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A Preliminary Study on the Knowledge and Attitudes of Physicians at Two University Hospitals towards the Medical Insurance System of Japan

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Ota, H., Tanimoto, S., Takayanagi, K., Kimura, T. and Oida, T. *A Preliminary Study on the Knowledge and Attitudes of Physicians at Two University Hospitals towards the Medical Insurance System of Japan.* Tohoku J. Exp. Med., 2000, **190** (2), 143-155 —— In this preliminary study, we surveyed the physicians at two academic hospitals on their knowledge of and attitudes toward the medical insurance system in Japan. Most of the physicians had not read the "Ministerial Ordinance on Insurance Medical Institutions' and Insurance Medical Doctors' Medical Treatment under Health Insurance." Of the 433 physicians who filled out the questionnaire completely, 34% had either not read or rarely read the "Medical Fee Point List." Most (89.1%) of the physicians knew that there is a stepwise reduction in the hospitalization fee as the length of a patient's hospital stay increases. However, approximately 30% did not know the stipulation of obtaining an informed consent from the patient prior to blood transfusion. As for the right of patients to see their medical care remuneration statements, which was decided by the government in 1997, 26.8% of the physicians did not know this rule. Physicians who had read the "Ministerial Ordinance on Medical Treatment," were more likely to read the "Medical Fee Point List" frequently; were more likely to know the stipulation about diminishing hospitalization fee; were more likely to know that an informed consent must be obtained prior to blood transfusion; and were more likely to know that patients had a right to see their medical care remuneration statements. The longer the clinical experience of the physician, the more likely that the physician had read the "Ministerial Ordinance on Medical Treatment" and know the other stipulations well. In these two academic hospitals, it is important to establish educational seminars for physicians on the guidelines of the medical insurance system so that physicians will become familiar with the medical insurance system quickly. ———— health insurance system; physicians' knowledge; physicians' attitude; education

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In 1961 the Japanese government established a universal medical insurance system in Japan. Since then, all Japanese nationals have had to enroll in an insurance program. In this insurance system, everyone can access any medical facility with a co-payment of 20–30% of the medical cost.

All medical doctors that provide care under the universal medical insurance program must provide medical services according to the rules stated in the "Ministerial Ordinance on Insurance Medical Institutions' and Insurance Doctors' Medical Treatment under Health Insurance" (hereinafter referred to as "Ministerial Ordinance on Medical Treatment"). When a medical facility provides a medical service that is covered by the universal insurance to a patient, the facility will receive a medical fee from the patient's insurer. The medical fee is calculated on the basis of a point system, in which a stipulated number of points is assigned to each medical service; the number of points assigned to each service is listed in the "Medical Fee Point List" (fee-for-service system). Each medical care facility claims reimbursement every month by submitting a statement of medical care remuneration for each patient. The medical care remuneration statements are sent to the Examination and Payment Organization, which is an independent organization. The screening committee of the Examination and Payment Organization, which is composed of representatives of physicians, insurers and men of learning and experience, examines each statement to see if it is appropriate or not. After deducting the points that are not appropriate from each statement, the examined statements are sent to the insurers. The patient's insurer pays a medical fee of an amount that is a fixed rate of the number of points on the statement of that patient (one point is equal to 10 yen), to the medical facility through the Examination and Payment Organization (National Health Administration in Japan 1995).

Most of a medical facility's revenue comes from its medical activities. The National Hospital Federation of Japan conducts a survey of hospital management annually. The survey of 1188 hospitals performed in 1998 showed that the gross income per 100 inpatient beds was ¥129 241 000, and that medical income comprised 98.5% of that gross income. The medical fees from insurers comprised 95.8% of the medical income (Management Survey of Hospitals in Japan 1999). Therefore, 94% of the medical facilities' revenues came from the medical care statements. The statements are based on the health care services provided by the medical facility, most of which are provided by the physicians. Therefore, it is necessary for physicians to have sufficient understanding of the medical insurance system in Japan.

However, the amount of information in the "Medical Fee Point List" is enormous because it describes not only the number of points corresponding to each medical service, but also rules that stipulate the medical practice of physicians. It is nearly impossible for physicians to know every detail in the "Medical Fee Point List." Therefore, it is crucial for hospital superintendents to relay the

appropriate information about medical insurance correctly to each physician; this is important for both the hospital and the physician's medical practice.

In this preliminary study, we surveyed physicians at two academic hospitals to examine the physicians' attitudes and knowledge about the medical insurance system.

Materials and Methods

The physicians at two private University Hospitals were surveyed in this study. Hospital A is located in Tokyo with 579 physicians, and Hospital B is located in Ishikawa Prefecture with 302 physicians. There is a geographical difference between these two academic hospitals: One is located in a metropolitan area and the second is located in the suburb of a city. Another difference between these two hospitals is the medical record system. Hospital B has adopted an electronic medical record system which is not yet popular in Japan. Regarding the medical record system, Hospital B has a more advanced information system.

The questionnaires were mailed to a representative at each hospital, and the representative was asked to distribute the questionnaire to the medical faculty and residents at the respective hospital. A cover letter describing details of the study was given to the representative and physicians. The questionnaire was self-administered and mailed back to us by the physician.

As we considered this to be a preliminary study and to make it easy for physicians to complete the questionnaire, the questionnaire consisted of only 11 items. The questionnaire was in Japanese, and the content of part of the questionnaire (Question [4]-[10]) translated to English is shown in Table 1. Question (1) concerns physician's gender and Question (2) concerns how-long he/she has been working as a physician. In Question (3) as to where the physician learned about the medical insurance system in Japan, the physician chose answer(s) from: (a) a college course, (b) an university hospital, (c) a national/prefectural hospital, (d) other public hospital, (e) a private hospital, (f) a clinic, and (g) other medical facility. Question (4) concerns the "Ministerial Ordinance on Medical Treatment," which describes the fundamental rules of the medical insurance system in Japan and is published by the Ministry of Health and Welfare. Question (5) concerns the "Medical Fee Point List," which lists the precise number of points corresponding to each medical service as well as the rules stipulating the physician's medical practice. The physician was asked to rate how often he/she reads the "Medical Fee Point List" on a five-point scale (1=not at all, 3=intermediate, 5=very frequently). Questions (6) and (7) concern how often the physician utilizes the review system of remuneration statements at the respective hospital. The physicians answered Questions (6) and (7) according to a five-point rating scale. In Questions (8) and (9), we surveyed the physicians' knowledge of two rules that are stipulated in the "Medical Fee Point List" to check the physicians' knowledge of the "Medical Fee Point List." Question (8)

TABLE 1. *Questionnaire items (4)-(10) and the physicians' responses*

No.	Question	Answer
(4)	Have you read the "Ministerial Ordinance on Insurance Medical Institutions' and Insurance Doctors' Medical Treatment under Health Insurance" ?	Yes 37.2% No 62.8%
(5)	How often do you read the "MMedical Fee Point List" ? (5-point scale: 1=not at all, 3=intermediate, 5=very frequently)	1=10.4% 2=23.6% 3= 4.6% 4=55.7% 5= 5.8%
(6)	How often do you have the statements of medical care remuneration of your patients reviewed by office clerks ? (5-point scale: 1=not at all, 3=intermediate, 5=very frequently)	1=13.6% 2=17.3% 3= 6.2% 4=47.8% 5=15.0%
(7)	How often do you have the statements of medical care remuneration of your patients reviewed by peer physicians ? (5-point scale: 1=not at all, 3=intermediate, 5=very frequently)	1=15.7% 2=23.1% 3= 6.0% 4=45.0% 5=10.2%
(8)	The longer a patient is admitted in the hospital, the greater the reduction in the per diem hospitalization fee. Are you aware of this rule ?	Yes 89.1% No 10.9%
(9)	Before a patient receives a blood transfusion, a written informed consent must be obtained from the patient. Are you aware of this rule ?	Yes 70.7% No 29.3%
(10)	Do you know that patients have a right to see their statements of medical care remuneration ?	Yes 73.2% No 26.8%

concerns the hospitalization fee. Question (9) concerns the requirement that an informed consent must be obtained from the patient prior to blood transfusion, which was established in 1997. The right of a patient to see his/her remuneration statement, which was decided and publicized by the Ministry of Health and Welfare in 1997, was a significant development in the health care system in Japan during the past decade. Before then, the patient was prohibited from seeing his/her statement. In Question (10), we examined whether physicians knew this new rule. Question (11), which was directed to physicians who had answered "yes" on Question (10), asked how the physician learned about this new rule and was asked to choose all those that applied: (a) Notification from the hospital superintendent; (b) Communication with peer physicians; (c) Information through mass media; and (d) Other. Due to the limitations in the number of hospitals selected and the composition of the questionnaire, we did not expect to obtain definite conclusions, but rather to obtain the tendency of academic physicians' attitudes towards the medical insurance system in Japan.

For statistical analyses, the chi-square test was used. For statistical analyses

of the results of the five-point scale questionnaires, the Kruskal-Wallis test was used.

Results

Overall results

The number of physicians at Hospitals A and B who filled out at least part of the questionnaire was 323 (55.8%) and 166 (55.0%), respectively, and the number of physicians who filled out the questionnaire completely was 285 (49.2%) and 148 (49.0%), respectively (Table 2). The questionnaires that had been filled out completely, were analyzed. The overall response rate from the two hospitals was 49.1%. The percentage of respondents who were male was 85.5%, and the mean length of clinical experience of all of the respondents was 12.0±8.5 years (mean±S.D.). The facilities at which the physicians learned about the medical insurance system are shown in Table 3. The majority of the physicians (61.4% of responses) answered that they learned about the medical insurance system at an academic hospital. In this study, the questionnaire was distributed to physicians who worked at two academic hospitals. Therefore, it is not surprising that the majority of physicians learned about the medical insurance system at an academic hospital. The respondents who answered that they had learned about the system at other facilities and not at an academic hospital nor in a college course, may be referring to the medical facilities where they had been trained as residents. Nearly 10% of the physicians (9.7% of responses) stated that they learned about

Table 2. *Physicians who filled out the questionnaire completely*

Hospital	Number of respondents (%)	Gender of respondents (Male) (%)	Length of clinical experience (years, mean±S.D.)
A	285 (49.2%)	83.5	11.5±7.9
B	148 (49.0%)	89.2	13.2±9.4
Total	433 (49.1%)	85.5	12.0±8.5

Table 3. *Facility where physicians learned about the medical insurance system*

Facility	Percentage of total responses (%)
College course	9.7
Academic hospital	61.4
National or municipal hospital	2.3
Public hospital	7.8
Private hospital	10.1
Clinic	2.7
Other	6.0

Answers are multiple responses.

TABLE 4. *Ways in which the physicians learned about the right of patients to see their medical care remuneration statements*

1.	Notification from the hospital superintendent	39.1%
2.	Communication with peer physicians	20.6%
3.	Information through mass media	37.4%
4.	Other means	2.9%

the system in a college course.

Table 1 shows the physicians' responses to Questions (4)-(10). In Question (4), the physician was asked whether he/she had read the "Ministerial Ordinance on Medical Treatment." Of the 433 physicians, 62.8% had not read the "Ministerial Ordinance on Medical Treatment." In Question (5), we asked how often the physician reads the "Medical Fee Point List." Of the 433 physicians, 34% reported a negative attitude (point 1 [not at all] or 2 [rarely]). Knowledge of the "Ministerial Ordinance on Medical Treatment" and the "Medical Fee Point List" is essential for practicing medicine under the medical insurance program. The physicians in this study may not be motivated to become familiar with the medical insurance system. On Questions (6) and (7), most of the physicians responded that their medical care remuneration statements are peer-reviewed. The hospitalization fee consists of two parts: (1) the hospitalization management fee, and (2) the hospitalization fee (in a narrow sense) which includes the environmental fee and nursing fee. Of these, the hospitalization management fee and nursing fee decrease in a stepwise manner as the length of the patient's stay increases. On Question (8), nearly 90% of the physicians knew the rule of the stepwise reduction in hospitalization fee for patients who are admitted for longer periods of time. It would seem that this rule should be common knowledge to physicians in a health care facility; however, 10% of the physicians did not know this basic rule. On Question (9), 29.3% of the respondents did not know the rule of the necessity of obtaining an informed consent prior to blood transfusion. Blood transfusion is frequently performed. Therefore, all physicians should be familiar with this stipulation no matter how recently it was enacted.

Prior to 1997, the Ministry of Health and Welfare prohibited disclosure of the statement of medical care remuneration to the patient. In 1997, the Ministry decided to allow patients to see their medical care remuneration statements. Question (10) asked if the physician knew the new rule that patients have a right to see their medical care remuneration statements; 26.8% of the respondents were not aware of this rule. The physicians who answered "yes" to Question (10), were asked where he/she had learned about the right of patients to see their remuneration statements in Question (11). Of all of the responses to Question (11), 39.1% of the responses were that the physician learned about this new rule through notification from the hospital superintendent, and this percentage was similar to the percentage of responses that the physician learned this through the mass media

TABLE 5. *Length of clinical experience of the physicians*

Length of clinical experience (years)	Number	Percentage (%)
0-10	214	49.4
11-20	154	35.6
21-40	65	15.0

(Table 4). The poor results on Questions (9), (10) and (11) indicate that improvements in the information delivery system within each hospital, are required.

Differences between the two hospitals

We examined if there were any differences in the responses of the physicians at the two hospitals. The physicians at Hospital A had their remuneration statements reviewed by peer physicians more often than the physicians at Hospital B ($p<0.05$). On the other hand, the physicians at Hospital B had their remuneration statements reviewed by office clerk more often than the physicians at Hospital A ($p<0.05$). There were no other significant differences in the responses of the physicians at the two hospitals.

Length of clinical experience

To examine the relationship between the physician's attitudes and the length of clinical experience, the physicians were divided into the following three categories according to the length of clinical experience: 0-10 years, 11-20 years, and 21-40 years. The number of physicians at the two hospitals in each category of length of clinical experience is shown in Table 5. The percentage of physicians in each category of length of clinical experience at Hospital A and that at Hospital B did not significantly differ. The percentage of physicians who had read the "Ministerial Ordinance on Medical Treatment" was positively correlated with the length of clinical experience ($p<0.05$) (Fig. 1). There was no correlation between the frequency with which physicians had their remuneration statements reviewed by office clerk, and length of clinical experience. There was also no correlation between the frequency with which physicians had their statements checked by peer physicians, and length of clinical experience. The relationship between the percentage of physicians who knew the stepwise reduction in hospitalization fee per diem, and length of clinical experience is shown in Fig. 2. Most (89.1%) of the physicians in our survey knew this rule. However, physicians who had a shorter length of clinical experience, were less likely to know this rule, and every physician with 21 or more years of clinical experience in this study knew this rule. There was no correlation between the percentage of physicians who knew that an informed consent must be obtained before blood transfusion, and length of clinical experience. Fig. 3 shows the percentage of physicians in each

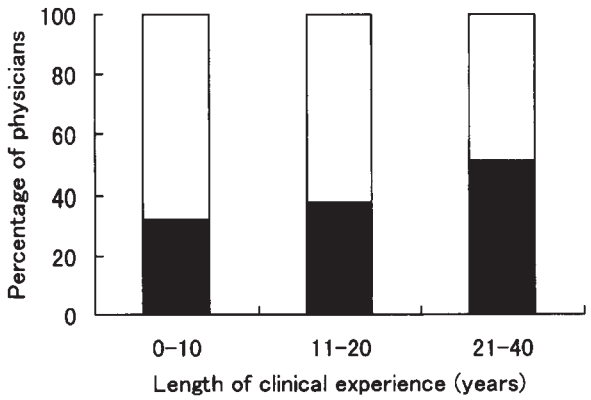

Fig. 1. Percentage of physicians who have read the Ministerial Ordinance on Medical Treatment (black bar) among those with 0-10 years, among those with 11-20 years, and among those with 21-40 years of clinical experience. There was a significant positive correlation between the percentage of physicians who have read the Ministerial Ordinance and the length of clinical experience ($p<0.05$).

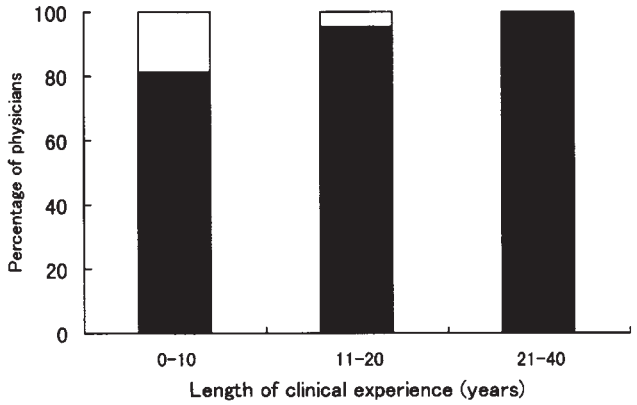

Fig. 2. Percentage of physicians who knew that the per diem hospitalization fee decreases in a stepwise manner in patients who are hospitalized for a longer period of time (black bar), among those with 0-10 years, among those with 11-20 years, and among those with 21-40 years of clinical experience. There was a significant positive correlation between the percentage of physicians who knew this rule, and the length of clinical experience ($p<0.05$).

category of length of clinical experience, who knew that patients have a right to see their medical care remuneration statement. The percentage of physicians who knew this rule was positively correlated with the length of clinical experience ($p<0.01$).

Physicians who had read the "Ministerial Ordinance on Medical Treatment"

The physicians were divided into two groups based on whether he/she had read the "Ministerial Ordinance on Medical Treatment". We examined differences between these two groups. Physicians who had read the "Ministerial Ordinance on Medical Treatment" were significantly more likely to read the "Medical Fee Point List" frequently ($p<0.01$) (Fig. 4); were significantly more likely to know the rule of stepwise reduction in hospitalization fee ($p<0.01$); and

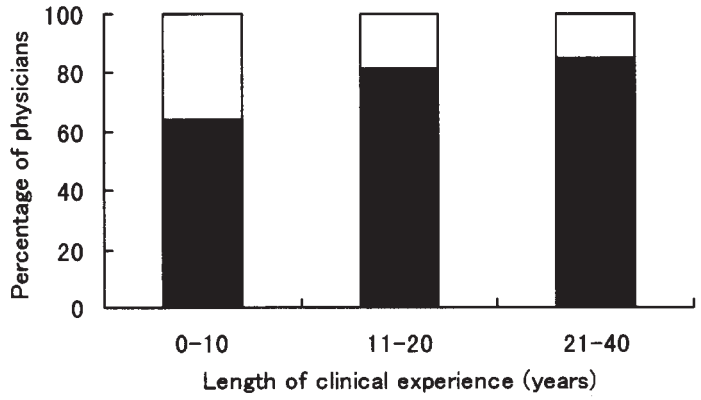

Fig. 3. Percentage of physicians who knew that patients have a right to see their medical care remuneration statements (black bar), among those with 0-10 years, among those with 11-20 years, and among those with 21-40 years of clinical experience. There was a significant positive correlation between the percentage of physicians who knew this rule and the length of clinical experience ($p<0.01$).

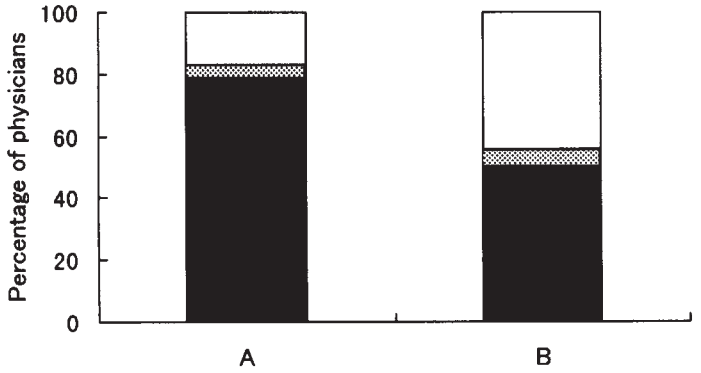

Fig. 4. Percentage of physicians who read the Medical Fee Point List frequently or somewhat frequently (Points 4 and 5, ■), at an intermediate frequency (Point 3, ▨), or rarely or not at all (Points 1 and 2, □), among (A) those who have or (B) those who have not read "the Ministerial Ordinance on Medical Treatment." The physicians who have read the "Ministerial Ordinance on Medical Treatment" were significantly more likely to read the "Medical Fee Point List" frequently ($p<0.01$).
Categorical Axis:
A: physicians who have read the "Ministerial Ordinance on Medical Treatment."
B: physicians who have not read the "Ministerial Ordinance on Medical Treatment."

were significantly more likely to know the stipulation of obtaining an informed consent prior to blood transfusion ($p<0.01$) (Fig. 5). The physicians who had read the "Ministerial Ordinance on Medical Treatment" were more likely to know that patients had a right to see their medical care remuneration statements, than the physicians who had not read the "Ministerial Ordinance on Medical Treatment," although this difference was not statistically significant ($p=0.067$).

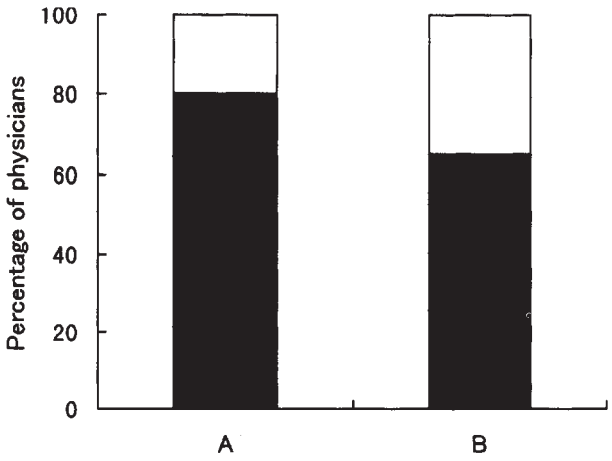

Fig. 5. Percentage of physicians who knew that an informed consent must be obtained prior to blood transfusion (black bar), among (A) those who have or (B) those who have not read the "Ministerial Ordinance on Medical Treatment." The physicians who have read the "Ministerial Ordinance on Medical Treatment" were significantly more likely to know that an informed consent must be obtained prior to blood transfusion ($p<0.01$).
Categorical Axis:
A: physicians who have read the "Ministerial Ordinance on Medical Treatment."
B: physicians who have not read the "Ministerial Ordinance on Medical Treatment."

Reliability of the questionnaire

Questions (4)-(10) asked about the physicians' attitudes toward and knowledge of the medical insurance system, and the α coefficient of these questions was 0.674. As each question item was deleted, each α coefficient value was less than 0.674. Therefore, these questions seem to have reliability.

Discussion

The principal mission of physicians is to cure the illnesses of patients. From this viewpoint, knowledge about the "Ministerial Ordinance on Medical Treatment" and the "Medical Fee Point List" may not seem to be important. However, as physicians who receive medical fees under the universal medical insurance program, they can not ignore the rules within the framework of the medical insurance system. The medical services that are covered by medical insurance are specified in the provisions of the Health Insurance Law and others. Further details are provided in the "Ministerial Ordinance on Medical Treatment," which is composed of two chapters. The first chapter describes the ministerial ordinance on medical treatments provided by medical institutions under the universal medical insurance program. The second chapter describes the ordinance on medical treatments provided by medical doctors under the universal medical insurance program. The "Medical Fee Point List" stipulates the number of points that corresponds to each medical service, and the number of points

multiplied by 10 is the amount of money that is reimbursed from insurers. Moreover, the "Medical Fee Point List" describes the conditions under which each point is counted. The existence of such conditions gives healthcare practitioners financial incentives to fit their practice into such conditions. An effort to shorten the length of patients' stays is one such example. In our study, 62.8% of the physicians have not read the "Ministerial Ordinance on Medical Treatment," and 34% either has not read or rarely reads the "Medical Fee Point List." It seems that some physicians, although they are in the minority, are not concerned about the rules of the medical insurance system.

The figures on the statements of medical care remuneration directly determine the medical income of hospitals from the insurers. The statements are inspected at the Examination and Payment Organization, and the mean deduction rate per statement was 1.6% in 1997 (Social Insurance Medical Fee Payment Fund 1997). Each hospital has instituted measures to reduce the amount of deduction by the Examination and Payment Organization. In this study, the statements of 62.8% of the physicians were frequently reviewed by office clerk (point 4 or 5 on the 5-point scale). The statements of 55.2% of the physicians were frequently reviewed by peer physicians (point 4 or 5 on the 5-point scale). Review of remuneration statements by office clerks or peer physicians seems to be a popular measure; however, this may depend on each individual physician's concern about how frequently he/she has his/her statements reviewed by peers.

To infer the physicians' knowledge on the rules regarding the medical fees stated in the "Medical Fee Point List," we chose two items: (1) the longer the length of a patient's hospitalization, the less the hospitalization fee; and (2) an informed consent must be obtained from the patient prior to blood transfusion. The rule regarding the hospitalization fee was well-known, and the rule of obtaining an informed consent prior to blood transfusion is a new rule and was not yet well-known. Our results showed that all of the physicians who did not know the rule of hospitalization fee had less than 20 years of clinical experience. The percentage of physicians who knew that patients have a right to see their medical care remuneration statements, also increased with the length of clinical experience. As shown in Figs. 1, 2 and 3, the longer the clinical experience, the greater the percentage of physicians who were concerned about the medical insurance system. Physicians who had read the "Ministerial Ordinance on Medical Treatment," were more likely to read the "Medical Fee Point List frequently," and to know the stipulation of informed consent prior to blood transfusion. In Tokyo where Hospital A is located, every year a government official gives a lecture on a synopsis of the medical insurance system to physicians who are newly registered as insurance medical doctors. The result of our study showing that the physicians at Hospital A did not have a good attitude towards the medical insurance system, indicates that this education program does not work well and, therefore, the education program needs to be changed. A well-designed education program

will make more physicians aware of the rules of the medical insurance system within a shorter period of time, instead of the longer clinical experience which was an important factor in increasing physicians' interests in the medical insurance system. The education should focus on not only the rules of the medical insurance system, but also filling out appropriate claims of remuneration of medical care. In order to minimize the deduction of hospital income, as well as to provide appropriate medical care, both knowledge of the rules in the "Ministerial Ordinance on Medical Treatment" and the "Medical Fee Point List" and knowledge of the practical use of those rules are important for physicians. Health care reform is rapidly progressing in the United States, and it is much more vital in the United States than in Japan to prepare medical students for a managed care environment (Reid et al. 1995; Nordgren and Hantman 1996; Veloski et al. 1996) and Frazier, et al. (1991) showed that medical interns changed their prescription after an educational program which aimed at reducing the patients' out-of-pocket expenses. Such early exposure during the student period is suggested to Japanese physicians. The subjects of our study were the physicians at two academic hospitals. Therefore, our results may be characteristic of physicians at academic hospitals who have less incentive for increasing hospital income and knowing the rules of medical insurance, than physicians who work in private practice. A similar situation may exist in the United States, as pointed out by Lazarus et al. (1998), who gave a two-day course on managed care to medical students, housestaff, faculty and administrators of the University of California, Davis, Medical School. Despite the fact that many patients in that area are covered by managed care programs, the pre-course questionnaires revealed that the participants' knowledge of and attitudes towards managed care were very negative, and the course participants showed significant improvement in their knowledge of and attitudes toward managed care after completion of the course (Lazarus et al. 1998). To determine the attitudes of all physicians in Japan toward the medical insurance system, more studies on physicians including those at private hospitals and public hospitals need to be performed. To develop an effective educational program, further studies must be performed.

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