Status of Medical Care and Management Requirements of Elderly Patients With Heart Failure in a Comprehensive Community Health System
— Survey of General Practitioners’ Views —

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Background: Given the high prevalence of heart failure (HF) in the elderly, it is essential to establish medical coordination between general practitioners (GPs) and acute care hospitals (ACHs) in an aging society. The aim of this study was to elucidate the status of acceptance of elderly patients with HF and their management requirements in a comprehensive community health system. Furthermore, we investigated GPs’ interest in using information and communications technology (ICT) in patient care.

Methods and Results: We sent a questionnaire survey to 1,800 GPs in January 2015 and received 392 replies. The overall prevalence of home visits was 55%, with no differences according to GP background characteristics or geographic area. However, less than half (44%) reported accepting patients with symptomatic HF for treatment in their clinic. In addition, only 3 GPs reported accepting and providing emergency visits for patients with refractory HF. In particular, GPs who were not certificated cardiologists, female, and older showed poorer acceptance of symptomatic HF patients. More than half the GPs wanted the prompt acceptance by ACHs of emergency patients, followed by strengthening of home care support at discharge and support for end-of-life care. Half the GPs were interested in telemedicine.

Conclusions: ACHs must promptly accept patients with HF in cases of emergency and strengthen nursing care support at discharge. It is also necessary to consider how to support older and female GPs.

Key Words: Chronic heart failure; Comprehensive community care system; Geriatrics
To prevent deterioration in patients with HF, cardiologists and general practitioners (GPs) need to work closely together. Japan’s Ministry of Health, Labour and Welfare promotes cooperation between regional core hospitals and local medical institutions through a comprehensive community care system. In the “5-Year Plan to Stop Cerebro-Cardiovascular Diseases”, the Japanese Circulation Society and the Japanese Stroke Society also proposed the development of a seamless medical and nursing care system. Patients with cardiovascular diseases admitted to a comprehensive or primary cardiovascular center should be cared for based on the disease management manual at the local chronic healthcare facility after rehabilitation in a convalescent hospital. Promoting home care for patients with HF requires understanding of the issues associated with HF treatment in the community and building an effective regional cooperation system. However, there is no report on GPs’ acceptance of patients with HF and the management requirements for the home care of these patients from the viewpoint of GPs in Japan.

In addition, information and communications technology (ICT) in the medical field has evolved dramatically in recent years. It is expected that ICT will be used particularly for sharing patient information between core hospitals and GPs in regional healthcare networks. Thus, in the present study, we conducted a questionnaire survey of GPs in metropolitan areas of Japan to evaluate medical coordination requirements for supporting elderly patients with HF. Furthermore, we asked about the GPs’ interest in using ICT for home-based care.

**Methods**

**Setting**

Surveys were sent to 1,800 GPs who had referred patients with cardiovascular diseases to 4 affiliated teaching hospitals of Nippon Medical School. GPs were defined as physicians who worked in the following facilities: clinics with no inpatient facilities, clinics with inpatient facilities with ≤19 beds, small acute care hospitals (ACHs; ≤200 beds), sub-ACHs, rehabilitation hospitals, and convalescent hospitals. Medium-sized (200–499 beds) and large (>500 beds) ACHs were excluded.

The 4 affiliated teaching hospitals of Nippon Medical School are located in different secondary medical care service areas in metropolitan areas of Japan. A secondary medical care service area is defined as an area established to meet citizens’ general medical needs, excluding specialized clinical care (Article 30-4 of the Medical Care Acts). The Japanese government developed a master plan for medical care based on the National Strategy Plan for Medical Care stipulated in the Medical Care Act established in 1948. The government of each prefecture is required to prepare a healthcare plan according to the law; specifically, each prefecture must develop a healthcare plan in the secondary-tertiary care area.

Nippon Medical School Hospital is located in the Central Care Area of Tokyo. Tama-Nagayama Hospital is in the South Tama Medical Care Area of Tokyo. The South Tama Area, developed as a bedroom (or commuter) suburb of Tokyo in the 1970s, has recently drawn attention...
for its rapid aging rate. Musashi Kosugi Hospital is in the South Kawasaki Medical Care Area, a newly developed town constituted mostly of young adults, in Kawasaki City, Kanagawa Prefecture. Chiba Hokusoh Hospital is located in the Inba Medical Care Area on the north-west side of Chiba Prefecture, where people of different generations live: older residents who are engaged in farming and newer residents who are corporate employees commuting to Tokyo (Figure 1). The population background of these medical areas, based on the Japan Medical Analysis Platform of the Japan Medical Association, is presented in Table 1A.\textsuperscript{8}

**Table 1.** (A) Population Characteristics of Medical Care Areas, (B) Sex and Age of Respondents, and the Type of Healthcare Provider to Which Respondents Belong, According to Medical Care Areas, (C) Specialities and Subspecialities of Respondents

| Medical care area | Central District (Tokyo) | South Tama (Tokyo) | South Kawasaki (Kanagawa) | Inba (Chiba) | National average |
|-------------------|--------------------------|-------------------|---------------------------|--------------|-----------------|
| Population (2015) | 860,669                  | 1,430,411         | 631,797                   | 710,071      |                 |
| Population growth rate 2010–2015 (%) | 13.61 | 0.76 | 4.35 | 0.79 | −0.75 |
| Population aging rate 2015 (%) | 19.40 | 25.00 | 19.40 | 25.20 | 26.60 |
| Population density 2015 (\$/km\(^2\)) | 13,524.00 | 4,405.20 | 9,828.80 | 1,026.60 | 340.80 |

| Number respondents | Central District (Tokyo) | South Tama (Tokyo) | South Kawasaki (Kanagawa) | Inba (Chiba) | Other | Total |
|-------------------|--------------------------|-------------------|---------------------------|--------------|-------|-------|
| Female sex | 22 (14) | 3 (10) | 13 (20) | 2 (3.9) | 0 (0) | 40 (13) |
| Age group (years) | 30s | 11 (6) | 1 (3) | 2 (3) | 3 (4) | 3 (5) | 20 (5) |
| | 40s | 36 (21) | 6 (23) | 25 (40) | 10 (14) | 17 (27) | 90 (23) |
| | 50s | 75 (45) | 12 (40) | 17 (29) | 23 (34) | 30 (48) | 157 (40) |
| | 60s | 42 (23) | 7 (27) | 11 (20) | 28 (36) | 11 (18) | 99 (25) |
| | ≥70 | 5 (4) | 2 (7) | 2 (8) | 9 (12) | 8 (13) | 26 (7) |
| Type of healthcare provider | Clinic | No inpatient facilities | 142 (84) | 24 (83) | 50 (83) | 62 (85) | 43 (69) | 321 (82) |
| | Inpatient facilities with ≤19 beds | 5 (3) | 0 (0) | 2 (3) | 4 (5) | 1 (2) | 13 (3) |
| | Hospital | Acute care; inpatient facilities with ≤200 beds | 16 (9) | 2 (7) | 5 (8) | 3 (4) | 12 (19) | 38 (10) |
| | Subacute care | 3 (2) | 0 (0) | 1 (2) | 4 (5) | 15 (24) | 11 (3) |
| | Rehabilitation | 1 (1) | 1 (4) | 0 (0) | 0 (0) | 1 (2) | 3 (1) |
| | Convalescent care | 2 (1) | 1 (4) | 2 (3) | 0 (0) | 1 (2) | 6 (2) |

| (C) Major speciality | n (%) | Subspeciality | n (%) |
|---------------------|-------|---------------|-------|
| Internal medicine | 170 (43) | Cardiovascular Medicine or Surgery | 88 (22) |
| Surgery | 31 (8) | Gastroenterology | 77 (20) |
| Emergency medicine | 2 (1) | Nephrology, Urology, Dialysis | 26 (7) |
| Rehabilitation | 2 (1) | Neurology, Neurosurgery | 14 (4) |
| Family medicine | 2 (1) | Respiratory Medicine or Surgery | 17 (4) |
| Orthopedics | 3 (1) | Diabetology | 13 (3) |
| Neurosurgery | 8 (2) | Endocrinology | 3 (1) |
| Urology | 9 (2) | Hematology | 2 (1) |
| Gynecology | 3 (1) | Rheumatology | 5 (1) |
| Radiology | 1 (0.3) | Allergy | 5 (1) |
| Anesthesiology | 2 (0.5) | | |
| Pediatrics | 3 (1) | | |
| Geriatrics | 1 (0.3) | | |
| None | 29 (7) | | |
| Not available | 126 (32) | | |

(A) Adapted with permission from reference Takahashi et al.\textsuperscript{8} (B) Data are presented as n (%).
information. For the question concerning barriers to telemedicine implementation for patients with HF, the respondents were asked to choose from the following options: an overly complicated system; widespread use of electronic medical records; no incentives in health insurance; complicated user interface for healthcare workers; personal information protection; complicated user interface for patients; and costs for equipment installation. Similarly, respondents were asked to choose all options that were applicable to their opinion on remote monitoring from the following: patients can receive better care at home through daily monitoring; it is difficult for 1 physician to handle multiple patients; healthcare providers cannot monitor patients all day long; patients can be treated earlier; it is not realistic because so many problems need to be overcome; emergency visits will be reduced; it is useful for efficient medical care; not sure; and being monitored all day is stressful for patients.

This study was approved by the Ethics Committee of Nippon Medical School Musashi Kosugi Hospital (Reference no. 557-2-22).

Statistical Analysis
Data were managed and analyzed using JMP® Version 9 (SAS Institute, Cary, NC, USA). Categorical data are expressed as absolute and relative frequencies, whereas continuous data are expressed as the mean±SD. Chi-squared tests were used in analyses of categorical data. Two-sided P<0.05 was considered significant.

Results
Respondents’ Characteristics
Of the 1,800 GPs sent questionnaires, 392 responded (response rate: 21.7%). Respondents worked in the Central District (47%), South-Kawasaki (15%), South Tama (7%),

| Table 2. Status of Implementation of Home Care Services |
|-----------------------------------------------|
| All respondents | Regular visits only | Emergency visits only | Regular and emergency visits | No home visits |
| **Sex**          |                   |                        |                            |               |
| Male             | 59 (15)           | 45 (12)                | 102 (27)                   | 186 (45)      |
| Female           | 7 (14)            | 9 (18)                 | 8 (16)                     | 27 (53)       |
| **GP age (years)** |                   |                        |                            |               |
| ≥30              | 2 (10)            | 0 (0)                  | 7 (35)                     | 11 (50)       |
| 40 s             | 13 (14)           | 16 (18)                | 13 (14)                    | 48 (53)       |
| 50 s             | 29 (18)           | 13 (8)                 | 51 (32)                    | 64 (41)       |
| 60 s             | 13 (13)           | 13 (13)                | 27 (27)                    | 46 (46)       |
| ≥70              | 2 (8)             | 3 (11)                 | 4 (15)                     | 17 (66)       |
| **Medical care area** |               |                        |                            |               |
| Central Tokyo    | 26 (15)           | 24 (14)                | 50 (30)                    | 69 (41)       |
| South Tama       | 9 (21)            | 2 (4)                  | 12 (32)                    | 35 (39)       |
| South Kawasaki   | 9 (15)            | 4 (7)                  | 9 (20)                     | 11 (58)       |
| Inba             | 6 (8)             | 13 (18)                | 18 (25)                    | 36 (49)       |
| Other            | 26 (15)           | 2 (4)                  | 13 (17)                    | 35 (46)       |

Data are given as n (%). GP, general practitioner.
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(P<0.05; Table 2). Of 207 visiting physicians who were asked about how they handled after-hours emergency patients, 31% reported making around-the-clock home visits, 35% referred patients to emergency hospitals, and 34% responded that their course of action was based on individual cases.

The 188 non-visiting physicians were asked their reasons for not providing home care services: 68% reported a lack of time owing to a busy schedule, 28% claimed a shortage of medical staff, and 16% provided health-related reasons (Figure 2).

HF Stages in Respondent’s Patients Considered Acceptable for Treatment in the Clinic

Among respondents, 35% regarded “asymptomatic HF” (Stages A and B) treatable in the clinic. Thirty-two physicians (8%) reported that they felt it is difficult to care for patients with HF. These GPs were most likely to belong to the main surgical specialities, and their subspecialties were more likely to be non-cardiology related. Fewer female than male GPs responded that they felt able to care for patients with symptomatic HF (Stages C and D; 39% vs. 58%, respectively; P<0.05; Table 3).

There was a significant difference in what was considered an acceptable HF stage for treatment in the clinic according to respondents’ ages (P<0.05). The proportion of GPs who replied that only Stage A patients were acceptable increased with age; 21% of those in their 60s and 35% of those >70 years of age only treated patients in Stage A HF. In contrast, 60% of GPs in their 50s replied that they were able to manage symptomatic HF (Stages C and D). There was also a significant difference with regard to geographic location (P<0.001). In the Inba area, where older and male GPs predominated, a high percentage of GPs (39%) said they were only able to manage asymptomatic HF, whereas only 32% of physicians in the Central Tokyo area gave this response.

Among all respondents, only 3% of GPs accepted patients with refractory (intractable or end-stage) HF (Stage D). In addition, only 3 of 392 GPs accepted patients with refractory HF and provided home visits.

Implementation of Home-Based Medical Care

In all, 202 (52%) physicians provided home visit services. Fifty-nine (15%) respondents only made regular visits, 102 (26%) made both routine and emergency visits, and 45 (11%) only made emergency visits. By region, the rate of implementation of in-home medical care was high in South Tama and Central Tokyo, whereas the rates were low in the Inba and South Kawasaki areas. In the age group analysis, those in their 50s provided the most home visits, followed by those in their 60s and 40s. Implementation rates were lowest among those aged over >70 years or in their 30s (P<0.05; Table 2). Of 207 visiting physicians who were asked about how they handled after-hours emergency patients, 31% reported making around-the-clock home visits, 35% referred patients to emergency hospitals, and 34% responded that their course of action was based on individual cases.

The 188 non-visiting physicians were asked their reasons for not providing home care services: 68% reported a lack of time owing to a busy schedule, 28% claimed a shortage of medical staff, and 16% provided health-related reasons (Figure 2).

Figure 2. Reasons specified by respondents for not providing home care services.
Table 3. Acceptance of Patients With Heart Failure for Treatment in the Clinic According to Stage

| Heart failureA | Stage A | Stage B | Stage C | Stage D | Too difficult to provide care to patients | NA |
|---------------|---------|---------|---------|---------|------------------------------------------|----|
| All respondents | 51 (13) | 86 (23) | 207 (53) | 11 (3) | 32 (8) | 5 (2) |
| Sex | | | | | | |
| Male | 46 (13) | 66 (19) | 189 (55) | 9 (3) | 29 (9) | 4 (1) |
| Female | 5 (12) | 20 (39) | 18 (35) | 2 (4) | 3 (6) | 1 (2) |
| P value | <0.05 |
| GP age (years) | | | | | | |
| ≥30 | 1 (3) | 6 (30) | 12 (60) | 1 (5) | 0 (0) | 0 (0) |
| 40 | 6 (7) | 23 (25) | 48 (53) | 5 (6) | 8 (9) | 0 (0) |
| 50 | 14 (9) | 35 (22) | 91 (58) | 3 (2) | 10 (6) | 4 (3) |
| 60 | 21 (21) | 21 (21) | 44 (44) | 2 (2) | 10 (10) | 1 (1) |
| ≥70 | 9 (35) | 1 (4) | 12 (46) | 0 (0) | 4 (15) | 0 (0) |
| P value | <0.05 |
| Medical care area (%) | | | | | | |
| Central Tokyo | 11 (7) | 43 (25) | 104 (62) | 3 (2) | 7 (4) | 1 (0) |
| South Tama | 3 (11) | 7 (25) | 14 (50) | 0 (0) | 3 (11) | 1 (4) |
| South Kawasaki | 9 (15) | 15 (25) | 26 (43) | 3 (5) | 5 (8) | 2 (3) |
| Inba | 19 (26) | 10 (13) | 34 (47) | 2 (3) | 7 (10) | 1 (1) |
| Other | 9 (15) | 11 (18) | 29 (47) | 3 (5) | 10 (16) | 0 (0) |
| P value | <0.005 |
| Home care services | | | | | | |
| Regular visits only | 6 (10) | 14 (23) | 31 (53) | 1 (2) | 7 (12) | 0 (0) |
| Emergency visits only | 12 (27) | 10 (22) | 21 (47) | 0 (0) | 2 (4) | 0 (0) |
| Regular and emergency visits | 5 (5) | 23 (23) | 70 (67) | 2 (2) | 1 (1) | 1 (1) |
| No home visits | 28 (15) | 39 (21) | 85 (46) | 8 (4) | 22 (12) | 4 (2) |
| P value | <0.005 |

Unless indicated otherwise, data are given as n (%). AHeart failure was graded according to the 2013 American College of Cardiology Foundation (ACCF)/American Heart Association (AHA) guidelines for the management of heart failure. BStages A and B were considered asymptomatic, whereas and Stages C and D were considered symptomatic. GP, general practitioner.

Figure 3. Regional medical care collaboration requirements for elderly patients with heart failure. ACH, acute care hospital; ER, emergency room; GPs, general practitioners.
Requirements for Regional Medical Care Collaboration for Elderly Patients With HF

Regarding regional medical cooperation for patients with HF, approximately half the respondents noted the need for a prompt response from ER systems (51%), followed by strengthening of home care support at hospital discharge (40%), support for end-of-life care (25%), patient education in the outpatient setting (23%), outpatient cardiopulmonary rehabilitation (22%), a regional clinical path (21%), and face-to-face meetings between GPs and cardiovascular staff to share patient information (20%; Figure 3).

GPs’ Interest in Applying ICT to Home-Based Care

Among the respondents, 48% expressed interest in implementing telemedicine for patients with HF; 43% were unsure, and 9% reported not being interested (Supplementary Table). For more than one-third of physicians, the barriers to implementing telemedicine included the cost of equipment installation (62%), a complicated user interface for patients (43%), protection of personal information (35%), and a complicated user interface for healthcare workers (33%; Table 4). Furthermore, with respect to a remote patient monitoring system, although the respondents stated that patients could be relieved by being watched over every day, they also expressed negative opinions, such as “It is difficult for a single physician to handle multiple patients” (35%) and “Healthcare providers cannot monitor patients all day long” (35%; Table 5).

Discussion

The present survey is the first to clarify the current status of GPs’ acceptance of patients with HF and to identify the requirements for regional care coordination for this population. Seamless regional partnerships among healthcare providers should be promoted to enable elderly patients with HF to maintain a high quality of life. Furthermore, readmission shortly after discharge should be avoided in the context of medical efficiency. However, in this survey, only 44% of GPs reported accepting patients with symptomatic HF (Stage C and/or D). In addition, only 3 medical institutes accepted patients with refractory HF and provided emergency visits. In the analyses of GPs’ background characteristics, female and older physicians showed poorer acceptance of symptomatic HF patients. Consequently, in areas where female and older physicians were prevalent, GPs’ acceptance of symptomatic HF was poorer. Further, GPs who did not specialize in internal medicine or cardiology were less likely to provide care for patients with HF.

How to Promote Medical Care Collaboration for Elderly Patients With HF

In our survey, GPs who were non-cardiologists, female, and older showed poorer acceptance of symptomatic HF patients. We did not ask for detailed reasons as to why they could not accept patients with HF. In general, it is assumed that this is largely due to differences in health status associated with age and sex. However, these results did not reflect the results regarding differences in the characteristics of age and sex. Educational opportunities may also be needed to support physicians in different specialties (e.g., surgery). According to a survey by the Ministry of Health, Labour and Welfare, the mean age of physicians working in clinics is 60 years. Similarly, the percentage of female physicians is 21.9%, with the proportion higher for the younger generation. The ratio of older people and women among all physicians is expected to increase in the future, hence the imperative to conduct further research and consider specific support measures.

As indicated by the GPs, the most important requirements for successful regional medical care collaboration were prompt responses from ER systems and strengthening of home care support at hospital discharge. Without enough emergency backup, it is hard to feel confident about accepting patients with symptomatic HF for treatment, although adequate emergency admissions do not lead to a reduction in readmissions.

Various methods have been implemented to prevent rehospitalization in elderly patients with HF. Most recently, a transitional care program designed to facilitate safe, smooth, and efficient transitions between settings achieved remarkable outcomes. Transition care programs mainly focus on the change from hospital to home and include discharge planning, predischarge patient health education, and post-discharge telephone calls or home visits. Large-scale clinical trials have shown that this type of intervention is effective in preventing readmissions and reducing medical costs. Guidelines in other countries have strongly recommended transition care. According to the European Society of Cardiology/AHA guidelines, a multidisciplinary...
team approach and effectiveness of care coordination are important in preventing the readmission or mortality of patients with HF after hospital discharge. In Canada, there is a strong culture of community collaboration for HF care, with specialized HF clinics (HFCs) providing patient-centered care. Canadian HFCs provide the following services to support transitions in HF care: optimization of HF medical therapies before implantable cardioverter defibrillator and cardiac resynchronization therapy (ICD/CRT) referral, medication support and counseling, medication reconciliation, dietary nutrition counseling, involving patients in shared clinical decision making, advanced care and life planning, self-management services and resources, education sessions, exercise training, and support and cardiac rehabilitation. However, for a multidisciplinary team approach to be implemented, human resources must be adequate. In Japan, HFCs are not generalized, and most affiliated clinics are run by a single non-cardiologist. It is not a cost-effective measure to establish a large number of new HFCs. Thus, it is important to incorporate adequate HF care in the existing medical system. To achieve a comprehensive community health system, regional core hospitals should provide transition care interventions for patients with HF not only before, but also after discharge to support affiliated clinics. According to a recent report, the prevalence of multidisciplinary HF care teams in outpatient settings is still low (32.6%), even in medical institutions that are members of the Japanese Heart Failure Society. The Japanese Circulation Society aims to establish an accreditation board (the Certified Heart Failure Educator of Japan) in 2021. In an effective comprehensive community health system, it is important for certified professionals to promote HF care.

Furthermore, to ensure effective treatment in daily clinical practice by educating GPs whose specialty is not cardiology, the Japanese Heart Failure Society published Guidelines for Diagnosis and Treatment of Acute and Chronic Heart Failure Guidance for Family Physicians in 2019. In addition, the Japanese Heart Failure Society has published the Heart Failure Notebook for patients and their families to manage and understand their illness; this notebook is also a useful treatment support tool for GPs. Patients can use the notebook to maintain daily records of their body weight, blood pressure, heart rate, and drug adherence. Based on this information, GPs can be up to date on patients' management status at home.

In some areas, the “regional cooperation critical path” has been developed to promote coordination in GPs’ medical practice for patients with HF. The regional cooperation critical path not only shares information on a patient’s illness and background, but also provides medical instructions based on evidence-based treatment guidelines. The operation of the critical path is expected to promote communication between ACHs and medical staff in the community. Recently, Kitagawa et al reported that institutional approaches for patients with HF with elevated serum N-terminal pro B-type natriuretic peptide (NT-proBNP) may reduce the frequency, period, and medical cost for all-cause hospitalizations. However, too many patients have dropped out because of variances in the clinical path. Furthermore, it requires substantial effort and cost, beyond just medical care, to maintain coordination. Therefore, the clinical pathway is not yet widely implemented. The application of machine- and deep-learning methods is expected to facilitate personalized management of patients with HF in the future.

Applying ICT to Home-Based Care for Patients With HF
The sharing of patient information between GPs and regional core hospitals is essential to the operation of a comprehensive regional healthcare system. Recently, ICT has been developed and used as an essential infrastructural element for sharing patient information and monitoring patients in some areas. In the present survey, 48% of GPs were interested in managing patients using ICT. This proportion is lower than that reported in a recent study. ICT infrastructure has evolved dramatically, and telemedicine has been added to Japan’s public health insurance coverage. It is assumed that GPs will be more interested in telemedicine today than in 2014–2015. In particular, the 2020 COVID-19 virus pandemic has forced GPs to engage in telemedicine.

Despite its promise, the effectiveness of telemonitoring for chronic HF is inconclusive. Recent large-scale clinical studies conducted in US could not prove the effectiveness of monitoring. This is thought to be due largely to low adherence to monitoring. A similar telemonitoring study was also performed in Japan, in that study, adherence to monitoring was favorable, owing to the interventions of home healthcare nurses. Unfortunately, there was no significant difference in the readmission rate compared with the usual care group. The main reason for this was presumably the sample’s restriction to young, mildly symptomatic patients. Another recent study that applied monitoring to transition care did not produce great results compared with usual care. In the future, it will be necessary to carefully consider the purpose, timing, and target population when applying telemonitoring to HF care.

Study Limitations
In this survey, the response rate was only 22%. Although this is comparable to previous studies of other care approaches for HF, the results may be biased toward those interested in managing HF. This analysis is based on the results of only 4 medical areas in the Tokyo metropolitan area and does not reflect the medical system of the entire metropolitan area. Medical functions of regional core hospitals and related medical institutions are often clearly separated in rural areas. Therefore, it is expected that healthcare partnerships in rural areas would be different from those in metropolitan areas. Thus, the findings of the present study should be interpreted with caution.

Conclusions
In the Tokyo metropolitan area, which is experiencing a rapid rate of aging, it is necessary to accept patients with HF in emergency situations and to strengthen nursing care support upon discharge. GPs who were non-cardiologists, female, and older showed a poorer acceptance of symptomatic HF patients for treatment. Therefore, support for women and older physicians is also needed, and this need is expected to increase in the future. Educational outreach to non-specialists will also be needed. This study is the first to examine the status of elderly patients with HF and the requirements for their care in a comprehensive community health system. The Stroke and Cardiovascular Disease Control Act was enacted in Japan in December 2018. One of the basic principles of this law is to ensure that acute medical care is promptly started by appropriate emergency medical response.
transport and consultation anywhere in the country and continued seamlessly through the supportive care period. To establish seamless medical cooperation for elderly patients with HF, a nationwide survey of HF care should be conducted in the near future.

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IRB Information
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Supplementary Files
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