing: Beijing Civil Affairs Bureau.

Table 17 presents characteristics of the live-in elderly residents served by the institutions. Each institution in the sample, on average, had 89.9 elderly residents, with 46.6% men and 53.4% women. In terms of physical conditions, 31.9% of the residents were capable of taking care of themselves physically, 33.1% were semi-capable of self-care, and 34.9% were totally incapable of self-care. On average, 14.1% of the residents had dementia and 51.1% were aged 80 years or older. In terms of the variation by ownership, there were, on average, 175.9 residents per institution for rural collective institutions, 116.2 residents per institution for private institutions, and 63.2 residents per institution for public institutions. Public and rural collective institutions had a higher proportion of residents who were capable of self-care than private institutions because the former were obligated to take in the indigent childless elderly who may not be functionally disabled.

Table 17: Characteristics of Residents Served by Elderly Care Institutions in Beijing

	Total	Public	Private	Rural Collective
Average number of residents	89.9	63.2	116.2	175.9
Female residents (%)	53.4	49.6	55.5	57.3
Physical conditions (%)				
Capable of self-care	31.9	34.7	29.5	42.3
Semi-capable of self-care	33.1	35.5	32.8	16.4
Incapable of self-care	34.9	29.8	37.7	41.3
Residents with dementia (%)	14.1	12.2	16.2	2.2
Age				
60–69	17.7	19.4	16.9	14.1
70–79	31.2	31.2	31.7	24.6
80–89	42.0	40.7	42.1	50.4
90+	9.1	8.6	9.3	10.9
Observations	460	237	214	9

Source: Beijing Normal University. 2016. *Beijing Elderly Care Institutions Census 2016.* Beijing: Beijing Civil Affairs Bureau.

Table 18 presents the characteristics of care workers employed in the elderly care institutions in Beijing. For the sample as a whole, 75.4% of the care workers were women, 67.5% were rural migrants from other provinces, 62.9% only had a junior high school education or lower, and 78% were aged 40 years or older. In terms of qualification, 59.1% of the care workers had a caregiver certificate, 34.8% did not have a caregiver certificate but received elderly care training, and the remaining 6.1% did not have a caregiver certificate nor had any training. In terms of workload, each care worker, on average, took care of 5.2 live-in residents. No appreciable variations were observed in the average characteristics of care workers across ownership types.

Table 18: Characteristics of Care Workers Employed in Elderly Care Institutions in Beijing

	Total	Public	Private	Rural Collective
Average number of care workers	17.4	13.4	21.2	31.7
Female workers (%)	75.4	73.6	76.0	88.4
Education (%)				
Junior high school or lower	62.9	68.4	59.0	62.6
Senior high school	30.4	24.7	34.3	32.4
College and above	6.7	6.9	6.7	5.0
Age				
29 or younger	7.9	7.7	7.7	11.2
30–39	14.1	13.4	14.0	21.4
40–49	44.3	45.2	43.0	54.0
50–59	30.2	30.3	31.2	13.0
60 or older	3.6	3.3	4.0	0.4
Qualification (%)				
Have care provider certificate	59.1	59.8	57.2	80.7
No care provider certificate but received training	34.8	28.6	40.2	18.6
No certificate, no training	6.1	11.6	2.6	0.7
Migrants (%)	67.5	51.5	78.6	63.4
Number of elder residents per care worker	5.2	4.8	5.4	5.6
Observations	460	237	214	9

Source: Beijing Normal University. 2016. *Beijing Elderly Care Institutions Census 2016.* Beijing: Beijing Civil Affairs Bureau.

Table 19 reports the average wages of care workers employed in elderly care institutions in Beijing. The census reported the average wage net of income tax and social insurance premiums of each institution in the sample. Using this information, we calculated two types of average wage: (i) the weighted average of after-tax wages for each relevant group, with each institution's share of the total number of care workers in the group as the weight; and (ii) a simple average of the average after-tax wages of institutions in the group. From the table, we note that the two measures are very similar. For the sample as a whole, the weighted average of after-tax wages was CNY2,995 per month and the simple average of after-tax wages was CNY2,935 per month.[19] Both measures were slightly lower than the median after-tax wage of CNY3,000 per month that divided the sample into two equal halves. The average after-tax wage of each institution varied widely, ranging from the lowest value of CNY1,000 per month to the highest

[19] The exchange rate with the US dollar is provided in footnote 8.

value of CNY5,100 per month. By any measure, the average wage of the care workers was low, at only about 52% of Beijing's average after-tax wage in 2016.[20] With such low wages, it would be hard for elderly care institutions to recruit and retain skilled care workers, not to mention that taking care of the elderly, especially of those who are functionally disabled, is arduous. Low wages and the grueling nature of elderly care work also explain why the workforce is predominately comprised of older migrant women with low levels of education, who are part of a disadvantaged socioeconomic group that lacks alternative employment opportunities.

Table 19: Average Wage of Care Workers in Elderly Care Institutions in Beijing
(CNY)

	Total	Public	Private	Rural Collective
Average wage of all care workers in respective group (yuan/month)	2,995	2,946	3,171	2,833
Average wage in the institutions	2,935	2,813	3,049	2,550
Median wage in the institutions	3,000	2,800	3,000	2,100
Highest average wage in the institutions	5,100	5,100	5,000	4,000
Lowest average wage in the institutions	1,000	1,000	1,600	1,500
2016 Beijing minimum wage	1,890			
2016 Beijing average wage net of income tax and insurance premiums	5,790			
Observations	460	237	214	9

CNY = Chinese yuan.

Source: Beijing Normal University. 2016. *Beijing Elderly Care Institutions Census 2016.* Beijing: Beijing Civil Affairs Bureau.

Why were the wages for elderly care workers so low? To shed light on this question, we take a look at the cost structure and financial situation of the elderly care institutions (Table 20). As indicated in the table, staff wages were the largest component of the institutions' operation costs, on average, accounting for 51.2% of the total costs for the full sample, 57.3% for public institutions, 44.2% for private institutions, and 58.2% for rural collective institutions. The table lists various subsidies and support elderly care institutions received from the government. Numerically, 82% of the institutions in the sample had received some type of subsidy, with 78% for public institutions, 86% for private institutions, and 78% for rural collective institutions. The average amount of subsidies stood at 15.9% of the operating cost for the sample as a whole, 17.1% for public institutions, 15.7% for private institutions, and 22.1% for rural collective institutions. For a majority of elderly care institutions in the sample, however, the amount of government subsidies received was insufficient to bridge the gap between revenues and operation costs. Financially, 62.9% of all elderly care institutions were reportedly running "slight losses" or "heavy losses," and the proportion of elderly care institutions in such dire financial situations was 62.8% for public institutions, 64.2% for private institutions, and 37.5% for rural collective institutions. The precarious financial situation restrained the ability of elderly care institutions to raise wages for care workers.

[20] Beijing's 2016 average pretax wage was CNY7,706. See Beijing Municipal Human Resources and Social Security Bureau and Beijing Statistics Bureau. http://rsj.beijing.gov.cn/xxgk/tzgg/201912/t20191207_954557.html (accessed 25 June 2020).

Table 20: Operating Costs and Financial Situation of Elderly Care Institutions in Beijing

	Total	Public	Private	Rural Collective
Average total costs (CNY1,000/year)	2,929.3	2,122.7	3,871.4	3,353.9
Distribution (%)				
Staff wages	51.2	57.3	44.2	58.2
Water and electricity	10.7	10.6	12.9	7.04
Rent	16.8	6.6	22.9	0.00
Taxes	0.5	0.5	1.8	0.4
Other	20.8	25.0	18.2	34.3
Total	100.0	100.0	100.0	100.0
Financial condition (%)				
Profitable	4.1	3.2	4.3	25.0
Breakeven	33.0	34.1	31.6	37.5
Slight loss	32.5	35.5	29.7	25.0
Serious losses	30.4	27.3	34.5	12.5
Total	100.0	100.0	100.0	100.0
Proportion received subsidies (%)	82.0	78.0	86.0	78.0
Average subsidies (CNY1,000/year)*	464.43	363.38	607.67	741.91
Subsidies as share of operating costs (%)	15.9	17.1	15.7	22.1
Receive other government support (%)				
Business tax reduction	61.9	58.4	66.0	55.6
Enterprise income tax reduction	36.7	38.4	36.0	11.1
Preferential tariff for water and electricity, etc.	43.2	42.6	43.4	55.6
Real estate tax reduction	15.4	17.0	12.9	33.3
Other supports	1.7	1.8	1.6	0.0
Actual beds utilization rate (%)	49.7	47.6	49.8	100.0
Observations	460	237	214	9

CNY = Chinese yuan.

Note: 1 = CNY6.46 as of 7 September 2021.

Source: Beijing Normal University. 2016. *Beijing Elderly Care Institutions Census 2016.* Beijing: Beijing Civil Affairs Bureau.

Many elderly care institutions were running financial losses because they were unable to operate at full capacity. For the sample as a whole, the elderly care institutions on average operated only at half their capacity, as the average actual beds utilization rate was reportedly only 49.7% of the full capacity for the sample as a whole, 47.6% for public institutions, and 49.8% for private institutions. Only rural collective institutions operated at full capacity because their customers were predominately rural welfare elderly for whom the services were paid by the government.[21]

The capacity underutilization can be attributed to a number of factors. First, there is a shortage of professional caregivers in elderly care institutions. Because the wages for elderly care workers are low, the job remains unattractive and the turnover rate is high. The shortage of elderly care workers is especially acute in low-end private elderly care institutions. In addition, elderly care institutions have a hard time

[21] Capacity utilization is, in fact, a nationwide phenomenon. From the Ministry of Civil Affairs' regular press conference for the third quarter of 2020, as of the end of July 2020, there were 4.291 million beds in China's elderly care institutions, but only 2.146 million elderly people were admitted, and the vacancy rate of old-age beds reached almost 50%.

recruiting and retaining male workers. The shortage of labor prevents elderly care institutions from admitting new patients. Second, many elderly care institutions are located in urban suburbs. These institutions have a high vacancy rate because the elderly prefer to live in their own neighborhoods as long as they can (Lum 2014, Yu 2017). Lastly, there is a lack of effective demand for institutional elderly care services as good quality services are costly and therefore are largely unaffordable for low- and middle-income families. However, low-cost services usually mean low quality of care services. The low-quality services would make institutional elderly care a poor substitute for unpaid family care or paid services provided by domestic workers.

These findings from the *Beijing Elderly Care Institutions Census 2016* vividly illustrate the vulnerability of paid care services in poorly regulated markets to low-pay and low-quality outcomes as discussed in section II.

V. CONCLUSIONS AND RECOMMENDATIONS

This paper explored the main characteristics of the health and elderly care workers and the labor market conditions in the PRC. The analysis shows that the health and elderly care workforce is female-dominated; almost all nurses are women and the elderly care workforce is predominately older migrant women with a junior high school education or lower. The health-care workers experience poor labor market conditions, making many doctors and nurses want to leave the medical profession. The institutional elderly care sector appears to find itself in a vicious circle of low-pay, low-quality services, and low effective demand, as it is evident that majority of elderly care institutions in Beijing could not break even, and many of them operate at only half their capacity.

As described, poor labor market conditions for care workers lead to poor-quality care services and a shortage in the supply of care services. Attracting a sufficient number of workers into elderly care education and training is difficult if elderly care work remains a low-paid, low-status job. As young people become more educated and migrant workers eventually settle down in the cities and acquire equal rights and entitlements as urban residents through the *hukou*[22] reform, society can no longer rely on low-skilled migrant women for adequate elderly care provision. As this paper illustrates, however, the ability of elderly care institutions to raise the wages for elderly care workers is constrained by the affordability of elderly care services for care users.

The findings call for a comprehensive and long-term strategy for health and elderly care provision to improve the pay and working conditions for workers and make quality care services accessible for all people with care needs. We provide the following recommendations:

A. Increase Public Expenditure on Health and Elderly Care Provision

Due to the relational nature of care work and the economic vulnerability of care users, quality elderly care services are unaffordable for majority of users. Thus, the development of an effective and sustainable public financing system for health and elderly care is a precondition for improving the economic and social status of elderly care workers and expanding the workforce.

[22] Hukou is a residential household registration system in the People's Republic of China.

The international experience presented in this paper, indicates that adequate and stable public spending, either tax-based or social insurance-based, is critical for building a service market with broad coverage, accessible for all people in need of care, and improving the pay and working conditions for health and elderly care workers. In this regard, regional experiences to lower the fiscal costs associated with the growing care needs of the elderly include that of Japan and the Republic of Korea, which have introduced a long-term care (LTC) insurance program that covers everyone and provides benefits irrespective of income (Scheil-Adlung 2015, Peng 2010, Chon 2013).[23] The pilot LTC insurance program introduced by the PRC in recent years is an encouraging development and should aim to cover both the urban and rural populations.

B. Increase Efficiency in the Use of Public Resources for Health and Elderly Care

Funding for health and elderly care services should be accompanied by increased efficiency in the use of public resources. We suggest addressing three areas:

(i) **Investment focus**. Increased government expenditure should be expanded to include other critical aspects of elderly and health care supply that go beyond building more hospitals and nursing homes and purchasing more equipment. A complementary focus should be placed on enhancing the social infrastructure of the current elderly and health sectors. For the health-care sector, this requires attending to current workforce limitations, including addressing remaining gender imbalances as identified in this paper such as vertical gender segregation in the health workforce and application of a gender equality approach in recruitment, job assignment, promotion, retention, and continuous professional development practices. While for elderly care, in particular there is an urgent need to professionalize the sector and to develop a sustainable pool of trained LTC workers.

(ii) **Coverage.** With the ongoing rural-to-urban migration process that has left behind tens of millions of the elderly and eroded familial elderly care provision in rural areas, more public resources need to be directed to support rural health and elderly care. Elderly care costs can be reduced by expanding paid home- and community-based services—the type of services not yet well developed in the PRC. This can also help address the issue of underutilization of institutional care services. Furthermore, younger elderly volunteers can play an important role in expanding unpaid community-based services, particularly for nonprofessional services such as meal delivery, house cleaning, or shopping services. Also, the existing mean-tested, public-funded elderly care services experience inefficiencies due to the narrow eligibility criteria, which should be extended to cover infirm older persons with lower socioeconomic status, not just the poorest of the poor welfare recipients as is currently the case.

[23] This recommendation needs to be qualified with the recognition that a country's fiscal space is constrained by its level of development. Japan introduced the LTC program in 2000 when the country's per capita GDP was $38,532, and the Republic of Korea's LTC program was introduced in 2008 when its per capita GDP was $21,350. The PRC's per capita GDP in 2019 was only $10,262, less than a third of the level for Japan in 2000 and a half the level of the Republic of Korea in 2008. It is imperative for the PRC to utilize its scarce fiscal resources effectively to deal with the challenge of "becoming old before becoming rich."

C. Reform the Incentive System for Medical Professions and Take Measures to Improve Pay and Working Conditions

(i) Reforms need to change the price scheme that underpays health-care services and overpays for drugs and diagnostics tests, while increasing the pay for medical personnel. The reforms also need to realign incentives for medical professions to practice medicine with the well-being of the patients as the main goal by decoupling physicians' earnings from revenues or profits-generating targets. This reform measure will help enhance professional ethics and improve the doctor–patient relationship. Effective communication training for medical personnel can also help promote good communication between doctors and patients and reduce patient disputes.

(ii) Additionally, the health-care industry needs to strengthen regulatory standards to protect doctors and nurses from workplace violence, reduce the workload and the incidence of burnout, and help medical staff resolve work–family conflicts. Moreover, the industry needs to provide a good work environment for nurses and raise their pay and social status to attract more workers, especially male workers, into this occupation.

D. Professionalize the Elderly Care Sector

(i) **Invest in education and training**. The delivery of quality elderly care services requires a wide range of professional skills to address the functional disabilities in the area of basic medical services and nursing, prevention, and rehabilitation. Providing education and skills training for new and inexperienced workers is an important determinant of a high-quality elderly care workforce. Professionalization also raises the social status of care workers, making the occupation attractive to new workers.

(ii) **Set standards and certification**. To address the long-term demand for institutional elderly care, the formal education system (at the university and vocational school level) should provide an elderly care program with well-designed, standardized, and certified courses and programs. The scope of the training programs should not only teach students how care can be delivered professionally, but also help them advance their career in the long term. Cases, including the PRC, suggest that partnerships between universities, geriatric research centers, and elderly care institutions can deepen the quality of training for elderly care workers as well as increasing the social standing of the occupation (Habib 2019). In this regard, the integration of medical and elderly care services is an area that merits further exploration in the PRC context.

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Labor Market Conditions for Health and Elderly Care Workers in the People's Republic of China

This paper examines the labor market conditions of the paid workforce in the health and elderly care industry in the People's Republic of China (PRC). Findings indicate that the wages for elderly care workers, most of whom are women, were low, and that most of the elderly care institutions had difficulty generating sufficient revenue to cover operation costs. The growth in employment in the health and elderly care industry has lagged other sectors, limiting the supply of high-quality services for the PRC's growing population with health and care needs.

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