Received: 15 March 2022 | Revised: 18 August 2022 | Accepted: 23 August 2022

DOI: 10.1002/jgf2.580

Journal of General and Family Medicine Open Access WILEY

ORIGINAL ARTICLE

The present circumstances of pediatric practice by family physicians in Japan: Cross sectional research

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Abstract

Background: In Japan, pediatric primary care has often been provided not by general practitioners, but by specialists. Although official pediatric training of general practitioners started in Japan in 2018 no studies to date show the extent to which Japanese general practitioners are committed to pediatric care.

Methods: We conducted a questionnaire survey on pediatric training and current pediatric practice for family physicians certified by the Japan Primary Care Association.

Results: Of 1067 Japan Primary Care Association certified family physicians, 288 (27%) responded to the survey. More than 90% had received at least 3 months of pediatric training. Family physicians who completed 6 or more months of pediatric training provided significantly more pediatric care ($p = 0.005$). However, nearly 40% were currently not involved in pediatric care. Japan Primary Care Association certified family physicians are treating acute and chronic common diseases as well as diseases that may intersect with other departments. However, most respondents indicated there are not many opportunities to learn systematically about the care of these diseases.

Conclusions: In Japan, general practitioners are still not actively involved in pediatric care, but they treat patients with diseases that make it difficult to determine the most appropriate department to see and a wide range of age groups. It will become increasingly important to provide learning opportunities and better training environments in these areas with related organizations.

KEYWORDS
family physician, Japan, pediatric practice, pediatric training

1 | BACKGROUND

Primary care in Japan differs greatly from that in other countries, where the number of family physicians and general practitioners is much greater than that in Japan.[1] In these countries, primary care is basically provided by general practitioners, regardless of the nature of the disease; when it is judged that specialized care in each department is necessary, the patient is referred to a specialist in those departments.[2–5] The same is true for pediatric care. In the US, family physicians provide about 30% of pediatric primary care, and in the UK and Australia, general practitioners provide most primary care for children, and pediatricians often provide care when specialty care or inpatient care is needed.[6–8] In recent years, family physicians or general practitioners, called hospitalists, are sometimes in charge of pediatric care up to secondary care, even for inpatient care in some countries.[9] In Japan, however, even in primary care, internal medicine is practiced by internal medicine specialists, pediatrics by pediatricians, and orthopedics by orthopedic surgeons, even in clinics and small- and medium-sized hospitals. Thus, in many cases, organ-based or medical field-based specialists are responsible for not only secondary or tertiary care but also primary care in Japan.[10–12] As for pediatric care, pediatric specialists who are trained mainly in tertiary care are overwhelmingly responsible for primary care such as regular medical checkups, vaccinations, and treatment of common diseases.[13] In Japan, primary care may be better provided by family physicians or general practitioners with specialized training from the perspective of medical economics and quality of primary care, and the same applies to pediatric care.[1]

However, it remains unknown how many family physicians or general practitioners in Japan are actually practicing pediatric medicine. In Japan, training as a general practitioner was only possible for family physicians of the Japan Primary Care Association or for general hospitalists certified by the Japanese Society of Hospital General Medicine.[14–16] Of these, all of them can experience pediatric care at community hospitals during their training, but the training program for the Japan Primary Care Association certified family physicians was the only program that required at least 3 months of pediatric training. However, in 2018, the Japanese Medical Specialty Board launched a new system for general practitioners, and this program includes 3 months of compulsory pediatric training, in 2021, the first general practitioners took the board examination under this system.[16] As of October 2021, the number of family physicians certified by the Japan Primary Care Association was 1067.[17] To date, there have been no studies that accurately survey and analyze the present circumstances of the pediatric practice by general practitioners in Japan, to our knowledge. Therefore, we conducted a questionnaire survey and statistical analysis of physicians who were certified as family physicians by the Japan Primary Care Association to investigate the present pediatric practice of family physicians and whether there is a relationship between their past pediatric training and current actual pediatric practice in Japan.

2 | METHODS

2.1 | Study design and participants

We conducted an internet survey as a cross-sectional study from October 1 to December 31, 2021. Total of 1067 people who were certified family medicine physicians as of 2021 by the Japan Primary Care Association and had already been in clinical practice as family medicine physicians were recruited via email. The survey was conducted using Google Forms. As such a survey has never been done before in Japan and the medical situations in other countries are quite different from those in Japan, we newly developed the survey items (Appendix 1) after the several times' reviews to improve its clarity and brevity by the Committee on Pediatric and Adolescent Health Care of the Japanese Association of Primary Care Expert Panel consisting of four pediatric specialists including one board member of Japan Pediatric Society and six family physicians including one family physician certified as American Academy of Family Physicians.

2.2 | Data analysis

In this research, we defined a “child” as someone under 16 years old. And we defined “Regular pediatric practice” as seeing over 50 pediatric patients per week (over 10 pediatric patients per day) in this research. All data were collected anonymously. We used descriptive statistics and chi-square tests to analyze. The analyses were performed using SAS JMP version 11.2.0 (SAS). Two-tailed *p*-values of less than 0.05 were considered statistically significant.

2.3 | Ethical disclosure

The survey was approved by the Committee on Ethics of the Japan Primary Care Association (IRB:2019-009-2). And informed consent to use the data for this research was obtained from the participants. The investigation was conducted in accordance with the Declaration of Helsinki of 1975.

3 | RESULTS

The number of respondents was 288, representing 27% of all Japan Primary Care Association certified family physicians in Japan. The year of national doctor license acquisition for the respondents ranged from 1999 or earlier to 2016, and each age group was almost equally represented. Of these, six physicians (2.1%) were board-certified pediatrics specialists. For the place of practice, 52.1% of the respondents were currently working in clinics where no pediatricians were employed, and 30.9% were working in hospitals where pediatricians were employed. As for experience in pediatric care, 90.3% of the respondents had pediatric training during their

initial clinical training for the internship; nearly 35% had pediatric training for more than 6 months during their training as the Japan Primary Care Association certified family physicians, and nearly half had pediatric training for 3–6 months. Secondary care facilities accounted for more than 75% of the medical institutions at which they received pediatric training, but 22% also reported training at clinics that did not specialize in pediatrics and were taught by experienced primary care physicians (Table 1).

In terms of current pediatric care, 38.5% of all the Japan Primary Care Association certified family physicians reported that they did not provide pediatric care, and of those who did provide pediatric care, more than 55% provided care for only about an average of 15 or fewer children per week (Table 2). The chi-square test analysis showed no significant difference between the duration of pediatric training and whether they were practicing pediatrics or not, but there was a significant difference between the duration of pediatric training and whether they were seeing more than 50 children per week or not (less than 6 months and more than 6 months; $p = 0.005$, less than 12 months and more than 12 months; $p = 0.002$) (Table 3). Common acute infectious diseases such as acute upper respiratory tract infection and digestive tract infection were the most common types of pediatric care provided by the Japan Primary Care Association certified family physicians, followed by chronic disease management, adolescent care, psychosomatic disorders (including children not attending school), and developmental disorders. In addition to treatment, vaccination and health checkup activities were also actively conducted (Figure 1). However, about half of the respondents had no systematic training in the fields of adolescence, truancy, psychosomatic disorders, developmental disorders, and home care, although many of them reported being eager to train in such fields (Figure 1). A total of 125 family physicians (43%) said they had no opportunity to learn about pediatric care, citing a lack of time and the fact that they do not practice pediatric care as reasons for not having done so (Table 4).

TABLE 1 Participants' characteristics

Participants' characteristics ($n = 288$)	*n* (%)
National doctor license acquisition year	
Before 2000	25 (8.7)
2001–2005	63 (21.9)
2006–2010	97 (33.7)
2010–2015	103 (35.7)
Present working facilities	
Solo practice at clinic	38 (13.2)
Group practice with pediatrician at clinic	15 (5.2)
Group practice without pediatrician at clinic	112 (38.9)
Group practice with pediatrician at hospital	83 (28.9)
Group practice without pediatrician at hospital	37 (12.8)
Others	3 (1.0)
Past pediatric training during internship	
Yes	260 (90.3)
No	28 (9.7)
Past pediatric training after internship	
None	11 (3.8)
<3 months	35 (12.2)
3≧, <6 months	143 (49.7)
6≧, <12 months	52 (18.1)
12≧, <36 months	35 (12.2)
≧36 months	12 (4.2)
Experienced care during pediatric training (Multiple answers allowed)	
Tertiary care	51 (17.7)
Secondary care	223 (77.4)
Primary care with pediatric advocation	74 (25.7)
Primary care without pediatric advocation	40 (13.9)
Rural and Remote care	25 (13.9)
Others	18 (6.3)

4 | DISCUSSION

The Japanese Primary Care Association's training program for certified family physicians was designed on the assumption that

TABLE 2 The condition of present pediatric practice

Pediatric practice	*n* (%)
Present pediatric practice ($n = 288$)	
Yes	177 (61.5)
No	111 (38.5)
The number of pediatric patient/week ($n = 176$)	
<15	98 (55.7)
16–25	40 (22.7)
26–50	14 (8.0)
51–75	6 (3.4)
>76	18 (10.2)

TABLE 3 The relationship between the duration of pediatric training and present practice

Past pediatric training after internship	Present pediatric practice			The number of pediatric patient/week		
	Yes	No	*p*-Value	50>	50<	*p*-Value
3 months>	28	19	0.772	27	1	0.055
3 months<	149	92		125	23	
6 months>	112	78	0.220	103	9	0.005*
6 months<	65	33		49	15	
12 months>	146	96	0.362	132	14	0.002*
12 months<	31	15		20	10	
36 months>	170	106	0.821	147	22	0.290
36 months<	7	5		5	2	

**P*-values were calculated by chi-square test and less than 0.005 were considered statistically significant.

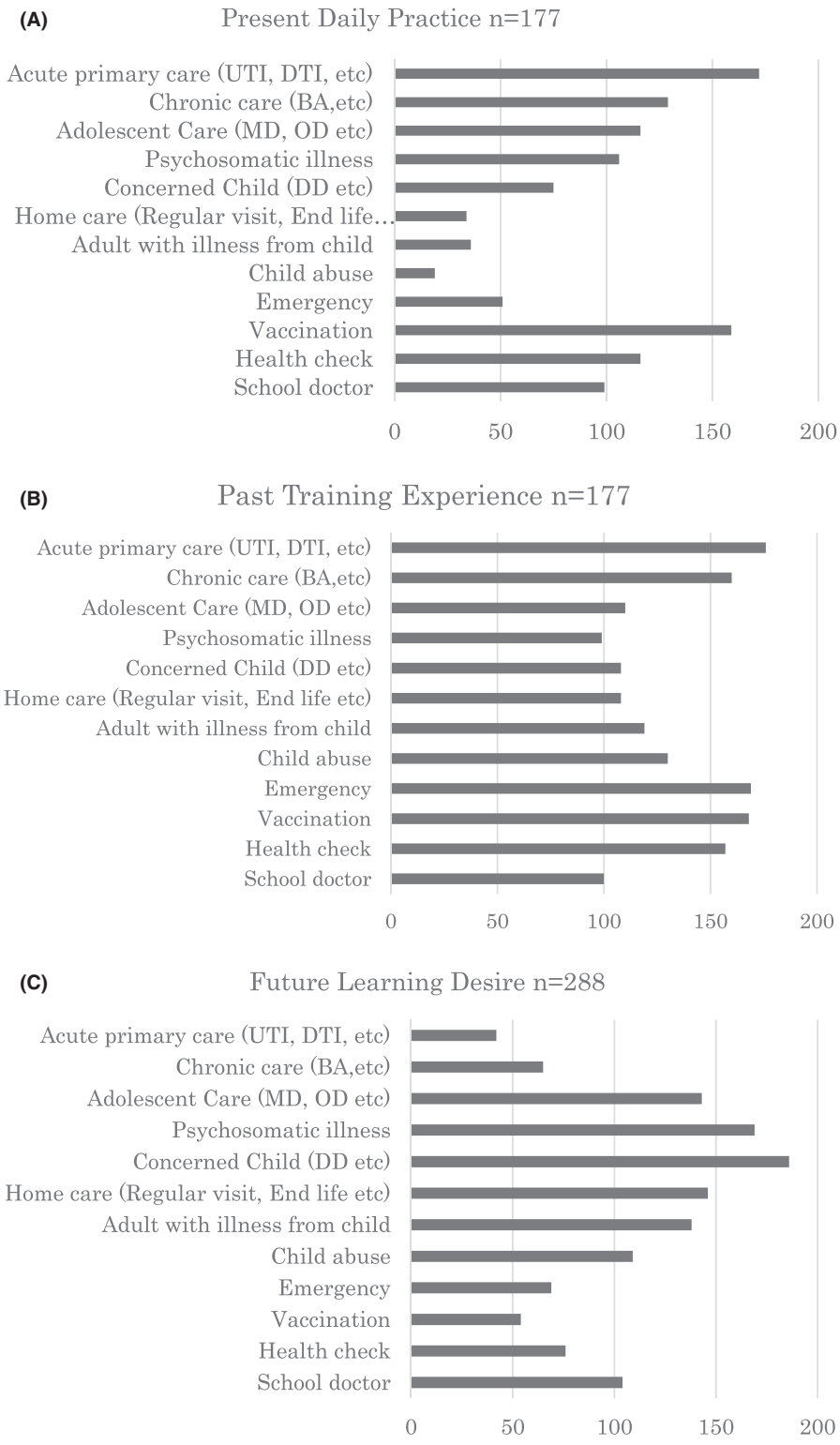

FIGURE 1 The contents of present pediatric practice (multiple answers allowed), the contents of past training experience (multiple answers allowed), the contents of future learning desire (multiple answers allowed). BA, bronchial asthma; DD, developmental disorders; DTI, digestive tract infection; MD, menstrual disorders; OD, orthostatic dysregulation; UTI, upper respiratory tract infection.

specialists will continue to practice pediatric medicine in the future.[14] Although it cannot be said to be sufficient, the three-month training in pediatrics combined with training at small medical institutions that provide pediatric care might enable trainees to reach a first step at which they can practice pediatric primary care through continuous learning opportunities. Based on the finding that family physicians who have completed 6 months or more of pediatric training significantly were doing more pediatrics practice, though we cannot rule out the possibility that physicians who were more oriented toward pediatric care from the beginning chose a longer pediatric training program, it might be advisable to extend the training period a little longer for family physicians to practice pediatric medicine in Japan. In fact, in this survey, the majority of the Japan Primary Care Association certified family physicians had at least 4 months of pediatric training, and in some cases more than 3 years, including both initial clinical training for internship and

TABLE 4 The reason for unlearning pediatrics (multiple answers allowed

Reason for unlearning ($n = 125$)	n (%)
Too busy to learn	72 (52.6)
Distance barrier for learning	23 (18.4)
Economical barrier for learning	5 (4.0)
Too few staffs to go learning	24 (19.2)
No need to pediatric practice	57 (45.6)
Others	8 (6.4)

family medicine residency. However, even if they became competent in pediatric practice owing to the length and content of their training, the majority were not involved in pediatric practice; 40% of them did not practice pediatrics at all after becoming the Japan Primary Care Association certified family physicians, and even among those the Japan Primary Care Association certified family physicians who did practice pediatrics, 50% saw only a very small number of pediatric patients. The speculated reason for this is that most pediatric primary care in Japan is still provided mostly by pediatricians, as mentioned above, which may indicate that still many family physicians themselves have not yet attempted to practice pediatric medicine, and society's understanding of pediatric care by family physicians is not advanced, both from the perspective of the medical side and the perspective of the patients who visit them.[18] Of course, there is also the problem of the number of the Japan Primary Care Association certified family physicians, of which there were only about 1000 in Japan, and the increase in the number of general practitioners and their recognition by society will undoubtedly be a key factor in the future.[17]

The content of pediatric care provided by the Japan Primary Care Association certified family physicians, such as the management of acute infectious diseases and chronic diseases, is very important, and the Japan Primary Care Association certified family physicians who actually provided pediatric care have the potential to play an important role in Japanese society to help and cooperate with pediatricians and to cover the transitional medicine. In addition, the Japan Primary Care Association certified family physicians are actively involved in pediatric care in areas that are between two departments and age groups, such as adolescent care between pediatrics and internal medicine, truancy and psychosomatic disorders between pediatrics and psychiatry, and developmental disorders between pediatrics and neurology.[19] These are important not only in terms of approaching diseases, but also in terms of applying professional skills such as family-oriented care, community-oriented care, dealing with complex health problems, collaborative teams, and continuity of care, which are also core competencies of the Japanese Medical Specialty Board certified general practitioners. In addition to these areas, it is also important for these family physicians or general practitioners to play an important role as a hub to ensure cooperation between childcare and adult care for patients supporting in transition between healthcare specialists, which is a problem in modern medicine.[20,21] This gap in the healthcare continuum seems to suggest an important role for general practitioners in the future.

The field of home medical care for children and adult patients with childhood diseases is an area where needs are expected to increase in the future. However, as shown in the results of this study, opportunities for training and learning related to adolescent care, child abuse, transitional care, and pediatric home care were very limited, and although a large percentage of the Japan Primary Care Association certified family physicians wanted to learn about it, there seem to be currently few opportunities to do so.

Furthermore, the evolution of information and communications technology is expected to enhance distance learning content, and the barriers of time and distance with regard to learning opportunities may be eliminated to some extent. Because a large proportion of respondents desired learning opportunities in the fields of adolescent medicine, school absenteeism, psychosomatic disorders, and developmental disorders, general practitioners should increasingly be able to get involved in these fields in particular, and they should become more able to collaborate with related professional societies to build partnerships and cooperative relationships, not only in learning opportunities but also in medical practice.[21–23]

5 | LIMITATIONS

In this survey study, the results, especially the trends for practice and preferences for learning might not accurately reflex the present circumstances of family medicine or general practice in Japan because the absolute number of physicians who provide general practice in Japan is small; only about 30% of the Japan Primary Care Association certified family physicians in Japan responded; and general practitioners who provide medical care in Japan are produced by several academic societies which have different culture currently. In addition, it cannot be denied that the sampling bias that many Japan Primary Care Association certified family physicians who have a high affinity for pediatric practice answered the questionnaire may have an effect. Therefore, it is necessary to conduct further research to understand the situation correctly.

6 | CONCLUSIONS

In this study, we conducted a survey on the current characteristics of pediatric care among the Japan Primary Care Association certified family physicians who are recognized as general practitioners in Japan. The involvement of family physicians or general practitioners in pediatric care in Japan today remains limited, but it might have the benefit that society as a whole will establish an organization that promotes social understanding and cooperation with physicians in various specialties.

ACKNOWLEDGMENTS

The authors would like to thank all family physician specialists of the Japan Primary Care Association for answering our questionnaire. We thank John Daniel from Edanz (https://jp.edanz.com/ac) for editing a draft of this manuscript.

CONFLICT OF INTEREST

The authors have stated explicitly that there are no conflicts of interest in connection with this article.

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How to cite this article: Takamura A, Machino A, Sugiyama Y, Sako A, Kohashi K, Yabe C, et al. for the Japan Primary Care Association, Pediatric and Adolescent Health Committee. The present circumstances of pediatric practice by family physicians in Japan: Cross sectional research. J Gen Fam Med. 2023;24:16–23. https://doi.org/10.1002/jgf2.580

APPENDIX 1

Q1. What is the year you obtained your medical license?
Pre-2001 – Selective for 2016.

Q2-1. Please tell us about any specialty certifications other than family medicine specialist (multiple choice).

a. Specialist in general internal medicine.
b. Home health care specialist.
c. Pediatrician.
d. Specialist other than above (please indicate in Q2-2).
e. None of the above.

Q2-2. If you selected "d. Specialist other than the above" in 2–1, what type of specialty certification do you have (free text box provided)?

Q3. Which facility(s) is/are your primary practice(s)?

a. Clinic with one doctor.
b. Group practice with multiple physicians (no pediatrician on staff).
c. Group practice with multiple physicians (with pediatrician on staff).
d. Hospital (no pediatrician on staff).
e. Hospital (with pediatrician).

Other (free text).

Q4. Did you have pediatric rotations during your initial clinical training?
Yes
No, or no experience in initial clinical training itself.

Q5. How long in total did you train in pediatric practice before becoming a family medicine specialist?

a. Not trained.
b. Less than 3 months.
c. More than 3 months–less than 6 months.
d. More than 6 months–less than 1 year.
e. More than 1 year–less than 3 years.
f. More than 3 years.

Q6. What type of pediatric-related training did you receive (multiple answers allowed)?

a. Block rotation in pediatrics at a tertiary care institution such as a university hospital.
b. Pediatric block rotation at a secondary medical institution such as a community hospital.
c. Training at a clinic that specializes in pediatrics.
d. Training at clinics that do not advocate pediatrics.
e. Training in remote areas such as remote islands.

Other (free description).

Q7. Do you provide pediatric care on a daily basis?
Yes (proceed to Q8).
No (Go to Q9).

Q8. How much pediatric care do you provide in your daily practice? Please indicate the average number of consultations per week.

a. Less than 0–15 patients/week.
b. More than 15–25 persons/week.
c. More than 25–50 persons/week.
d. More than 50–75 persons/week.
e. 75 or more persons/week.

Q9. Please indicate the area(s) in which you "currently practice on a daily basis" (multiple choice).

Q10. Please select any areas of "current daily practice" that you did not have the opportunity to study during your pre-specialty training (multiple choice).

Q11. Please tell us about the area(s) in which you "trained in the past" (multiple choice).

Q12. Please tell us about any areas you "would like to study in the future" (multiple choice).

a. Acute diseases (e.g., upper respiratory tract infection, gastroenteritis, etc.)
b. Chronic diseases (e.g., chronic phase management of asthma).
c. Adolescent response (e.g., sexual counseling such as contraception and menstruation, orthostatic dysregulation, etc.)
d. Counseling for truancy and psychosomatic disorders.
e. Dealing with children of concern (developmental disabilities, child poverty).
f. Children's home health care.
g. Involvement in transition and continuity of adult care (transitions).
h. Child abuse.
i. Pediatric emergency.
j. Immunizations.
k. Infant medical checkups.
l. School and preschool physician.
m. Pediatric education (e.g., teaching pediatric care to residents).
n. Education on multidisciplinary cooperation in pediatric care.
o. Specialties at the pediatric subcommittee level (e.g., secondary and tertiary emergency diseases, congenital heart disease and other cardiovascular diseases, immunotherapy for allergies).
p. Participation in medical association activities and local government committees related to pediatric care.
q. None in particular.

Other (free space provided).

[Question regarding learning opportunities in pediatric practice after obtaining a medical specialty].

Q13. Are you currently learning about the field of pediatrics? (e.g., participation in workshops and seminars of various academic societies, pediatric refresher training, self-study, etc.)
Yes (Go to Q14).
No (Go to Q15).

Q14. What learning opportunities in pediatric care do you currently have (multiple answers allowed)?

a. Journal published by the Japanese Primary Care Association.
b. Journals published by the Japan Pediatric Society, the Japan Society of Ambulatory Pediatrics, etc.
c. Commercially available pediatric medical journals.
d. Secondary sources such as DynaMed, UpToDate, etc.
e. Interaction with local pediatricians (e.g., receiving feedback on practice at case conferences, etc.)
f. Study groups organized by local medical associations.
g. Workshops and lectures held by the Japanese Association for Primary Care.
h. Workshops and lectures held by the Japan Pediatric Society, the Japan Society of Ambulatory Pediatrics, etc.
i. Pediatric retraining.

Other (free answer).

*For those who responded that they are not currently learning about pediatric care.

Q15. What are some of the reasons why you are not learning (multiple responses allowed)?

a. Lack of time due to many work tasks.
b. There is a distance barrier.
c. There is a financial barrier.
d. Lack of human replacement (e.g., no substitute doctor, no one to leave children with, etc.)
e. Not necessary because we do not provide pediatric care.

Other (free text).

[Regarding their desire for future learning opportunities in pediatric care after obtaining a specialist's license].

Q16. Which pediatric learning opportunities would you like the association to provide (multiple responses allowed)?

a. Handle pediatric care in the Journal of the Japanese Primary Care Association.
b. Workshops and lectures on pediatric care at the Japanese Primary Care Association.
c. Joint workshops and lectures on pediatric care with the Japan Pediatric Society and other related organizations.
d. Providing opportunities for retraining in pediatrics.
e. Creating partnerships to receive feedback from local pediatricians (providing opportunities for face-to-face interactions).
f. Nothing in particular.

Other (free text).