

Primary Care Education at Kawasaki Medical School

Osamu YAMADA,* Yoshihiko TANO,* Tsukasa TSUDA,*
Yoichiro WATANABE,** Masahiro YOSHIMOTO,*
Hirosada SHIGEMOTO* and Yutaka HIRANO*

**Department of Primary Care Medicine*

***Department of Psychiatry*

Kawasaki Medical School, Kurashiki 701-01, Japan

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ABSTRACT. Department of Primary Care Medicine was established in 1981 at Kawasaki Medical School as a first place to educate students about primary care in Japan. Since the history of Department of Primary Care Medicine is so short, many problems which should be resolved were left over. Brief history of primary care activities in Japan was reviewed and strategies for primary care education were discussed.

Key words : Primary Care — Holistic Medicine — Family Medicine

Twelve years have passed since the concept of primary care was introduced into Japan. During the past decade much has been accomplished in the field of primary care education. The concepts of primary care were introduced in Japan by the late Dr. Taro Takemi, former president of the Japan Medical Association, and a number of proposals were presented to the Ministry of Health and Welfare by the Committee for Postgraduate Education between 1973 and 1978. In 1978, the Japanese Association of Primary Care was founded. In 1980, Kawasaki Medical School established its Department of Primary Care, and, in 1981, the Department of Community Medicine opened in Jichi Medical School. More recently, several newly founded medical schools have included primary care-oriented medical education programs within their curriculums. Yet there are still not enough primary care education programs in Japan. The concepts of what primary care is at present are understood, so now the responsibility of providing good primary care education and training programs in Japan is faced. How this has been attempted in the program of primary care education at Kawasaki Medical School, and the several problems we have to resolve are described hereafter.

Background factors for the establishment of the Department of Primary Care Medicine

From the very beginning the traditional Japanese lecture system has not been employed at Kawasaki Medical School. Instead specialization and the rotation system, modeled after the U.S. system, were adopted. For instance, the field of internal medicine is organized into one unit having eight divisions : cardiology, gastroenterology, hematology, chest and respiratory diseases, neurology, nephrology, endocrinology and clinical pathology. One chairman heads

山田 治, 田野吉彦, 津田 司, 渡辺洋一郎, 吉本正博, 重本弘定, 平野 寛

the eight divisions of subspecialties, while each division is headed by one professor. Undergraduate and postgraduate medical education is provided by rotating students through each division for an equal period of time. Postgraduate education consists of a five year training program divided into a two year junior residency and a three year senior residency. After finishing rotation training during their junior residency period, postgraduate students may choose a certain division in which to complete their senior residency period. During this senior residency period, they are involved in clinical and research work and, to some extent, assist doctors in the department in undergraduate and postgraduate education. This training program is very unique and far advanced among medical schools in Japan, most of which did not have a specific postgraduate education program at the time when the program was begun 11 years ago at Kawasaki Medical School. Several years ago, however, it was realized that this system had unexpected inherent problems in it.

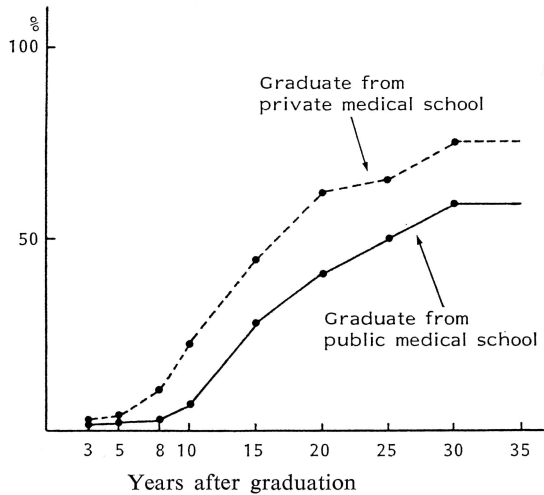
Specifically, specialists give the major part of their attention to and concentrate mainly upon inpatient ward; or in other words, they are dealing with very rare and serious diseases, and tend to have little time for outpatients. Patients with common diseases tend to receive only casual and perfunctory treatment. Specialists pay much more attention to the diseases of patients than to the patients themselves, and, since they provide medical care as a measure to obtain research data from patients, they tend to place both physical and economic burdens upon patients. Heart to heart communication between doctors and patients, thus, becomes insufficient.

Furthermore, there are many patients with chronic diseases under the management of specialists, but not many at the acute stage. When undergraduate and postgraduate students are assigned to these specialists, they are put in charge of patients who have been managed by somebody else beforehand. There are only a few occasions when they can deal with patients from the time of their first visit. Thus, they are unable to master the techniques for handling patients with acute illnesses.

Generally speaking, nationwide about 70% of doctors go into general practice 10 to 15 years after graduation from medical school (Fig. 1). The aim of postgraduate education, about 80% of which is provided by medical schools, it has gradually been realized, should be to create effective clinicians who can manage a broad spectrum of comprehensive care ; from health promotion, prevention and treatment of illnesses to rehabilitation, and who can provide continuous care for patients with common diseases in an outpatient setting as primary care physicians.

The goals of old, well-established medical schools in Japan are undergraduate education and research. It appears that these schools believe training of the practitioner can be left to affiliated hospitals over which they have control. Even if it is assumed that such hospitals fulfill their duties, what are newly established medical schools, which have no affiliated hospitals (as their history is so short), to do? It is their duty, on their own, to devise a method to turn undergraduate and postgraduate students into practicing doctors. The only way to accomplish this, we believe, is to establish a department of primary care medicine in addition to existing departments of internal medicine and surgery consisting of specialized divisions. From this background, the Department of

Fig. 1. Proportion of general practice after graduation from medical school.



Primary Care Medicine at Kawasaki Medical School was created in 1980.

Characteristics of Primary Care

1. Concepts of Primary Care

The policies of our department accentuate the basic spirit and skills of medical care to provide continuous and holistic care for patients with common diseases at the outpatient clinic under a close relationship with specialists. The aim of our undergraduate and postgraduate education is to teach students how to develop a good relationship with their patients in order that the highest quality of care can be provided. The goal of our medical education is to train a student as a primary care physician. It is necessary, however, to precisely define the meaning of primary care if the characteristics of our department are to be more clearly designed. Our definition of primary care is the same as that expressed by the National Academy of Sciences of Washington, D.C. in 1976 (Table 1). The five attributes essential to the practice of good primary care are accessibility, comprehensiveness, co-ordination, continuity, and accountability. These attributes are particularly important for

TABLE 1. Definition of Primary Care.

1. Accessibility of services
a. temporal factor
b. spatial factor
c. economic factor
d. psychological factor
2. Comprehensiveness of services
3. Co-ordination services
4. Continuity of services
5. Accountability

by the National Academy of Sciences of Washington, D.C. in 1976.

TABLE 2. Characteristics of Primary Care.

	Emergency care	Speciality care	Primary care
Accessibility	○	×	○
Comprehensiveness	○	×	○
Co-ordination	○	○	○
Continuity	×	○	○
Accountability	○	○	○

primary care. However, it would be very difficult to fulfill all of these five attributes in a speciality or emergency care setting. It can be appreciated Table 2, for instance, that emergency care is temporary care for life threatening events. For this reason it lacks the attribute of continuity. On the other hand, speciality care cannot fulfill the attributes of accessibility and comprehensiveness, because it is only provided at large hospitals in metropolitan areas and because specialists do not provide common medical services due to the fact that they must concentrate on more specialized services.

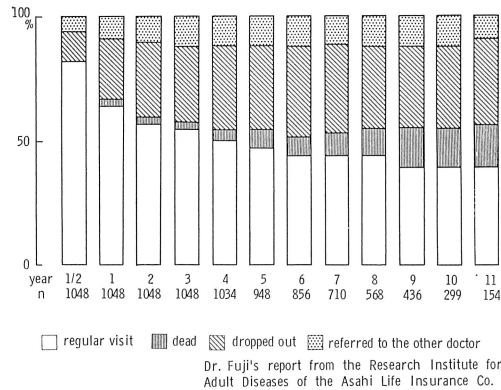
Excellent primary care service can be delivered only by holistic and comprehensive care though a bio-psycho-socio-ethical approach. This approach has already been discussed twice at the international seminar of Life Planning Center, once in 1982 and again in 1983 under the main theme of "Science and Art in the Practice of Medicine and Nursing." To be brief, it is very important to understand the patient as a person who has biological, psychosocial and ethical problems in order to provide humanistic medical care. Introduction of the team care approach is essential to provide good health and medical care. Nurses, nutritionists, social workers, medical secretaries and doctors should form a team that can approach patients with complicated and many-sided problems, and a problem-oriented medical records system must play an important role in creating good co-ordination between team members.

2. Patient Compliance with Medical Advice

Next, we turn our attention to compliance. Compliance can be defined as "the extent to which a person's behavior (in terms of taking medications, following diets, or executing life-style changes) coincides with medical advice." It represents a major portion of the patient-provider relationship and is the portion for which the patient is most responsible. Because compliance is an important consideration not only for acute diseases, but also for chronic disease such as essential hypertension, diabetes mellitus, chronic hepatitis, gastroduodenal ulcers, and chronic obstructive pulmonary diseases, in long-term management, it requires attention before complications and disability occur. For instance, according to the report of Dr. J. Fujii of the Research Institute for Adult Diseases of the Asahi Life Insurance Co., 34.6% of 1,048 patients with essential hypertension dropped out of long-term treatment during 5 years (Fig. 2). Only 63.8% of patients took their antihypertensive regimens more than 95% of the time. No therapeutic effects can be expected if patients do not comply with regular visits, medication, diets and life-style changes. In such cases, the money spent on laboratory tests for diagnosis is wasted.

Several factors have been consistently identified as having a bearing on

Fig. 2. Drop out of long-term treatment for Essential Hypertension (1968-1976).



compliance. Finnerty, F.A. Jr. found that: (1) a longer waiting time, (2) limited knowledge by the patient about his disease, (3) a poor relationship between the patient and provider, and (4) a complicated treatment regimen were of greatest importance. Primary care is provided in outpatient settings, so the patient's self care responsibility is much higher than that of an inpatient. Compliance is an important attribute for maintaining long-term management of patients.

3. Importance of Cost Effectiveness

A brief consideration of cost effectiveness is also important to this discussion. If we consult a doctor, some amount of money must be paid for care. In most cases, however, the amount of payment is not so high since all Japanese citizens are covered by some kind of health insurance. But recently red ink financing of insurance by companies due to steeply rising medical costs has promoted a demand for a rise in the amount a patient is now required to pay, and this has led to heated discussion in the National Diet. Payment for the medical care of patients with chronic disease is made on a daily basis. Consideration of cost effectiveness will be necessary for the primary care physician, if the amount patients must pay is increased. Frankly speaking, medical school hospitals, which provide about 80 per cent of postgraduate medical education, have well organized central laboratories. Residents can get the results of tests easily even if the tests require very difficult measurements and are expensive. They need only check laboratory order sheets. Thus, most residents do not pay enough attention to the economical and physical burden these tests may place on patients, since they have little idea of the expense of tests, medical regimens and care. To make a satisfactory diagnostic and treatment plan, what will give us a maximum diagnostic and treatment effect with a minimum physical and economical burden on the patient must be considered. Medical staff doctors in our department of primary care have been asked to take these factors into consideration in the training of our residents and to observe whether they pay attention to these attributes of compliance and cost effectiveness or not.

Actual Activities of the Department of Primary Care Medicine at Kawasaki Medical School

1. Ambulatory Care

We use the outpatient facility of Kawasaki Medical School Hospital, which has led to unexpected problems. Usually a medical hospital is classified as a tertiary care organization. Its major function is inpatient services, and outpatient services are provided to patients for follow up after they have been discharged from the hospital. Most doctors are rather reluctant to provide triage for new patients or to deal with a disease which is not within their speciality, and so they simply send a patient to another doctor. It is our main function to provide ambulatory care as a model of primary care. Patients over 15 years old who have no letter of referral come to consult us. We see about 20 to 30 new patients a day with two or three senior residents from the Department of Internal Medicine under the supervision of one or two staff doctors. Follow up care is scheduled by making appointments with staff doctors when necessary. Between April, 1981 and March, 1982, the year in which our department began, we saw 7,301 new patients. In order to study common diseases, a random sampling of 1,680 patients, that is, about one fourth of the total, was done. Every chart was reviewed by two staff doctors and all charts were classified into groups according to the International Classification of Diseases (ICD) of the World Health Organization. Healthy persons were excluded from these statistics and 1,580 diseases were analyzed. When these diseases were categorized according to the organ involved, 25.5% were related to the respiratory system, 23.5% to the digestive system, and 18.0% to the circulatory system (Table 3). These 3 main groups made up just over 2/3 of the total. Surprisingly,

TABLE 3. Distribution of the common conditions of our primary care clinic in Kawasaki Medical School Hospital. (1,580 diseases)

Groups of conditions	%
Respiratory system	25.2
(Common respiratory infections)	18.5)
Digestive system	23.5
Circulatory system	18.0
Mental disorders	7.1
Nervous system	7.1
Musculo skeletal system	5.4
Others	13.7
	100

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7.1% of the patients were found to have mental disorders, even though most of the staff doctors had a background in internal medicine. Probably, the recorded incidence of mental disorders would have been much higher if our staff doctors were trained to make correct mental diagnoses. This data shows us that the ability to make mental diagnoses and to treat some kinds of mental disorders is required of the primary care physician since not a small number of patients with mental disorders come to see primary care physicians

TABLE 4. Distribution of the common diseases of our primary care clinic in Kawasaki Medical School Hospital. (1,580 diseases)

Ranking	Condition	Number	%
1	Common respiratory infections	293	18.5
2	Essential hypertension	151	9.5
3	Chronic gastritis	71	4.5
4	Peptic ulcers	61	3.9
5	Neurosis	43	2.7
6	Myalgia	42	2.7
7	Acute gastroenteritis	39	2.5
8	Arrhythmia	38	2.4
9	Constipation	34	2.2
10	Muscle tension headache	32	2.0
		804	50.9

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rather than psychiatrists, particularly in Japan.

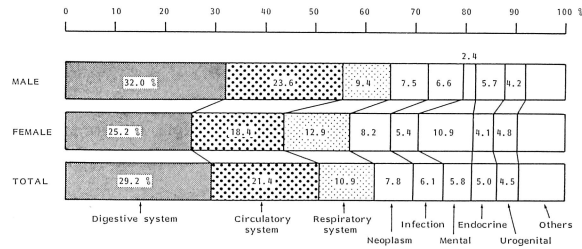
As can be seen in Table 4 the most common diseases in our ambulatory care clinic are upper respiratory infections and influenza, essential hypertension, chronic gastritis, peptic ulcer, and neurosis. The number of patients with the first to tenth most common diseases made up 50.8% of the total, and this figure reached 70.0% when all patients up to those with the 30th most common disease were included. The results of our survey indicate that if we provided students with the knowledge and skills to treat the ten most common diseases, we could give a high quality of care to one half of ambulatory care patients. As we mentioned earlier in this paper, the bio-psycho-social approach is necessary for a good provider and patient relationship. Dr. Tsuda found that more than 40% of ambulatory patients needed the psychosomatic approach for their treatment. Slightly under half (19.2%) of our patients meet the diagnostic criterion of psychosomatic disease as defined by the Japanese society of Psychosomatic Medicine. This is followed by 5.8% of patients with depression or in a depressive state, 4.2% with neurosis, and 3.2% in a preneurotic state. These experiences in our ambulatory care clinic also show it is mandatory to educate the students in our training program not only to make diagnoses, but also to make a proper approach to patients.

2. Inpatient Care

Recently, the practice of having ambulatory care clinics without beds has gradually increased. Still, in Japan, however, most general practitioners, in addition to outpatient services, maintain at least 20 beds for inpatient services. Our department of primary care has 40 beds. Inpatient services have been divided into 3 groups depending on the purpose of the admission ; namely (1) for diagnosis and treatment, (2) for treatment of former outpatients whose condition had deteriorated, and (3) for giving practical advice to patients with hypertension, peptic ulcer, diabetes mellitus, and other common diseases.

Three hundred and twelve patients were admitted to our ward between May 1981 and April 1982, the first year it was in operation, if those admitted

Fig. 3. Distribution of the diseases of our Primary Care inpatients in Kawasaki Medical School Hospital. (312cases)



for short-term hospitalization of two days or less are excluded. The average stay in the hospital was 27.8 days. We analyzed these admitted patients' diseases and classified them according to the ICD. Figure 3 shows the incidence of our patients' diseases. We found two unexpected factors when inpatient services were begun. First, it was believed that patients in the ward would have diseases that were mild in severity, but the average stay in the hospital was longer than had been expected. Second, even though we expected patients with organic diseases to feel comfortable when we employed the disease-oriented approach; i.e., a neglecting of psychosomatic factors, more than half of these patients required the psychosomatic approach. Focusing on the first factor for a moment, a small number of cancer patients with multiple organ metastasis have been admitted to our ward because diagnosis is difficult to make in the outpatient clinic. To cure these cancer patients is impossible, even if the doctor is a specialist. It is hard to refer these patients to a specialist when we have found the primary site of cancer in the patient. For this reason, we therefore provide terminal care for these patients. We have found, however, that holistic and comprehensive care are essential for these patients in providing them with terminal care.

With regard to the second factor, the psychosomatic approach for patients with organic diseases, Dr. Watanabe, our liaison psychiatrist, analyzed our 312 inpatients and found that 60.3% of the total (188 patients) required the psychosomatic approach even though they had had organic diseases. Those patients requiring the psychosomatic approach were categorized into 4 groups (Table 5). The first group was composed of patients whose condition itself required the psychosomatic approach. Mental disorders, psychosomatic diseases and organic brain syndromes were included in this group. This group made up 41.0% of the total. Those patients in a neurotic state secondary to primary organic diseases during their hospital stay, who made up 32.4% of the total, were classified into the second group. The third group consisted of patients who had had some kind of trouble during their stay in the hospital: for example, the suicidal attempts of depressed patients, the wrist cutting of a patient with a borderline personality and the pilferage of a hysterical patient. This group amounted to 13.8% of the total. The rest of the patients fell into Group IV. The patients falling into Groups II and III had mental symptoms which appear to have developed due to physical and psychosocial stress resulting from becoming ill or from admission to the hospital. These patients numbered 79 and made up 25.3% of the total. Based on this survey, it may be concluded that about

TABLE 5. Psychosomatic approach for patients with organic diseases.

Group	Condition	Disease	Number (%)
I	Condition itself required the PSM approach	a. Mental disorders b. Psychosomatic disease c. Organic brain syndrome	77 (41.0)
II	Neurotic overlay	a. Depressive reaction b. Anxiety reaction c. Other overlay status	61 (32.4)
III	Trouble	a. Trouble behavior b. Complicated relationship between pt. and Dr.	26 (13.8)
IV	Miscellaneous		39 (20.7)

TABLE 6. Relationship between hospital stay and reactive mental symptoms in patients with organic diseases.

Hospital stay (days)	Incidence of reactive mental symptoms (%)
0 — 9	6/70 (8.6)
10 — 19	14/82 (17.1)
20 — 29	14/60 (23.3)
30 — 39	10/34 (29.4)
40 — 49	8/21 (38.1)
50 — 59	8/16 (50.0)
60 —	19/29 (65.5)
	79/312(25.3)

one fourth of hospitalized patients have some kind of reactive mental symptoms. These mental symptoms tend to increase with extended hospitalization. This conclusion will be appreciated if the data regarding patients staying in the hospital for more than 60 days in considered (Table 6). The proportion of patients with reactive mental symptoms was 65.5%. That is, two out of three patients had mental symptoms in addition to their physical problems.

From observation of actual activity in the ambulatory care clinic and the inpatient ward many important things have been learned which must be passed on to students who wish to become primary care physicians.

Primary Care Education at Kawasaki Medical School

Undergraduate education in primary care is provided to the 4th and 6th year medical students. We have tried to emphasize the five attributes of primary care, the basic concepts of medical care, practical training in interviewing techniques and physical examination, and practice in our ambulatory care clinic. Table 7 lists the titles of the lectures given to 4th year medical students at Kawasaki Medical School. As can be seen by the table, lectures totaling 24 hours are given with titles such as, the Basic Concepts of Medical Care ; What is primary care? Team Care ; Interviewing Skills, and Psychosomatic Medicine.

TABLE 7. Titles of the Primary Care lectures given to 4th year medical students.

Title	Hours
1 Basic concepts of medical care	2
2 What is primary care	2
3 Team care	2
4 Interviewing skills	2
5 Psychosomatic medicine part I	2
6 Psychosomatic medicine part II	2
7 Community care	2
8 Habitual diseases	2
9 Basic concepts of treatment	2
10 Nutrition and diet therapy	2
11 Ambulatory minor surgery	2
12 Terminal care	2
	24 hours

Ambulatory care experience is provided to 6th year medical students. These students complete bedside training in internal medicine, surgery, pediatrics and OB/GYN during their 5th year. All of that training, however, is performed in the wards. For this reason, most students are excited at meeting new patients in the outpatient clinic. They must take histories and examine new patients to discover their problems and they must consider management within a limited time period. Following such patient examinations the staff doctor gives the students advice for better care.

Most of our staff has received teacher training in primary care medicine for 2 months at Beth Israel Hospital, the affiliated hospital of Harvard Medical School in Boston. We have decided to model our ambulatory care center and postgraduate education as much as possible after theirs. Their graduate primary care residency program is 3 years in length. First year residents have the same inpatient schedule as that of the traditional internal medicine program. Half a day per week is spent in the primary care unit and the resident begins to build a panel of patients to care for throughout his or her three years of training. The patients cared for during this ambulatory session are assigned to the resident from a variety of sources including patients discharged from the hospital after an acute illness, new patients requesting an appointment with a doctor in the primary care unit, patients referred from the Emergency Room or some other hospital clinic or physician, and patients reassigned to the first year resident from the practices of graduating third year residents. In the second and third years of the program approximately half of the time is devoted to ambulatory rotation, usually in blocks of four to six weeks interspersed with traditional inpatient and subspecialty rotation. While on the inpatient service, primary care residents continue to have one or two half-day sessions per week in the primary care unit to allow for continuity of care for their own patients. The final year of training emphasizes the teaching role of the resident for junior colleagues and students, and greater independence in the practice and the design of elective experiences of special interest to physicians about to enter practice. Based on this primary care program of Beth Israel Hospital, we have

TABLE 8. Postgraduate education of the Department of Primary Care Medicine in Kawasaki Medical School.

	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
Junior resident	\	PCM●			IM△, 2 divisions*			PCM●		EM▲		
		IM△, 2 divisions*			EM▲		minor surgery	PCM●				
Senior resident	First-year	rotation(1)**		rotation(2)**		rotation(3)**		PCM●				
	Second-year	rotation(4)**		rotation(5)**		rotation(6)**		PCM●				
	Third-year	elective						PCM●				

● PCM : Primary Care Medicine

△ IM : Internal Medicine

▲ EM : Emergency Medicine

* Internal Medicine (8 divisions) : elective from hematology, neurology, gastroenterology (1), gastroenterology (2), chest and respiratory diseases, nephrology, endocrinology, cardiology

** rotation (1)–(6) : psychiatry, radiology, public health, clinical pathology, dermatology, ophthalmology, ENT, surgery, orthopedics, pediatrics

created our own primary care program at Kawasaki Medical School, which can be seen in Table 8. At present, 13 doctors are under training in our residency program. There are two aims to this residency program : to train doctors to become practicing primary physicians and to train them to become preceptors of primary care. In our program of education, we give training to first year residents in our ward to teach them how to provide patient-centered care rather than to use the doctor-oriented or disease-oriented approaches, the aim of which is to cure. Most patients in our ward have chronic common diseases of slight severity, such as diabetes mellitus, hypertension, obesity and peptic ulcers, which are also very common in our outpatients. Based on guidelines we have set down, residents provide patients with better understanding of their illnesses, check the severity of diseases and complications, determine a treatment plan, attempt to bring about life behavior changes and try to find any obstacles which might impair compliance with team. They learn the role of the doctor in a team care situation and how to develop a good relationship between the patient and provider under the supervision of a staff doctor. How to make diagnoses of difficult cases, and how to provide terminal care and brief psychotherapy and drug therapy for patients with depression or neurosis are important subjects to learn during this period. Since the average stay of patients in our ward is only about 20 days, residents training for 3 to 4 months in the ward frequently have the opportunity to treat common diseases. They become very familiar with these common diseases and thus they can provide better care from admission to discharge on their own day after day. In addition, patients with rare diseases are admitted to our ward when it is difficult to make a diagnosis in the outpatient clinic, and thus it is not rare to find a malignant lymphoma or cancer with bone metastasis in a patient with a fever of unknown

origin, lumbago or weight loss. Residents learn from these patients how to provide care in cooperation with specialists. From the second half of the first year to the first half of the second year, residents spend 4 months in emergency care and intensive care to obtain the basic skills of cardio-pulmonary resuscitation, 2 months in minor surgery and 2 months in community care at the Kurashiki Station Clinic followed by a four division rotation in internal medicine of 2 months each. During the latter half of the second year, one-half day per week is spent in our ambulatory clinic to provide continued care for patients discharged from the hospital. The significance of the patient and provider relationship in the long-term follow up of chronic disease, the indications of admission and the timing of consultation with specialists are an important part of primary care practice that residents must learn during the ambulatory care experience.

Further training from the third year is called senior residency. Residents spend half a year in our department to provide ambulatory care 3 times per week. The rest of the time they are involved in teaching junior residents in the ward and assisting staff doctors in giving undergraduate education to 6th year medical students in the ambulatory care clinic. They rotate to other departments in which they could not spend time during their junior residency period. This rotation includes psychiatry, radiology, public health, clinical pathology, dermatology, ophthalmology, ENT, etc. Of course, the curriculum for this residency program is not final, and it is hoped that continuing improvement in the program will take place in response to requirements.

Expectations for the Future

As we have already been indicated, since our ambulatory clinic facility is hospital-based, there are additional problems concerned with the patients. First of all, some patients come from very remote areas such as Hiroshima and Tottori with the expectation of secondary or tertiary levels of care. Secondly, many patients tend to be overly optimistic regarding treatment. With these patients, we must be patient enough to give a full explanation of why only a small number of tests and injections are given, in order not to make them feel disappointed or worried and in order to maintain mutual trust. As to out of hospital medical care, such as home visits, community care, and health promotive activities, which are not provided at present, we intend to make a great effort to provide these services in the future.

Most of our staff doctors have been internists, so that we ourselves need training to be real preceptors of primary care. What we must do in the future is to recruit staff doctors who have completed the regular course of the primary care residency program. Modification of our residency program to take into consideration the particular characteristics of our Japanese culture with their advice will also be essential in training future primary care physicians.