

"Sharing Best Practices in CVD Control from Local Communities for National Health Equity" First Advisory Board Meeting

Theme 1: Regional best practices and current issues for implementing the Basic Plan to Promote Cardiovascular Disease Control Programs

■ Current issues and discussion points

Improving provision systems for healthcare and welfare services

Promoting awareness toward prevention

Promoting CVD research

Effectively using clinical and health information related to CVDs

Establishing opportunities for discussions and information exchange among stakeholders

■ Best practices

Measures for heart failure in Kochi prefecture

The Tokyo Coronary Care Unit (CCU) Network special emergency service

The Kagawa Medical Internet eXchange (K-MIX)

Atrial fibrillation screening initiatives

Yokohama City's Enhanced Cardiac Rehabilitation Hospitals

Ajisai Net, Nagasaki Prefecture's healthcare collaboration network system

Pediatric preventive checkups for lifestyle-related diseases in Kagawa Prefecture

Collaboration among hospitals and cardiologists in Hyogo Prefecture

Initiatives from academic societies

Initiatives at the Japan Heart Foundation

Initiatives from industry

Theme 2: Points that should be included in an HGPI policy proposal, be emphasized when communicating, and be included in requests to the national Government and prefectural governments

CVD control measures on the prefectural and local levels

Prevention and awareness raising for CVDs

The provision of patient support services

The healthcare provision system

The effective use of clinical and health information related to CVDs

CVD research

Meeting Overview

(Speaker titles omitted below)

Theme 1: Regional best practices and current issues for implementing the Basic Plan to Promote

Cardiovascular Disease Control Programs

■ Current issues and discussion points

Improving provision systems for healthcare and welfare services

> The need to correct regional disparities in the healthcare provision system

• Data on cardiologists per capita by prefecture (from the Survey of Physicians, Dentists and Pharmacists 2014,

Statistics and Information Department, Ministry of Health, Labour and Welfare (MHLW)) clearly indicates that there

are many cardiologists in eastern Japan and few in western Japan. Furthermore, according to June 2017 MHLW data

for "Age-Adjusted Death Rates by Prefecture," mortality rates for cardiac diseases are relatively high in Hokkaido

and in eastern Japan. Regional disparities like these are one issue for CVD control. Measures are needed to correct

disparities in hospitals and healthcare services.

• There is not only disparity between the eastern and western regions of Japan; certain prefectures have significant

regional disparities in healthcare services. For myocardial infarction, it has been shown that higher percutaneous

coronary intervention (PCI) rates result in better prognoses. However, physicians who can perform PCIs are unevenly

distributed, so physicians should be trained and steps should be taken to establish one facility for performing PCIs

in each secondary care area.

The need for a medical care system that seamlessly links acute, recovery, and chronic care

• Almost everyone will experience a CVD at some point in life, so cooperation is important throughout all phases,

from prevention (including primary, secondary, and tertiary prevention); to the acute, recovery, and chronic phases;

and to the phase in which recurrence, complications, and exacerbations must be prevented.

• The Five-Year Plan for Conquering Stroke and CVDs from the Japan Stroke Society, the Japanese Circulation Society,

and related societies proposes a division of roles for CVDs among healthcare institutions, such as by designating

certain facilities as base hospitals for aortic emergencies. When doing so, it will be important to build a system for

seamless collaboration with hospitals providing care during and after the recovery phases while consulting with

administrative bodies and hospitals.

• Among CVDs, heart failure has the greatest number of patients and mortalities. A medical system that provides a

continuous response for the acute, recovery, and chronic phases of heart failure must be established. A similar

system is also needed for aortic dissection.

• It will be easier to promote functional differentiation through cooperative networks in regions with few healthcare

institutions and specialists or where such efforts can be centered around single hospitals. It can be more difficult to

achieve collaboration and functional differentiation in urban areas with multiple core hospitals.

Utilizing digital technology

· Another major discussion point is the degree to which innovations in Information and Communications

Technology (ICT), IoT, and AI can be utilized. To achieve health equity, it will be necessary to take a detailed look at

how to use online healthcare in regions with physician shortages or where it is difficult for people to access

healthcare.

• The use of doctor-to-doctor online consultation systems that allow physicians to connect with each other (for

example, that connect non-specialists in remote islands with specialists) may be a source of support when providing

seamless community medicine.

· For heart failure, it is important to track symptom progression in patients and detect signs of exacerbation using

ICTs like electronic Patient-Reported Outcomes (ePRO), IoT, and online medical consultations.

The need for early diagnoses and timely medical interventions

· Early diagnoses and timely medical interventions are important for CVDs. For example, heart disease can be

detected early in people age 60 and over if physicians check for heart murmurs by stethoscope during regular

checkups. Steps must be taken to promote timely medical interventions.

The need for patient consultation services and employment and schooling support for people with

disabilities

• It is desirable that urgent measures are taken to establish patient consultation services and employment and

schooling support for people with disabilities, including transitional care. Many people with congenital heart disease

are socially vulnerable and are being left behind.

Promoting awareness toward prevention

The need for policy intervention in CVD prevention

· While prevention is effective for heart failure and other CVDs, compared to cancer, there are not many people

who understand CVDs correctly.

• Each organization is making efforts for the three areas of focus of the Basic Act: raising awareness toward CVD

prevention, improving patient support systems, and promoting research on CVDs. However, there is a limit as to

what can be accomplished when operating on donations. Expanding preventive and educational activities for CVDs

on a broad scale will require Government support.

· A consortium on CVD prevention that involves industry, Government, academia, and civil society was established

and is about to kick off an initiative to reduce salt content in processed foods.

Promoting CVD research

The need to promote CVD research

• Progress in cancer research and the development of molecularly targeted therapies and immune checkpoint

inhibitors mean that remission is now possible. However, similar progress has not been made in CVD research, so

current treatment options are mostly limited to symptomatic treatments. If we are to understand the underlying

mechanisms of heart failure and develop cures, research must progress. Many prefectural promotion plans do not

include "Promote CVD research."

Effectively using clinical and health information related to CVDs

The need to advance policies for the effective use of data

· It has been suggested that three important activities to direct the further development of cardiovascular medicine

in each region will be (1) building a system for gathering data over time, including data from patients; (2) conducting

short-term and mid- to long-term outcome assessments based on data; and (3) achieving health equity by

introducing clinical pathways that utilize regional information networks. To advance these three activities, policies

will be needed that promote the use of ICT, real world data (RWD), and real world evidence (RWE) among industry,

Government, academia, and civil society in cardiovascular treatment and research.

The need to grasp clinical conditions and analyze health outcomes data

· Many people with good laboratory values die suddenly from heart-related causes. Rather than relying on

laboratory values and images for CVDs, datasets with hard endpoints such as survival rates and serious adverse

events must be constructed. Then, analyses based on those datasets must be conducted and discussions on the

effectiveness of measures must be held.

• If time series datasets with clear outcomes are created, they can be reflected in regional healthcare provision

systems and in the differentiation of healthcare institutions by function. This must be linked to efforts to rebuild

Regional Healthcare Visions from the ground up.

• The Japanese Registry of All cardiac and vascular Disease (J-ROAD) study conducted by the Japanese Circulation

Society found variation among hospitals in prescription rates for medications recommended in myocardial infarction

treatment guidelines. Differences in practices like these have an impact on outcomes like death during

hospitalization and survival at one year.

• Although about 500 facilities nationwide are performing arrhythmia ablation therapy, detailed data was

unavailable. To address this, the Japanese Heart Rhythm Society is currently compiling results from the Japan

Ablation Registry (J-AB).

The need to support data entry in healthcare settings and to build a framework for gathering data

· While expectations are high for the Government initiative to build a registry of medical information for CVDs,

unless a data entry support system is built in parallel, building that registry will place a heavy burden on those in

healthcare settings.

· A Japan Agency for Medical Research and Development (AMED) project is building a platform for research data

that is approved for secondary usage by incorporating the Japan Society of Ultrasonics in Medicine image database

into a database accessible to certified companies. This platform will establish a framework for collecting data

through IoT wherever possible. Based on examples like this, it may be necessary to design a framework that

automatically calculates reimbursements through the medical service fee schedule and gathers data for remote

cardiovascular rehabilitation and follow-up monitoring. Adding this information to the second floor of the NDB will

make it possible to conduct analyses using objective data.

• The National Database of Health Insurance Claims and Specific Health Checkups of Japan (NDB) will soon be

updated, the medical claims database will be moved to the cloud, and a foundation for the analysis of Health

Insurance Claims (HIC) data including healthcare data and long-term care data will be introduced. As discussions

advance on the Next-Generation Medical Infrastructure Act and the review of the Cancer Registration Promotion

Act, systems that will decrease burdens placed on those in healthcare settings should be considered while referring

to innovative examples. This might include a two-story structure. The entire system needs to be renovated, not just

portions related to cardiovascular organs.

• The complexity of data entry has hindered progress on registry and data utilization in the field of CVDs. Starting

with the training of more medical information managers, measures to address this issue may be required.

> The need to standardize data

• For patients' medical and health information to be utilized effectively, data in both Personal Health Records (PHRs)

and Electronic Health Records (EHRs) must be standardized. No matter how much medical examination data is

gathered, it cannot be used as evidence if it is not standardized, so using a standardized format will be important.

· Medical claims data has already been standardized, so rather than structure, focus should be placed on

standardizing the data itself through mandatory third-party performance assessments or similar measures.

> The need to adopt anonymized processing methods

• For sensitive personal medical and health information, utilizing anonymized processing methods based on the

Next-Generation Medical Infrastructure Act will be important. Anonymously processing CVD-related data held by

local governments and healthcare institutions and analyzing it as big data using AI or other tools will open the door

for measures that are beneficial on both the regional and national levels.

> The need to reach a consensus on the handling of health information

• Discussions must be held on whether information obtained from wearable devices should be defined as a form

of data for clinical use or as reference information for healthcare providers. Said discussions should also cover the

position of health insurance listings related to that information.

Establishing opportunities for discussions and information exchange among stakeholders

> The need for forums to discuss and share issues, best practices, and similar topics

· Although Japan has abundant databases and highly-skilled specialists, basic information for achieving health

equity is insufficient. The cause of this may be a lack of opportunities for discussion and information exchange.

· CVDs are associated with many diseases like diabetes, dyslipidemia, CKD, and periodontal disease. Furthermore,

there are many specialists involved, such as those in fields like exercise or diet, so consolidating the opinions of

specialists on prevention is difficult.

• To standardize data and reduce the burden of data entry, opportunities must be created for the people at the

companies responsible for performing those operations to share best practices and mistakes in a timely manner.

Including such opportunities during discussions held on a level playing field will accelerate health equity through

the sharing of best practices.

• The division of roles between medical specialists and family doctors is a major issue. It is important to establish

forums in each region for discussions involving related parties like professionals in healthcare and prevention,

government representatives, and community members. However, people are busy with other meetings such as

those at Regional Medical Countermeasures Councils, limiting the human resources available to participate in said

meetings. As such, these meetings tend to become mere formalities.

■ Best practices

Best practices from local and regional governments

Measures for heart failure in Kochi prefecture

• Standardized Mortality Ratios (SMR) for heart failure are particularly high for men in Kochi and Ehime prefectures.

The Kochi Acute Uncompensated Heart Failure Register Study (or Kochi YOSACOI study) found that heart failure

rehospitalization rates were more than four times higher among people deemed socially frail, such as those who

eat or live alone.

• Efforts based on the 7th Kochi Prefectural Health Care Plan involving physicians operating private practices and

long-term care professionals across disciplines began in 2020. While progress is currently stopped due to the COVID-

19 pandemic, specific efforts being made include (1) forming a Collaborative Association for Heart Failure; (2)

promoting team management in heart failure treatment and establishing heart failure centers at every hospital that

is a member of the Collaborative Association for Heart Failure; (3) improving skills and promoting cooperation

among medical and long-term care staff; and (4) promoting understanding among community members in the prefecture (through public lectures meant to raise awareness, the creation of the "Kochi Heart Failure Handbook,"

and similar measures).

The Tokyo Coronary Care Unit (CCU) Network special emergency service

· One good example of a system for acute myocardial infarction (AMI) is the Tokyo Coronary Care Unit (CCU)

Network. Although Tokyo has a system in place for the acute stage of AMI, establishing systems for team treatment

or other such systems for the chronic and recovery stages has proven to be difficult. Conversely, it is easier to

establish systems in regions where there is one medical university per prefecture. Given the situation for AMI, good

examples will look different depending on the disease. It may be time for cities to learn and adopt best practices

from remote islands and rural areas.

The Kagawa Medical Internet eXchange (K-MIX)

Starting in around 2003, Kagawa Prefecture has been using a system called the Kagawa Medical Internet eXchange

(K-MIX). The functions of K-MIX are updated every five years, and the versions currently being used are called K-MIX

R and K-MIX R BASIC. These systems allow users to view medical claims information, even if stored in computers at

private practices. Other recent efforts include projects for the use of drones, remote medical consultations, and

online medication guidance. Information gathered at annual health checkups is also being linked with information

held by healthcare institutions.

· K-MIX has been updated to make it possible for core healthcare institutions to view each other's electronic

medical records. It allows for two-way information sharing, including for pharmacies. Using K-MIX R BASIC, users

can check medical claims data, such as the medication information held by a clinic, by scanning a patient's My

Number card or a physician's certification. Currently, the system is in operation at around 280 facilities.

· Advancing an initiative to develop collaborative regional clinical pathways for stroke centered more around

paramedics than physicians has led to progress on collaboration. Data is currently being gathered over K-MIX to

verify the effectiveness of rehabilitation in the acute phase. In the future, Kagawa Prefecture will expand these

initiatives to include CVDs and is considering the formulation of a plan that incorporates them.

Atrial fibrillation screening initiatives

• Mobile fetal monitors drew nationwide interest during the COVID-19 pandemic and were introduced at perinatal

centers throughout Chiba Prefecture. A standard format for providing online medical examinations to pregnant

women has been created and is now being implemented in every region in Bhutan.

• In CVDs, an initiative for atrial fibrillation screening is currently underway. Based on pulse pressure waveform

analysis, finger plethysmography, and pulse oximetry, fetal monitoring technology can be used to detect atrial

fibrillation with a 100% diagnostic rate. In the future, monitors may be installed at places like pharmacies and

healthcare institutions to disseminate atrial fibrillation screening. Combining biological information and regional

medical networks can enable region-wide efforts for preventive healthcare.

Yokohama City's Enhanced Cardiac Rehabilitation Hospitals

• Yokohama City has designated seven hospitals as "enhanced cardiac rehabilitation hospitals" and is working to

build networks for regional cooperation and to develop human resources. Their network currently includes about

100 local gyms and sports centers. After receiving a prescription for exercise from an enhanced cardiac rehabilitation

hospital, patients can undergo rehabilitation at the facility with the easiest commute.

> Ajisai Net, Nagasaki Prefecture's healthcare collaboration network system

· A project to create regional collaborative clinical pathways and enable outcome monitoring by linking Ajisai Net,

the largest regional healthcare network in Japan, to disease management tools such as ePRO and online medical

consultations is now being considered.

· Ajisai Net began operations over ten years ago and has reaffirmed the importance of cooperation across

professions. What can be achieved through collaboration across hospitals, clinics, and various professions is

currently being looked into.

· Providing chronic care in each region will require supporting non-specialists and specialists across disciplines while

they share information. It is particularly desirable that future efforts are devoted to creating collaborative regional

clinical pathways for heart failure.

Pediatric preventive checkups for lifestyle-related diseases in Kagawa Prefecture

• In Kagawa Prefecture, preventive checkups for lifestyle-related diseases are being provided to children in an

initiative for early detection of familial hypercholesterolemia (FH). Fourth-year elementary school students are given

blood tests and lifestyle surveys. Last year, 7,600 children or 92% of Kagawa Prefecture's fourth graders were

examined. Schools are providing health education in advance, then after the examinations, the children also receive

health guidance and references for medical checkups.

• Not only does early detection of FH among children facilitate treatment, it also helps undiagnosed parents prevent

the onset of symptoms. Centered on Kagawa University, this initiative involves schools, family doctors, universities

and other specialized healthcare institutions, and the Government, and was adopted as an AMED research project

last fiscal year.

Collaboration among hospitals and cardiologists in Hyogo Prefecture

• Best practices are starting to appear from Akita Prefecture, Tottori Prefecture, and Hyogo Prefecture. In Hyogo

Prefecture, children's hospitals have collaborated with cardiologists to establish a medical examination system for

pediatric CVDs.

Best practices from stakeholders

Initiatives from academic societies

· The Japanese Circulation Society launched a heart failure wellness instructor certification system in 2021 and is

making efforts to improve care for people who experience heart failure.

• The Five-Year Plan for Conquering Stroke and CVDs (from the Japan Stroke Society, the Japanese Circulation

Society, and other related societies) describes five strategies for overcoming three target diseases: heart failure,

vascular disease, and stroke. The five strategies are (1) develop human resources; (2) improve healthcare systems;

(3) promote registration initiatives; (4) prevention/raising public awareness; and (5) reinforce clinical and basic

research. They are now ready to make progress in line with both the Basic Act and the Basic Plan.

Initiatives from the Japan Heart Foundation

• The Japan Heart Foundation has been working to disseminate automated external defibrillators (AEDs) to prevent

sudden cardiac deaths (SCDs), which are estimated to occur 80,000 times annually. They have also been providing

research grants since 1975 to advance CVD research and have been contributing to human resource development

by providing study abroad support and through other efforts.

· Since 1998, the Japan Heart Foundation has served as a patient support system for CVDs by publicizing accurate

information on CVDs from specialists and by providing free medical consultations and second opinions online. Their

website is accessed nearly 30,000 times per day.

Initiatives from industry

• From the perspective of prevention, a convenience store chain is quietly reducing the salt content of their

offerings. In most cases, this is not losing support from consumers, even when the salt is reduced without notice.

This method can also be applied when reducing calories and fat content.

Theme 2: Points that should be included in an HGPI policy proposal, be emphasized when

communicating, and be included in requests to the national Government and prefectural

governments

CVD control measures on the prefectural and local levels

The need for budget measures to promote CVD control

• Although the Basic Plan to Promote CVD Control Programs has been formulated, prefectural and local

governments have been unable to submit budget requests to the national Government, so budgets have yet to be

created. Projects and policy recommendations that promote bottom-up budgeting from prefectural and local

governments are needed.

> The need to consider consistency between the Medical Care Plan and the Basic Plan to Promote CVD Control

Programs

· Of the five diseases targeted in the Medical Care Plan, three are CVDs: cerebral infarction, myocardial infarction,

and diabetes. Prefectures are obligated to formulate regional plans for CVD control by the national Government's

Basic Plan to Promote CVD Control Programs. Steps must be taken to ensure these plans remain consistent with the

Medical Care Plan and the Basic Plan to Promote CVD Control Programs.

Prevention and awareness raising for CVDs

The need for multidisciplinary approaches to prevention

· Intervention studies have shown that improved housing insulation provided by home builders can reduce early

morning blood pressure elevation. This demonstrates that approaches which are not based in cardiovascular science

or are not directly related to cardiovascular medicine or research can also contribute to CVD control. There may be

potential in environment-based approaches from the private sector from companies other than pharmaceutical

companies.

The need to raise awareness during school education

· Recommendations to include education on CVD prevention in school curriculum guidelines should be issued.

Education on cancer was included in school curriculum guidelines in 2017. CVD prevention is significant.

The provision of patient support services

> The need for patient consultation services and employment and schooling support for people with

disabilities

• Establishing patient consultation services and employment and schooling support for people with disabilities

including transitional care should be treated as urgent issues. Many people with congenital heart disease are socially

vulnerable and are being left behind.

The healthcare provision system

The need for ICT utilization

• It is important that medication adherence is improved, especially for heart failure. Moving forward, medication

monitoring using ICT will become a major theme.

• Effective uses for ICT have also been found in emergency transport. In Tsushima, Nagasaki Prefecture, where it

can take up to one hour to transport a patient, 12-lead electrocardiograms and other data are sent to receiving

hospitals in advance. This allows them to get prepared before the patient arrives. While awareness is growing

toward the usefulness of ICT in prehospital treatment, dissemination is proving to be difficult due to budget

constraints, issues related to training emergency teams, and other challenges. The proposal should include

recommendations on the use of ICT in prehospital treatment to improve the emergency transport system.

> Reviewing the emergency transport system and allocating patients among receiving hospitals by disease

• The disease profile of Japan has shifted greatly and the transportation system has undergone dramatic changes,

such as with helicopters and highways, so the existing emergency transport system using primary, secondary, and

tertiary emergency hospitals needs to be reviewed.

· Aortic dissections require emergency surgery and myocardial infarctions require PCIs. Heart failure does not

require procedures as advanced as these diseases, but patient numbers are far greater. Indiscriminately transporting

people with these diseases to emergency rooms can create situations in which crucial surgeries cannot be

performed. To prevent these situations from occurring, proper patient allocation practices must be implemented.

• If the emergency transport system is not improved and practices to properly allocate patients by disease are not

adopted, it will be impossible to keep up with the needs of the changing times.

The need to reinforce family doctor functions

• In their communities, family doctors are responsible for prevention, post-acute care, and long-term care, so

reinforcing their functions will be important.

The effective use of clinical and health information related to CVDs

The need to gather outcome data from clinics

· While outcome data from hospitals is beginning to become visible, there is little outcome data from clinics. The

Japan Medical Association is currently starting an initiative for gathering outcome data on diabetes and

hypertension from certain clinics and is providing feedback on the results. Another important perspective will be

how to collect outcome data from clinics.

The need to support people using data in clinical settings and to engage in data collaboration that is not

limited to healthcare

While in-home usage of ICT can improve medication adherence and create frameworks for continuous healthcare

provision, it places healthcare providers at risk of being flooded with data. For example, physicians at clinics involved

in a remote monitoring project for sleep apnea saw their work hours grow significantly. We are reaching a point at

which healthcare can no longer be provided by healthcare professionals alone. Borderless healthcare can now be

provided using ICT, so the shackles of the traditional medical framework should be removed. This message must be

stated in clear terms.

• Achieving in-home heart failure management will be difficult if elderly patients are not provided with the support

they need to use ICT correctly and if family doctors are not provided with support for data entry and monitoring.

· The data gathering platform should not be limited to healthcare in a similar manner to healthcare IDs (which will

serve as personal identifiers in healthcare and related fields). It should be linkable to other data, as well.



The need to promote data collaboration

• As progress is made on EHRs, PHRs, and remote consultations, work should also begin on data collaboration and data sharing, which will be necessary for making final judgements.

CVD research

The need to promote CVD research

- Public funding for CVD research is very low because it is included among intractable diseases. The proposal should also emphasize the importance of research.
- The proposal should recommend that public funding is provided to advance register studies on CVDs. Unlike cancer, an extremely large number of people live with CVDs, and their treatment is dispersed widely among various types of hospitals. Cardiologists are already handling treatments for AMI and acute heart failure, but they must also handle registration, which is a significant burden. These circumstances are preventing discussions from moving forward. Register studies are also necessary because there is no data.

■ Meeting details

Date and time: Wednesday, September 29, 2021; from 16:00 to 18:00

Venue: Online using the Zoom conferencing system

Host: Health and Global Policy Institute (HGPI)

Advisory board members:

Mitsuaki Isobe (Director, Sakakibara Heart Institute, Japan Research Promotion Society for Cardiovascular

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Satoshi Imamura (Vice President, Japan Medical Association)

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Ryozo Nagai (President, Jichi University)

Yoko M. Nakao (Director, Registry Promotion Office, Department of Medical and Health Information

Management, Open Innovation Center, National Cerebral and Cardiovascular Center)

Kazuhiro Hara (Specially Appointed Professor, Seto Inland Sea Regional Research Center, Kagawa University)

Kenichi Hirata (Professor, Division of Cardiovascular Medicine, Department of Internal Medicine, Graduate

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Hitoshi Fukuhara (Representative Director, Heart Valve Voice)



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Takashi Fujii (Vice Chairman, System Council, Nagasaki Regional Healthcare Collaboration Network; Vice Chairman, Nagasaki Prefecture Medical Association)

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Yoshio Yazaki