Financial Problems in Japanese PMC System for the Elderly

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The Korean medical care system is similar to that of Japan, including the national health insurance system, the fee-for-service system, and the freepractitioner, so, some medical care problems caused by the rapid graying of the population in Japan are full of suggestions for us, because we may have similar problems in the near furture.

It is expected that this article which was read at the 4th ASIA/OCEANIA Regional Congress of Gerontology, held from October 31 to November 3, 1991, in Yokohama, Japan, will be useful to researchers in deepening their understanding of the Japanese Primary Medical Care system for the elderly.

I. Introduction

The growth of the aging population is a common phenomenon in most advanced nations, but among these nations the speed of aging is the highest in Japan. The percentage of the elderly aged 65 years and over reached 7% in the United States in 1945, in France in 1865, in Sweden in 1890, and in Japan in 1970 (See Table 1). It took 125 years in France, 80 years in Sweden, and 65 years in the United States, to double the proportion from 7% to 14%, but in the case of Japan, it took only 25 years to become an aged society.

It is necessary to build up a comprehensive health care system for the elderly in each region to prepare for the rapidly graying population. Generally speaking, in Japan the primary medical care(PMC) system is more important than the secondary one which puts more emphasis on the treatment of diseases through hospital admission because Japan has enough beds(Gunji, 1990 : 75). Since the number of elderly patients needing personal attention is growing, home health care services should be offered to them, so, by whom and how PMC, including home care services, is to be provided is becoming an important issue.

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Table 1. The Proportion of Elderly Population by Selected Countries

	The Proportion of the Elderly Population		Years Required
	7%	14%	
Japan	1970	1995	25
U.S.A.	1945	2010	65
United Kingdom	1930	1975	45
West Germany	1930	1975	45
France	1865	1990	125
Sweden	1890	1970	80

Source : Health and Welfare Statistics Association(Japan). 1990

II. The Conditions of PMC System in Japan

Until now, clinics have provided PMC services for the elderly in Japan, but the Japanese medical care system has encouraged the private medical sector to provide beds in hospitals and clinics, so it has become a general practice for doctors to develop small clinics into hospitals. Especially in urban areas, the nongovernment medical sector has become larger and larger.

In addition, to compete with clinics, hospitals have provided outpatient services as well, so the number of outpatients at hospitals is increasing, whereas the number of outpatients at clinics is decreasing. Table 2 shows us that the number of outpatients of general hospitals was 1,282 thousand in 1979, 1,527 thousand in 1984, and further increased to 1,736 thousand in 1987.

There were, however, 4,553 thousand at clinics in 1979, 3,696 thousand in 1984, and this further decreased to 3,657 thousand in 1987. From 1979 to 1987, about 10 years, the number of outpatients at general hospitals increased four hundred fifty-four thousand, whereas the number of outpatients at clinics decreased to eight hundred ninty-six thousand.

Home health care services for senior citizens living in their homes, is essential in a PMC system, but in fact there are some clinics which do not have a single nurse on their staffs in Japan. Fig. 1 shows the number of nurses in

Table 2. The Number of Outpatients at Hospitals and Clinics

(Unit : Thousand Persons)

Year	General hospitals	Clinics
1979	1.282(100.0)	4.553(100.0)
1984	1,527(119.1)	3,696(81.2)
1987	1,736(135.4)	3,657(80.3)

Note : ( ) : Based on the No. of Outpatients in 1979
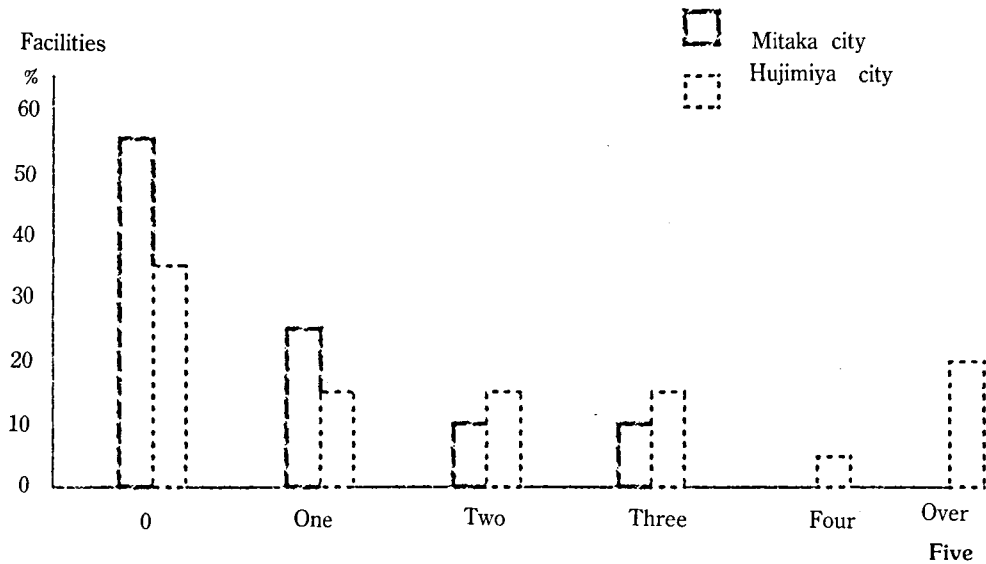Source : Ministry of Health and Welfare(KOSEISHO), Patient Survey

Facilities
%

Fig. 1. The Number of Nurses at Clinics

Mitaka City and Hujimiya City*. We can see that about 58% of the surveyed Mitaka City clinics do not have nurses, and 34% of the surveyed Hujimiya City clinics do not. All surveyed facilities in Mitaka City have less than 3 nurses whereas in Hujimiya City 22% of the medical facilities have over 5 nurses.
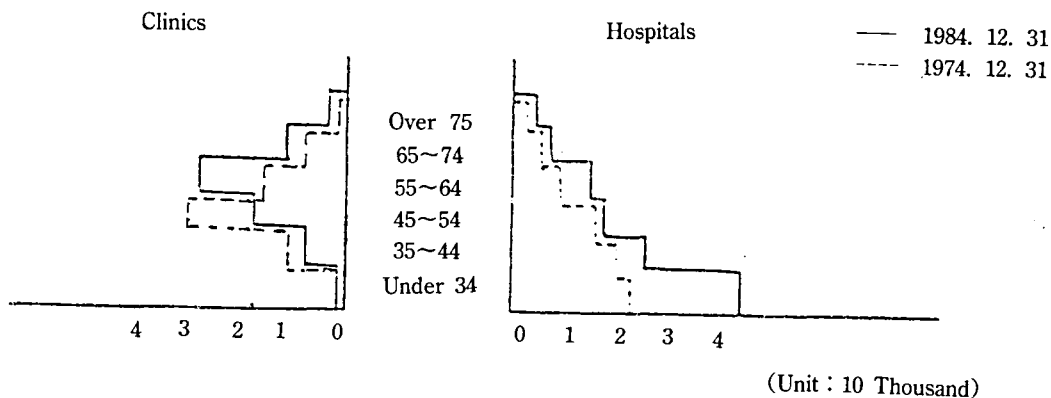
Not only the shortage of nurses but also the graying of clinic doctors makes it difficult for PMC to work. It is reported that the age of clinic doctors in Tokyo is also graying and that their average age is over 60, an average which is increasing by 0.6 every year(Gunji, 1989 : 86).

Fig. 2 shows us the difference in the age structure of clinic doctors and hospital doctors. In 1975, the majority of clinic doctors was 45 to 54 years old, and in 1985, they were 55 to 64 years old which shows a clear lack of young doctors. As can be seen from the table, the majority of hospital doctors was under 34 in 1975 and in 1985.

In another aspect of the economic side related to PMC, medical services in urban areas cost much more than in rural areas. Because the difference in medical costs is not paid under a fee-for-service system, it is difficult for new medical

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* Mitaka City population : 161,845
     clinics : 113(surveyed clinics : 86)
 Hujimiya City population : 115,818
     clinics : 61(surveyed clinics : 53)
 Mitaka City is adjacent to Tokyo, but Hujimiya is far from another big one.

Clinics   Hospitals   —— 1984. 12. 31
                                                                ---- 1974. 12. 31

                          Over 75
                          65~74
                          55~64
                          45~54
                          35~44
                          Under 34

          4   3   2   1   0   0   1   2   3   4

                                              (Unit : 10 Thousand)

Source : Ministry of Health and Welfare(KOSEISHO), 1985.

Fig. 2. Ages of Doctors at Clinics and Hospitals

facilities to open in urban areas. In the future, differences in regional medical costs must be recognized and provided for by any possible means.

III. The Situation of Medical Expenditures for the Elderly

As stated, some conditions have made in difficult for PMC to work effectively in Japan, so medical expenditures for the elderly have increa-sed continuously since 1983 when the Law for the Health of the Aged was promulgated. Table 3 shows us per capita elderly citizen medical expenditure for senior citizens, 443,010¥ in 1983, and this increased to 567,930¥ in 1988. Compared with the previous year, the increase rate in 1985 was the highest of all, and since then the rate has increased by about 5% annually.

Not only are the rising costs for medical care for the elderly an issue but the difference in medical expenditures in different regions is also

Table 3. Per Capita (elderly citizen) Medical Expenditure

(Unit : ¥)

Year	Per Capita Medical Expenditure	Percentage Difference
1983	443,010	
1984	461,448	4.2%
1985	498,637	8.1
1986	523,033	4.9
1987	548,680	4.9
1988	567,930	3.5

Source : Institute of Social Insurance, 1990

Table 4. Regional Differences in Per Capita Medical Expenditures among Elderly Population (in 1987)

(unit : ¥)

Item	Lowest(A)	Highest(B)	B/A
Province (Todouhuken)			
Inpatient	189,001	487,962	2.6
Outpatient	124,692	314,654	2.5
City area (Si)			
Inpatient	127,779	672,197	5.3
Outpatient	97,054	364,326	3.8

Source : Institute of Social Insurance, 1990

a serious problem in Japan. Table 4 shows that the gap between highest and lowest outpatient medical expenditures in Todouhuken was 2.5 times. Among cities, the inpatient expenditure per capita was 5.3 times and the outpatient expenditure was 3.8 times when comparing the city which spent the most and the one which spent the least.

IV. A Study on the Regional Differences in Medical Expenditures for the Elderly

The rising cost of medical care for the elderly and differences in medical expenditures by different regions are serious problems in Japan now. So, to find the relationship between the socio-economic characteristics and per capita medical expenditures of the senior citizen is the major objective of this study.

A. Methods

The subjects of this study are 677 cities in Japan. The data were analyzed by multiple regre-

ssion analysis. There were 19 variables regarding medical supplies selected, such as the number of doctors, the scale of hospitals and the number of beds, and 27 socio-economic variables were chosen, such as the growth rate of the population and the proportion of home-ownership(See Appendix 1).

Some significant variables were chosen using the stepwise method, and for the prevention of multicollinearity, variables with a high correlation with other variables were excluded.

B. Results

As indicated in Table 5, 47.5% of the inpatients' expenditures were explained by socio-economic variables. By dividing the population size into 4 groups : 1) less than 50 thousand, 2) more than 50 thousand to less than 100 thousand, 3) more than 100 thousand to less than 200 thousand, and 4) more than 200 thousand, the squared multiple correlation is increased. To put it concretely, in the cities of more than 100 thousand and less than 200 thousand population, 53.3 % of the inpatient medical expenditures can be

Table 5. Percent Explained in the Regression Analysis of Per Capita Medical Expenditures among Elderly Population

(unit : %)

Population (10 thousand)	All cities	~5	5~10	10~20	20~
Inpatient expenditure	47.5	51.3	46.9	53.3	66.0
Outpatient expenditure	26.1	25.6	21.7	21.5	22.0

explained by the variables. In the next group of more than 200 thousand, 66% of the inpatient expenditures were so explained, and especially, in that group, 50% were explained by the variable, number of beds.

Of the outpatient expenditures 26.1% were explained by socioeconomic variables, but after dividing the population size, the squared multiple correlation does not increase. To put it concretely, in cities of more than 100 thousand and less than 200 thousand population, only 21.5% of the outpatients medical expenditures were explained and in the next group of more than 200 thousand, only 22.0% were explained by the variables.

Table 6 shows that in cities with less than one hundred thousand population, the biggest factor influencing inpatient medical expenditures is the moving into the area rate. For outpatient medical expenditures, it is the population rate

in densely inhabited districts. All of the indicators are related to urbanization. In cities with more than one hundred thousand population, the most important variable influencing inpatient medical expenditures is the number of beds available.

This also indicates that medical supply induces medical demand which causes medical expenditure to go up. The most strongly related variable in outpatient medical expenditure is the low number of doctors aged 75 and over. This is because older doctors tend to use less expensive treatments than younger doctors who use modern methods that cost more. So in areas with more older doctors, the cost of treatment is lower, whereas in areas with a greater number of young doctors, the cost is higher.

C. Conclusion

This result shows that the inpatient medical

Table 6. Variables Best Explaining the Medical Expenditure

Population (10 thousand)	Less than 10	More than 10
Inpatient	Rate of moving-in	No. of beds
Outpatient	Pop. rate in DID*	No. of doctors aged 75 years old and over

＊DID : Densely Inhabited District

expenditure for the elderly in Japan is strongly influenced by the level of urbanization and the extent of the medical supply, especially the number of beds. It could therefore be true that looking at the low contribution of those variables, they could not successfully explain the huge difference in per capita medical expenditures among cities.

This sort of disarray may become an impediment for the introduction of policy to adjust the cost differences among areas.

Appendix 1. The Variables of the Study

Dependent Variables
· Total Per Capita Expenditure among Elderly Population
· Per Capita Inpatient Expenditure among Elderly Population
· Per Capita Outpatient Expenditure among Elderly Population

Independent Variables
1. **Medical Supply Variables**
   (Per 1000 elderly Population)
   Number of Doctors
   　　　　(under 34 years old)
   　　　　(35~54 years old)
   　　　　(55~74 years old)
   　　　　(over 75 years old)
   Number of Nurses
   Number of Nurses and Nurse-aids
   Number of Medical Facilities(hospital+clinics)
   Number of General Hospitals
   　　　　(20~99 beds)
   　　　　(100~299 beds)
   　　　　(over 300 beds)
   Number of Public Hospitals
   Number of Private Hospitals
   Number of Clinics
   Number of Clinics(with beds)
   Number of Clinics(without beds)
   Number of Beds
   Number of Hospital Beds
   Number of Clinic Beds
   Nursing Homes Capacities
   No. of Medical Facilities per 100 km² of residence
2. **Health status Variables**
   % of Senior Citizen(over 65 years old) among the Populations
   　　　　　(65~69 years old)
   　　　　　(70~74 years old)
   　　　　　(75~79 years old)
   　　　　　(80~84 years old)
   　　　　　(85~89 years old)
   Number of Inpatients
   Number of Outpatients

3. **Economic Variables**
   Price of Housing site per 3.3m^2
   Price of Commercial site
   Price of Industrial site
   National Power Indexes by City
   National Power Indexes per Person
   % of Persons Employed by Industry
4. **Social Variables**
   Rate of Moving-in
   Rate of Moving-out
   Growth rate of the population
   Percentage of Paved Road
   Percentage of House-owned
   Population Rate of Densely Inhabited District

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〈국문요약〉

노인들을 위한 일본 一次醫療體系의
재정적인 문제점

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노인인구의 증가는 선진국이 당면하고 있는 공통의 문제라고 할 수 있으나, 그중에서도 일본의 경우 노령화의 속도가 가장 빠르다. 高齡人口가 증가함에 따라 惹起되는 여러가지 문제점 중 看過할 수 없는 것 중의 하나가 노인들에 대한 보건의료의 제공, 특히 居宅老人들을 담당하는 일차의료 체계의 정비라고 하겠다. 일본에 있어, 노인들을 위한 일차의료는 지금까지 주로 開業醫가 담당하여 왔다. 그러나, 최근 심화되고 있는 개업의사의 연령의 고령화, 간호인력의 부족, 도시 地價의 上昇 등의 요인에 의해 개업의가 감소되고 있으며, 一次醫療體系에도 영향을 미치고 있다.

일본 노인의료의 또 다른 문제점은, 노인의료비의 상승과 더불어 나타나고 있는 의료비의 지역간 불균형이라고 하겠다. 노인1인당 外來醫療費를 道單位로 보았을 경우 약 3배, 市 地域間은 약 4배의 격차를 보이고 있다. 노인1인당 의료비의 시지역간 격차에 영향을 미치는 사회경제적 요인을 분석해 본 결과, 입원의 경우는 病床數, 외래의 경우는 75세이상 의사수등의 醫療關聯要因으로 나타나 醫療供給이 醫療需要를 誘發하고 있다고도 생각할 수 있겠다. 그러나 사회경제적 변수들에 의한 설명력은 높지 않았으며, 따라서 老人醫療費에 영향을 미치는 요인은 더욱 복합적일 것으로 추측된다.

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