

# Interprofessional education needs to correspond with the necessity of interprofessional work in health-care and welfare in Japan

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### Abstract

In Japan an increase in the elderly population with a rising incidence of cancer and chronic diseases due to life-style, resulted in shifting medical and health-care from a model of “cure” to that of “care”. Although average life expectancy in Japan is still among one of the longest of all countries, health outcome of each prefecture may vary due to incidence of diseases, size of the elderly population, and a difference in public health of the prefecture. In order to attain an increase of healthy life expectancy, interprofessional work of the health-related professionals with various specialties is especially needed in order to meet the complex requirements of the elderly in health-care and welfare. This has been emphasized in working together among medical staffs in hospitals, but there is discontinuity between health-care and welfare. In the last ten years, the importance of working together was recognized within a hospital, from a hospital to a clinic, and from health-care to welfare with seamless service and care.

Health outcome of diseases varies depending upon the prefecture in Japan. Therefore, interprofessional education should correspond with the necessity of interprofessional work, in active practice, and professionals should be aware of local differences and necessities to extend healthy life expectancy.

### I. Introduction

In the 21<sup>st</sup> century the elderly population in Japan has steadily increased, resulted in a rising incidence and prevalence of cancer and chronic diseases based on life style and in shifting the focus of medicine from the model of “cure” to one of controlling symptoms and maximizing patients’ level of activities of daily living and quality of life. Advancement of medical science, an increase of medical knowledge and development of new tools and equipments provided for comprehensive “care” to these patients, has resulted in increasing specialization within the health professions.

In last fifty years, average life expectancy(ALE) in Japan has been increasing and is one of the longest in the world, that is 78.79 years in males and 85.75 years in females in 2005, reported in December, 2007. The time of retirement for a worker, for example, 65 years of age will leave roughly 15 to 20 years to live, when they may need more or less health care and welfare. Due to both specialization in health professions and length of time to live for the elderly, neither a health-care professional nor a social welfare professional can meet all the complex needs of the elderly.

Socioeconomic situations vary depending upon each country, but a medical insurance system has been available since 1922 in Japan, to a limited

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extent initially, and gradually expanding its coverage, and all people have been covered by some types of medical insurances since 1961. A long-term care insurance system was started in 2000, and revised in 2005. Socioeconomic pressure has moved care of the elderly out of hospitals to social welfare facilities, then to their homes in a community, where health-care and social welfare professionals do not usually work at the same time and in the same place.

Since health-care and social welfare for children, adults and the elderly are needed in the community, the necessity of prevention, service and care may vary depending upon where they live, whether in a city or in a rural area, a northern prefecture or a southern prefecture.

The purpose of this paper is to make it clear the necessity of interprofessional work (IPW) in various areas of the country and at different levels in health care and welfare fields. Therefore, it is to discuss how interprofessional education(IPE) may have to correspond with the various necessities of IPW.

## **II. Needs and Variety of Interprofessional Work**

### **1. Objectives of IPE and IPW**

What are the objectives in medical and health-care, and welfare ?

In this context “health-care” designates all medical science, prevention, pathology, treatment, rehabilitation, and other medical services and care, and “welfare” contains all social welfare and welfare service which is care-related. The author would like to propose a general instructional objective (GIO) in IPW is to attain healthy longevity, and to maintain independent living in a community, helping each other. Then, the specific behavioral objectives (SBO) of IPE are to educate those health-related professionals, both medical and welfare professionals, to realize it, and the methods to attain the goal may be variable depending upon each profession. We

should always think of GIO, when we can not decide what to do. The author has also proposed that all health-related professionals are to be called “QOL supporters”, since they assist in improving the quality of life of patients, clients, the handicapped, or the elderly.

### **2. Variety of professions in health-care and welfare in Japan**

There are twenty six health-related professions, certified by the Ministry of Health, Welfare and Labor in Japan. Health-related professionals in this context designates those professionals engaged in the health-care and welfare fields. Most of them work in a hospital or a facility. These are physicians, dentists, nurses, midwives, public health nurses, pharmacists, physiotherapists, occupational therapists, speech-language-hearing therapists, registered dietitians, certified social workers, psychiatric social workers, certified care workers, prosthetists, medical radiology technicians, clinical laboratory technicians, health laboratory technicians, Acupuncturists, massage chiropractors, judo therapists and child care persons are certified by the ministry, but they do not work in a hospital. Besides these professions certified by the ministry, there are more health-related professionals, such as clinical psychologists, athletic trainers and, certified diabetes educators.

### **3. Hospital, clinic, and welfare facility, where IPW is needed**

In health-care and welfare, interprofessional work is needed at various levels, such as in prevention of diseases, health-care and welfare. IPW will be practiced at home, hospitals and clinics, and various facilities, such as long-term care insurance facilities, welfare facilities for the elderly requiring care, special nursing homes for the elderly, health service facilities for the elderly requiring care, sanatorium type medical care facilities for the elderly requiring care and

regional comprehensive support centers.

#### 4. On what occasion is IPW needed?

In Japan, health-related professionals are required to work as a team which is called “team work”, that is, interprofessional work is always required in both health-care and welfare fields. In a hospital, a case conference is mandatory, for example, to develop a principle of treatment or rehabilitation or a discharge plan. Many other tasks in a hospital have to be carried out, such as infection control, risk management, and nutritional support. A clinical pathway from an emergency hospital to a rehabilitation hospital was recently approved only in treating femoral neck fracture by the medical insurance system, but that of other diseases will follow soon. Prevention of chronic diseases based on life-style, such as hypertension, hyperlipemia, diabetes mellitus, obesity and osteoporosis. Hemodialysis for chronic renal failure needs teamwork consisting of a nephrologist, nurses, registered dieticians and clinical engineers. Prevention of diabetes mellitus is carried out by certified diabetes educators (of Japan). The following health-care professions are eligible for certification after schooling and an examination, nurses, registered dieticians, clinical laboratory technicians, physiotherapists, and others. There are about 12,000 educators, a half of them are nurses, and a quarter are registered dieticians,

In the welfare field, for example, the frontline for prevention of abuse to children and the elderly is the regional comprehensive support center, consisting of a care manager, a public health nurse, and a social worker.

#### 5. Why is IPW needed in Japan ?

There is a shortage of physicians, particularly of pediatricians and obstetricians in Japan, although their absolute numbers are increasing. The causes of these shortages or the feeling of shortages is an increase in the elderly population,

specialization of health-care, prolongation of time in examination and explanation for each patient, and many other reasons, such as, time to get informed consent for treatment, an increase of women doctors, uneven distribution of physicians, concentrated in the metropolitan area, like Tokyo, Nagoya and Osaka. Since 2004, a two year postgraduate clinical training system for physicians has begun after graduation from a medical school in Japan. Generally speaking, it is a good system for young physicians to gain broad experience in internal medicine, general surgery, obstetrics and gynecology, pediatrics and public health in the initial training period. However, this system forced new graduates go to large hospitals in cities like Tokyo to receive a good program of postgraduate clinical training system to gain good experience. This distribution of young physicians more in the cities resulted in a shortage of medical doctors in rural areas .

#### 6. Healthy life expectancy: “paradigm shift” is needed.

Average life expectancy (ALE) is length of time (years) to live at birth. Healthy life expectancy (HLE) is length of time (years) both mentally and physically one can live independently in good health.

A point of interest in health-care in Japan has focused on the shortage or a feeling of shortage, i.e., in a number of physicians, particularly in hospitals, although the number has been increasing. However, the number of physicians per 100,000 population does not always correlate with life expectancy, either ALE or HLE. Table 1 shows an example for five prefectures. Tokushima Prefecture with the highest density (1<sup>st</sup> rank) of physicians of 47 prefectures in Japan shows a low rank of life expectancy (39<sup>th</sup> rank in male, and 30<sup>th</sup> in female of ALE). Aomori Prefecture with a low rate of physicians (43<sup>rd</sup> rank) shows the lowest life expectancy (47<sup>th</sup> rank). The common denominators of both prefectures are high

Prefecture	Male(Yrs)	Female(Yrs)	Cancer*	Myo.Inf*	Apoplexy*	Diab. Mell*	Metabo Syn.	Metabo Syn.	Obesity	Obesity	Physician (/100,000)	Rate of the elderly (>65Yrs.)2006	Life Expect at 65 yrs.	at 65 yrs.
	(1)79,84	(4)86,48					(24)56,70	(18)35,70	(25)69,31	(24)96,61				
Nagano	(1)79,84	(4)86,48	(24)56,70	(18)35,70	(25)69,31	(24)96,61	(24)12,4	(15)3,9	(11)28,1	(9)16,8	(35)190,9	24,4	15,87	17,56
Niigata	(23)78,75	(9)86,27	(21)53,09	(12)28,20	(27)77,98	(12)68,02	(1)9,8	(1)2,6	(1)25,2	(4)16,0	(38)179,4	24,5	15,19	17,41
Okinawa	(25)78,64	(1)86,88	(2)11,27	(16)33,81	(18)56,36	(16)84,54	(47)18,7	(46)5,0	(47)46,9	(47)26,1	(26)204,9	16,5	15,12	16,66
Tokushima	(39)78,09	(30)85,67	(43)119,85	(44)104,87	(42)149,81	(46)314,61	(42)14,6	(47)5,1	(45)34,4	(45)22,2	(1)282,4	24,9	14,55	15,68
Aomori	(47)76,27	(47)84,80	(30)74,54	(41)93,18	(37)130,46	(34)163,07	(44)14,9	(32)4,4	(44)33,7	(46)22,7	(43)173,7	23,3	13,91	15,28

Table 1. Health Outcome of Five Prefectures <sup>2)</sup>

Myo. Inf. :: myocardial infarction

\* : number of patients/100,000 ( ) : ranking in 47 prefectures

Diab. Mell. : diabetes mellitus

Metab. Syn. : metabolic syndrome, based on number of medical checkups

Life expect : life expectancy

incidence of cancer, myocardial infarction, apoplexy, or diabetes mellitus has obesity. Nagano Prefecture with one of the longest life expectancies in Japan, although the rate of physicians 100,000 people is less than average (35<sup>th</sup> rank). Incidences of four major diseases of Nagano Prefecture shown in table 1, and are in the middle range, and obesity is in the upper quarter range. Okinawa Prefecture shows how obesity plays a key role in life expectancy, since it had the highest rank of life expectancy in both males and females until 1985. However, life expectancy in male fell to 26<sup>th</sup> rank, but females kept the 1<sup>st</sup> rank in 2000. This is known as “the 26<sup>th</sup> shock” in Japan. This is considered to be the result of a fat-rich diet which has been available since 1945 when World War II ended, and decreased amount of exercise due to the increase in automobile use. Both males and females show the highest incidence in obesity (47<sup>th</sup> rank). A governor of Okinawa took the lead in the campaign “Healthy Okinawa 2010” beginning in 2002. Thus, ALE in males is 25<sup>th</sup> rank, and for females is still the 1<sup>st</sup> rank in 2005. Niigata Prefecture, with fewer physicians (38<sup>th</sup> rank), has the lowest rate of metabolic syndrome in both males and females.

The health outcome in diseases suggests what kind of campaign is to be done for health promotion. And, it is apparent that each prefecture has its own task for which health professionals are to be educated in IPE.

### III. To strengthen three “soft” powers aiming for healthy longevity

In order to attain healthy longevity, three “soft” powers are to be considered simultaneously; these are community-based powers on health-care, welfare and education (Figure 1). In opening a new hospital, the “hard” parts of the hospital are the buildings, and facilities inside: CT, MRI, and operating tables, etc, and the “soft” parts are physicians, nurses, and other staff and the rules and regulations, with in which they work. A computer would not work without a program, since it is just hardware, i.e., an assembly of a frame with chips, a hard disc and a keyboard, without software. Three “soft” powers are to be discussed in how to attain the goal, healthy longevity; that is “a paradigm shifting” is needed.

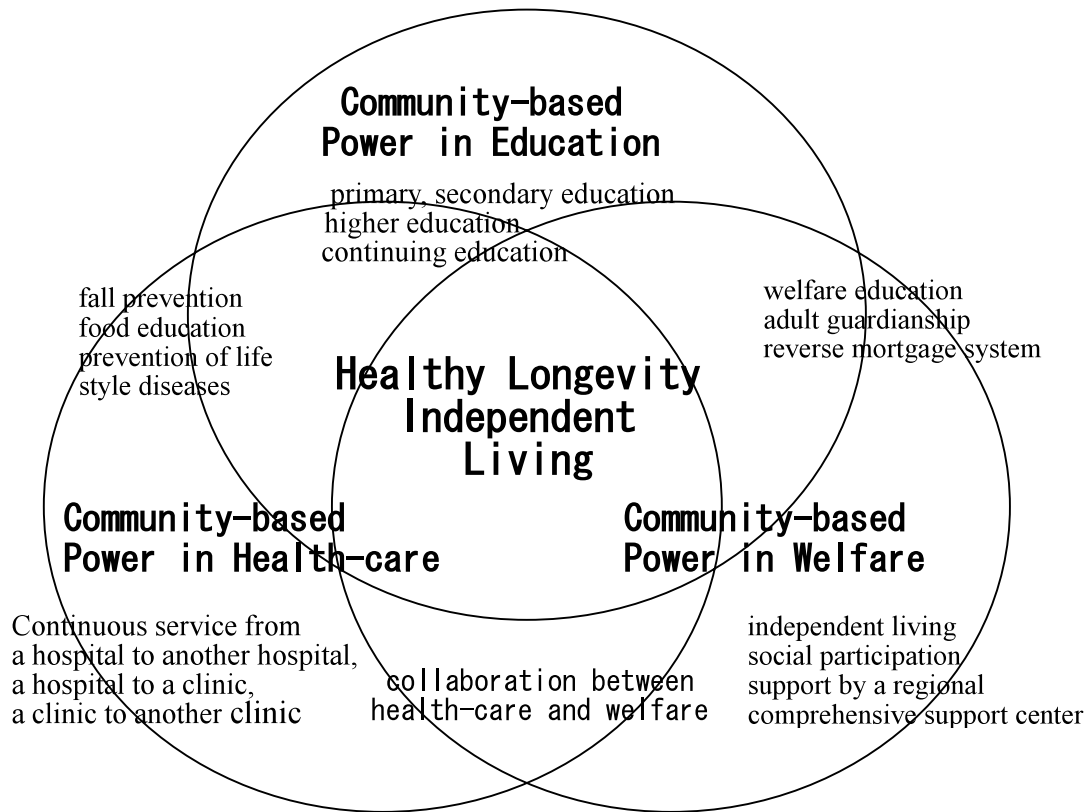
#### 1. Improvement of community-based power in health-care

Ogata<sup>1, 2)</sup> classified community-based health-care power into five categories as follows.

1) Health outcome with respect to age includes average life expectancy (ALE), healthy life expectancy (HLE) and infant mortality.

2) Health outcome in diseases includes incidence of cancer, myocardial infarction, apoplexy, diabetes mellitus and mental depression.

3) Supplying system of health-care includes numbers of physicians, nurses, hospitals, and hospital beds.



**Figure 1 : Community-based three “soft” powers in health-care, welfare and education to attain healthy longevity and to maintain independent living**

4) Life style and prevention of disease includes the rate of smoking habit, obesity, medical screening, and metabolic syndrome.

5) Efficacy and economy of health-care system includes the per capita total medical expenditure, medical expenditure for the elderly and average days of hospitalization.

A community with common residential space and mutual dependence in Japan is supported by various health-care and welfare professions and various insurance and system. Why is the ALE of Nagano Prefecture, with a low density of physicians much longer than that of Tokushima Prefecture, with the highest density? We may have to consider other “soft” powers to explain the cause. A forerunner’s work, like Toshikazu Wakatsuki’s practice<sup>3)</sup> in the Saku Central

Hospital, resulted in the high ALE in both males and females now, in Nagano Prefecture. In 1946 he devised a training program where doctors, nurses and other medical staffs had to experience the life of a farmer. Then, they actually practiced interprofessional work. Now, they have the Japan Rural Health-care Center. There are many explanations why Nagano prefecture has such a long ALE, such as of the character of the residents and other factors, nevertheless their experience tells us how prevention of diseases is important in public health.

## 2. Improvement of community-based power in welfare

In the 1960’s, interprofessional work started in Japan. After, in the later 1980’s, interprofessional work was widely practiced in prevention, health-

care and welfare in the community. Then, in 2005 there were two important revisions as far as interprofessional work was concerned. Firstly, in order to shorten the period of hospitalization and to make hospital beds available efficiently, a clinical pathway in a community was approved by the medical insurance system. This is a plan of higher medical fees when the hospitalization is within a certain period for an emergency hospital, and patients is transferred to a rehabilitation hospital. Planning of the clinical pathway in treating femoral neck fracture has necessitated IPW of orthopedic surgeons, nurses, physiotherapists and administrative staffs. Secondly, a regional comprehensive support center was established for every 30,000 residents in Japan under the revised long-term care insurance system in 2005. The centers consist of a chief care-manager, a public health nurse and a social worker, for improvement of health-care and welfare, They will make social connections in the community in preventing nursing care for the disabled elderly, and abuse to children or the elderly, and in supporting the healthy elderly to extend time of independence and to promote social participation.

Further discussion of the medical insurance and the long-term care insurance systems is beyond the purpose of this article. The author only emphasizes that IPE in higher education in Japan should reflect the actual practice of IPW in prevention, health-care and welfare using various social networks in the community.

In the United States, Kawachi<sup>4)</sup> has published many reports on the social capital, referring to connections within and between social networks. Public health is one field in social capital research. There are numerous studies on social capital, income inequality, and mortality, and so on. It may be necessary to carry out a comparative study of social capital in a community, to assess the power of neighborhoods between cities and rural areas, and between Japan and other countries

with an increasing rate of the elderly.

### 3. Improvement of community-based power in education

“Soft” power in education should be included from primary and secondary education to higher education, that is from elementary school, junior high school, and high school to colleges and universities. Furthermore, lifelong continuing education is also included. There are many educational powers for health promotion aiming for healthy longevity.

Now, our discussion is to be limited to food education. The Basic Law, enacted in 2005, defines “Shokuiku”<sup>5,6)</sup> as acquisition of knowledge about food as well as the ability to make appropriate food choices. In Japanese society there are many problems, such as irregular meals without breakfast and nutritionally unbalanced meals; an increase in obesity and lifestyle-related diseases; an excessive desire to be slim among young females. Besides these reasons, the Japanese situation concerning food has already reached a crisis point. The dietary pattern in Japan, formulated before 1980, consists of rice as a staple diet, combined with a well-balanced variety of fish, meat, vegetable and fruit, with the exception of calcium intake. However, this ideal dietary pattern has been totally lost, particularly in young to middle aged males who tend to like fat-rich food, as shown in some prefectures, which were mentioned before. The change of dietary patterns associated with an increase in automobile use, then a loss of walking habits, resulted in life-style diseases, such as obesity, hypertension, hyperlipemia, myocardial infarction, apoplexy and diabetes mellitus. Subsequently, certified diabetes educators have a quite important role in preventing diabetes mellitus.

## IV. Practice of interprofessional education

The concept of IPE in higher education is,

without any doubt, very important in both colleges and universities in which all health-related professionals are educated. Even though most education systems for health-related professionals have four year programs, medical, dental and pharmaceutical schools have six year programs. However, there are colleges with three year programs for physiotherapists, occupational therapists, speech therapists and nurses. Interprofessional education for health-related professionals should start as a first year experience after admission. Each country has a different system in health-care and welfare, for example, in Canada, Japan, UK and USA, a history of development of IPE in these countries is quite varied. Nevertheless, IPW has been performed between hospitals or between a hospital and a clinic in many countries, The UK is taking the lead in carrying out IPE, since the National Health Service recognized the importance in higher education, providing financial support for IPE<sup>7,8)</sup>.

IPE may be divided into two categories in Japan, that is within the higher education system, like in a university, and after graduation from school. IPW is always needed in the active practice of health-related professionals in a hospital or in a welfare facility. IPE in a university may be of two types, corresponding to the incidence of the elderly population. These are a general type which is applicable in anywhere in Japan, and a specific type which is applicable a certain prefecture or a community where the university is located. In planning a curriculum the difference in prefecture or community has to be considered. IPE has to be included from the first year to imprint the importance of IPE, and gradually practiced as students are establishing the identity of their specialty in the fourth year class, and to be included in core curriculum<sup>9)</sup>. Fourth year students or those in the last year of a program could learn activities of other health-related professionals, and they could learn better

their own profession with IPE than without it. When simulated or virtual cases for group learning are made, these cases have to be made corresponding to the actual practice of IPW. Necessity of IPW may vary depending upon the prefecture or community, probably due to a rate of the elderly in the population, and social bonding with the neighborhood. In a society of the elderly we may have to propose an adult guardian or reverse mortgage system to protect the client.

## V. Conclusion

IPW is one of the most important activities to promote health-care and welfare, not only in Japan, but also in many other countries with an increasing number of the elderly. In order to attain healthy longevity and to maintain independent living, we have to strengthen three “soft” powers in health-care, welfare and education, simultaneously. The issue of health promotion should not be focused only on the rate of disease, the five-year survival rate, or mortality, but on health outcome, such as healthy life expectancy or length of time of independent living. Now, we read a “paradigm shift” in health promotion. Thus, IPE should always correspond to the necessity of IPW, which may vary depending upon a rate of population growth of the elderly, and a specific pattern of health problems in a region or a community.

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