Taiwan

Tainan City

Home Health Care System:

Dealing with Medical Resources Inaccessibility to Hard-to-reach Patients

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Introduction

The inaccessibility of medical resources is gradually becoming a crucial issue around the globe. In Taiwan, although the government provides the public with sufficient medical resources via national health insurance (NHI), it is still a serious problem as the elderly and disabled populations increase. This is a problem that not only Taiwan faces, but also many other countries which have similar population structures.

In only another 8 years, Taiwan will transition from an aged to a super-aged society, which is the fifth fastest aging rate in the world. In 2060, the proportion of the elderly population in Taiwan is estimated to reach 39.27%, which will be the second most in the world. Compared to western countries, aging will definitely have a significant impact on Taiwan [1]. According to a report by the World Health Organization, worldwide more than 46 percent of older people—those aged 60 years and over—have disabilities and more than 250 million older people experience moderate to severe disability [2].

Theoretically, we usually evaluate the adequacy of medical resources by the ratio of the population and the total number of physicians, but we find that there are still many cases ignored by this statistical calculation. Because of physical and mental problems, elderly and disabled patients encounter many problems during the process of obtaining healthcare. In the foreseeable future, Taiwan, like other parts of the world, is expected to have many more vulnerable patients with limited mobility. Improving medical resources for hard-to-reach patients is what we should start to do now. Though the Taiwanese government has launched a plan to deal with this issue, there are still some problems needing to be solved.

Outlined Problems

No matter who the caregivers are, patients are sent to hospitals as long as they encounter an emergency situation. Therefore, patients face a "reverse care cycle" which undermines their physical and mental health conditions. In order to deal with this situation, the Taiwanese government initiated the "National Health Insurance Home Health Care Integration Plan" in 2015.

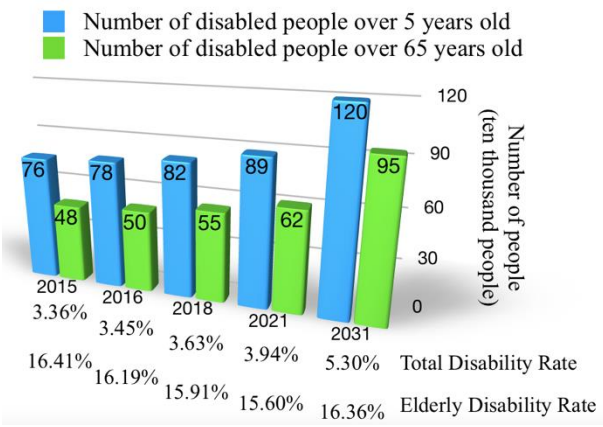

Figure 1. The total population of disabled people in Taiwan has skyrocketed recently [3].

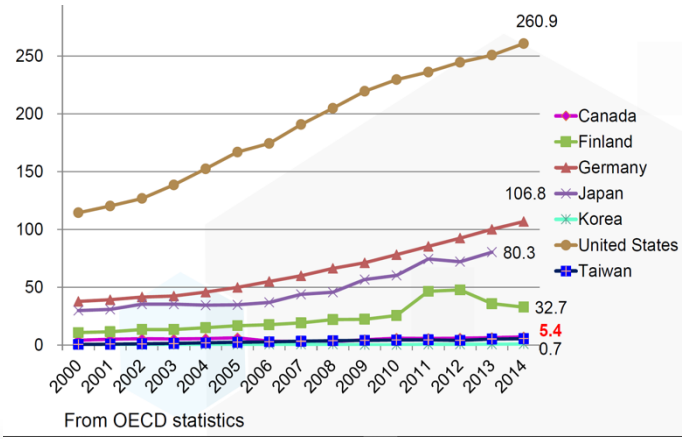

Figure 2. Home health care resources calculates in US dollars per capita per year.

Nevertheless, the policy still has room for improvement. Taiwan has low home health care resources, as calculated in US dollars per capita per year (Figure 2) and compared with other OECD (Organization for Economic Cooperation and Development) countries. The average in Taiwan was approximately 8 US dollars in 2017, but it was only one-seventh of that of Japan in 2008, an Asian country which has a similar aging rate [4]. Additionally, public usage rate of home health care only accounted for 3.3% of the total potential demand in Taiwan in 2017 [5]. The above data exemplify that we should put more effort into implementing the government's policy plan.

Therefore, we decided to analyze the defects of NHI Home Health Care Integration Plan by focusing on three aspects of it, which we call the "**3 Lows**." After this comprehensive evaluation, we will propose several new policies to confront the current and coming challenges.

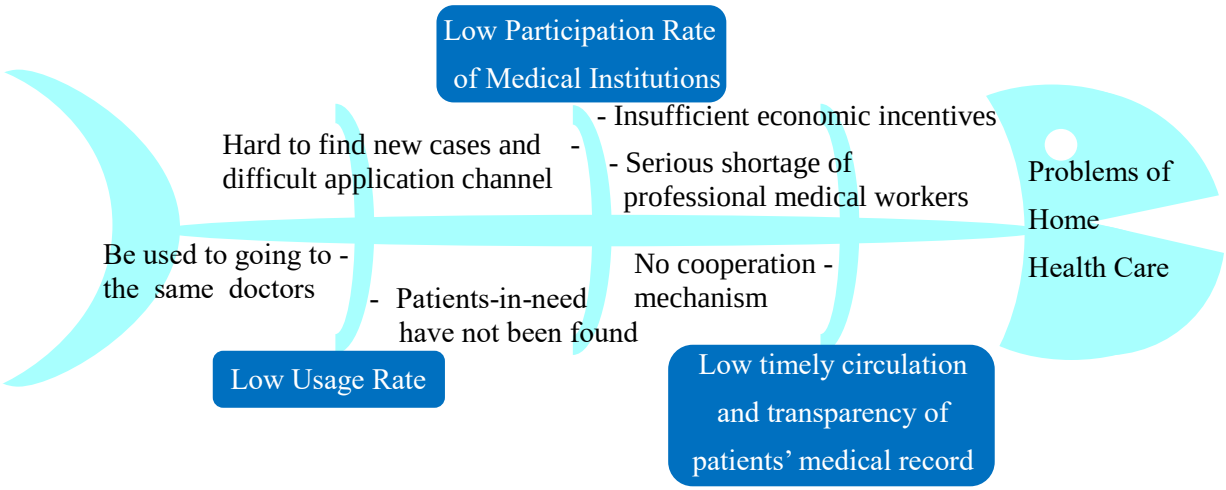

Figure 3. Fishbone diagram of problems of Home Health Care Integration Plan.

1. Low participation rate of medical institutions

(1) Insufficient economic incentives

Taiwan's NHI Administration has performed case payment system of home health care. According to an interview we conducted with Dr. Yang, Ji-Hua[1], a medical team gains 1553 points per patient when performing home health care, which is three to four times of the outpatient expenditure. However, if we consider patients' dispersed residential locations, transportation costs, and complexity of patients' diseases, the medical team can afford 3-6 cases in a half day via home health care. As long as the number of outpatients in clinics in a half day can reach 24, it can yield more credits than performing home health care. That is, the higher workload and lower payment keep medical teams away from home health care.

(2) Serious shortage of professional medical workers

Medical workers are accustomed to an environment with well-equipped medical devices and timely support from medical personnel. Most of them have not even received regular home health care training from schools and the government. Therefore, they feel nervous to contact patients in unfamiliar environment. These obstacles gravely influence the willingness of the participation of medical workers.

[1] Dr. Yang is a doctor in the Depart. of Family Medicine in Yizhu Township Public Health Center, Chiayi County.

(3) Hard to find new cases and difficult application channel

According to Central Region Office, NHI Administration, 1216 clinics participated in the Home Health Care Integration Plan, of which 445 (37%) did not know how to form a team or find suitable resources. Moreover, the majority of the clients (63%) who have received home health care are self-applied or their families applied [5]. Furthermore, the cumbersome administrative application process is distributed unevenly to Public Health Bureau and Social Affairs Bureau, which keeps medical teams from carrying out home health care.

2. Low usage rate

(1) Patients often reject household visits of local doctors

Taiwanese patients are generally accustomed to going to the doctor in medical centers. The prejudice that an individual can gain better healthcare in high-stage medical institutions causes the failure of Taiwan's ostensibly levels-based care system. Since awareness of and trust in home health care have not been fully established, patients tend to give up on this choice.

(2) Patients-in-need have not been found

The problem can be attributed to two dimensions: lack of promotion in the community and neglect in the clinics. According to a survey conducted by the Central Region Office, NHI Administration in 2016, about 69.3% people have not heard of home health care service, and 68.1% village chiefs have not helped with patients' referrals [5]. Additionally, lots of family members take prescriptions for bedridden patients without physicians' inquiry.

3. Low timely circulation and transparency of patients' medical record

Home health care teams are composed of multiple professionals coming from different institutions, elevating the difficulties of cross-sectional information circulation and coordination. Also, patients and their families cannot get sufficient health information.

Proposed policies and solutions

Based on the problems above, we propose policies to improve the efficiency of home health care.

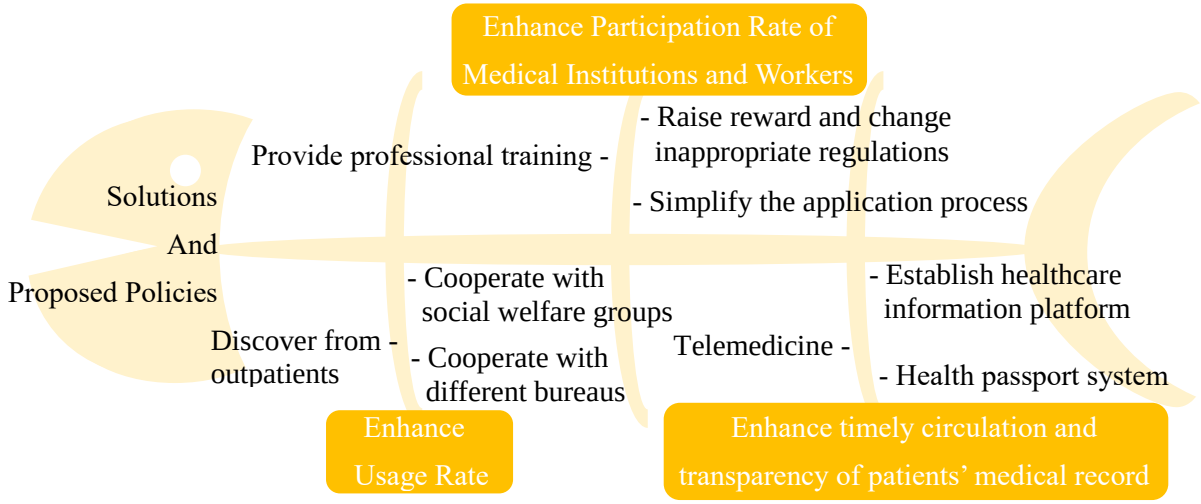

Figure 4. Fishbone diagram of proposed policies of Home Health Care Integration Plan.

1. Enhance the usage rate of publics

(1) Cooperate with Public Health Bureau, Social Affairs Bureau and Civic Affairs Bureau

The caregivers should explore patients' needs and actively assist them in referral, and Social Affairs Bureau should promote the referral concept to them. We can encourage village chiefs to explain home health care at the community conference to improve policy visibility.

(2) Discover new cases among outpatients

Physicians should make a comprehensive analysis of physical condition, living environment, and transportation of patients who have been took prescriptions by their family for a long time. Hence, they can recommend patients to receive home health care in time.

(3) NGOs

Many NGOs have been deeply involved in the community for a long time, so they can find problems based on their professional experience. Medical institutions and the government can exchange information with related NGOs by holding forums, and thus referring cases in

need of home health care to the related units. For example, Huashan Social Welfare Foundation in Taiwan provides services including accompanying patients to see the doctor. The service staff can recognize the needs of the cases more effectively.

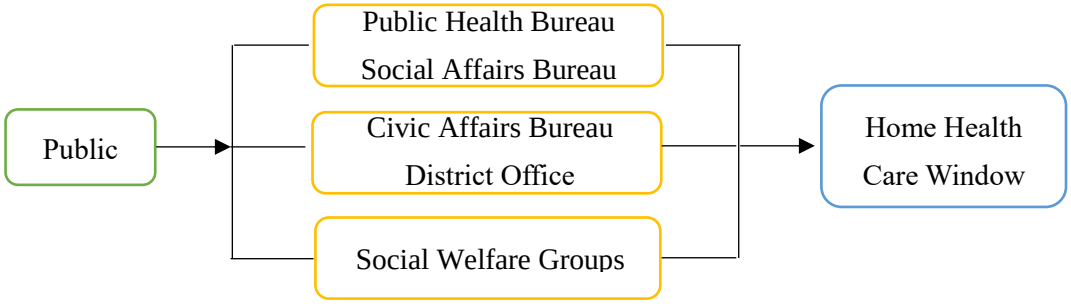

Figure 5. The method to find more cases.

2. Enhance participation of medical institutions and medical workers

(1) Raise reward and change inappropriate regulations in NHI

We can design a new payment mechanism with the concept of Pay-for-Performance (P4P), which means the better the patients' performance after the treatment, the better the reward doctors can get. We can categorize patients by their degree of seriousness of illness, and give complementary credits, lest doctors only include patients with mild syndromes. P4P has been used for part of diabetes patients in Taiwan, hoping that this can also improve the quality of home health care and make physicians get more reasonable pay to reach the win-win situation.

(2) Training professional medical staff for home health care

We encourage medical institutions to hold regular seminars. The authorities concerned can compile textbooks concerning home health care for medical workers. NHI Administration can offer special training courses and corresponding certification.

(3) Simplify administrative application procedures

We recommend that the application mechanism should be merged into a single window in order to simplify the application process, so that publics or medical institutions do not need to visit different bureaus and it can increase their willingness.

3. Enhance timely circulation and transparency of patients' medical record

(1) Interdisciplinary information-sharing platform

A system with information sharing and referral tracking can connect to a VPN (Virtual Private Network). Medical teams from different medical institutions can log into the same system and get comprehensive information of the patients, thus increasing the interoperability.

(2) Telemedicine

Considering the limitations and geographical uncertainties of home health care, in order to eliminate the inaccessibility, we decided to propose using digital technology to make up for the shortcomings. Taiwan has a high internet penetration rate. Not only do we have the technology for live video telemedicine, but much of the Taiwanese population often uses video chat apps, such as Line or Messenger. Physicians could use the Internet to conduct video consultation before performing home health care, and patients could avoid the risk of getting to the hospitals. What's more, telemedicine can serve as the preliminary work before every visit.

(3) Health Passport

Combined with telemedicine and remote monitoring, a new system must be created to integrate exchanged information in a transparent, fluid, and secured way. We are convinced that building a P2P (peer-to-peer) personal health record platform to deliver trusted information to the right hands at the right time is applicable in home health care.

We hope to build a blockchain system to allow the data to be possessed and shared by the patient him or herself with the help of the OCR (Optical Character Recognition), which can easily transform images of medical records into an electronic, standardized version. Patients can aggregate and share their data with their family and medical teams using a cryptographic token.

Recommendations and Conclusions

After conducting this feasibility analysis, we propose patient-centered solutions based on addressing the problems presented by the "3 Lows," with the aim of improving the efficiency of the Taiwanese government's Home Health Care Integration Plan.

Concerning individual health, we can hold diverse workshops and activities in the towns to spread the information of home health care to every corner of the society, so that all who need the service can obtain medical resources through convenient channels.

Concerning community health, the authorities concerned should simplify the application administrative process, provide professional training for primary medical workers, and adjust the allocation of funds to enhance the participation rate of care givers and care requesters.

Concerning international health, every country is facing the global wave of aging and disabled population. For developing countries' government, they can pay more attention to the establishment of communication infrastructures, using software technology to complement the lack of medical resources; for developed countries' government, they should integrate different resources to build the last mile.

As medical students, we need to be aware of the fact that there are still a lot of patients who cannot get healthcare easily. We realize the importance of home health care and the severity of medical resources inequality, so we should keep this in mind and try to become influencers to improve the accessibility of medical resources in the future.

Reference

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