

On the activities of the  
Division of Innovation for Medical Technology



The Jikei University



The Division of Innovation for Medical Technology at The Jikei University began with the inauguration of the endowed chair that was its predecessor in April 2015. Since that time, with the aim of using information and communication technology (ICT) in medicine, it has undertaken a wide range of activities from basic research for technical development to clinical applications. It has been involved in medical equipment programs, such as the “Join” app that is the first in Japan to be covered by health insurance, and support for medical equipment research and development, while also conducting research to build community-based medical information systems using ICT and collecting data to optimize medical fees.

In addition, we analyze information obtained using AI, robots, or wearables, and conduct research on the provision of information that is helpful to the medical world, as well as research on things such as accessibility functions. These studies are regarded as “digital medicine (health),” with the aim of equalization and improvement in the quality of medical care in a wide range of fields.



Neurosurgeon

# HIROYUKI TAKAO, M.D., Ph.D.



The Jikei University  
Division of Innovation for  
Medical Technology Associate Professor

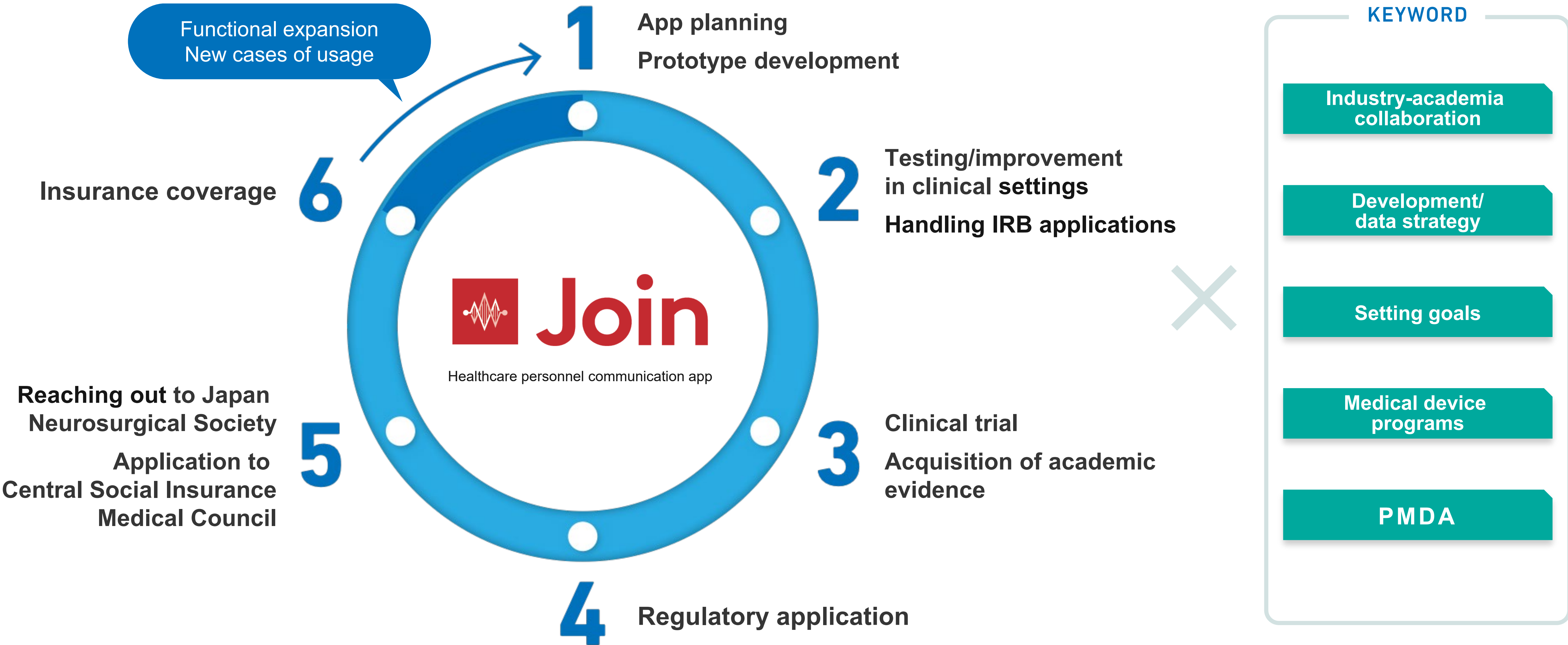
Digital Agency

Digital Agency  
Accessibility Planning  
Project Manager

## CAREER

- April 2001 Began neurosurgery residency under direct supervision of hospital superintendent at Jikei University School of Medicine
- March 2003 Completed residency
- April 2003 Enrolled in neurosurgery course at Jikei University School of Medicine
- April 2007 Tokyo Jikei University Daisan Hospital, Assistant Professor
- Feb 2008 Tokyo Jikei University Hospital, Assistant Professor
- Feb 2012 Studied abroad as research assistant at the University of California, Los Angeles (UCLA) Department of Neuroradiology
- Feb 2014 Completed studies
- April 2014 Tokyo Jikei University Hospital, Part-time Professor
- April 2014 Ministry of Health, Labour and Welfare, Health Policy Bureau, Research and Development Division, Deputy Head of Medical Technology and Information Development Office
- July 2014 Tokyo University of Science, Visiting Associate Professor (~March 2019)
- July 2014 Ministry of Health, Labour and Welfare, Health Policy Bureau, Economic Affairs Division, Deputy Head of Medical Device Policy Office
- July 2014 Ministry of Health, Labour and Welfare, Health Policy Bureau, Economic Affairs Division, Deputy Director
- July 2014 Ministry of Health, Labour and Welfare, Health Policy Bureau, Economic Affairs Division, Distribution Advisor (~March 2015)
- Dec 2014 Tokyo Medical and Dental University, Part-time Lecturer (~March 2019)
- April 2015 Jikei University School of Medicine, Department of Neurosurgery & Division of Innovation for Medical Technology, Associate Professor
- April 2016 National Strategy Office of Information and Communication Technology, Cabinet Secretariat, Aide to Government CIO (~March 2019)
- Oct 2017 Osaka City University Graduate School of Medicine, Visiting Associate Professor (~March 2019)
- Jan 2018 Hokkaido University Hospital, Visiting Clinical Associate Professor (~March 2020)
- July 2018 HYOGO COLLEGE OF MEDICINE, Part-time Lecturer (~March 2020)
- Sep 2019 World Federation of Neurosurgical Societies, Publication and Web committee
- Aug 2020 Tokyo Medical and Dental University, Visiting Professor
- Sep 2021 Digital Agency, Accessibility Planning, Project Manager

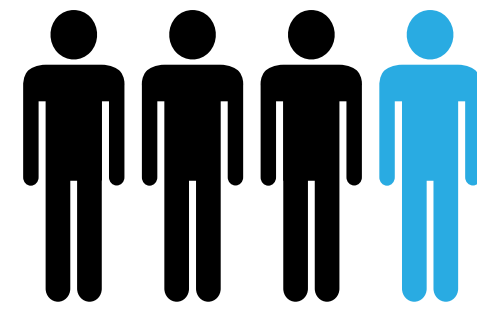




## 2025 Super-aging society

2025 problems

Medical, care, and social insurance costs



1 in 4 Japanese are 75 or older

Medical fees/  
insurance benefits

54  
trillion yen ?

Hospital management/  
revenue structure

Rethinking how it should be

## 2024 Physician work-style reforms

Physician  
2024 problems

Level A / All doctors and staff physicians engaged in medical care

960 100  
hours or less/year hours or less/month  
(including holiday work)

Do we correctly understand  
the working conditions of  
doctors?

TODAY

Covid19

Special framework for  
infectious disease



In the NEDO SIP care project, we provide a high value-added care model using AI in which frames are prepared using different types of data in a timely manner, while also, with a view to export, currently constructing a platform to achieve social insurance fee reductions for care and conducting verification to create a positive cycle.

#Wearables

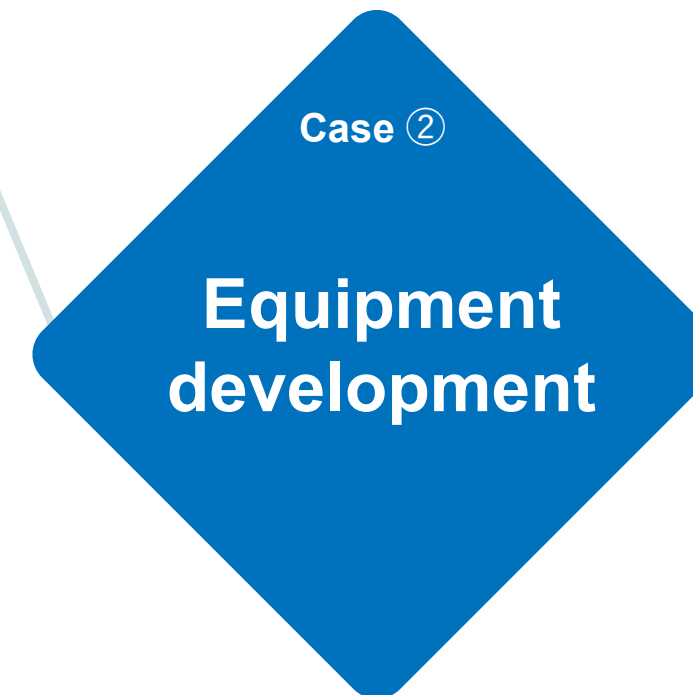
#AI

#Medical equipment development

#Telemedicine

#Community medicine information sharing

#Data linkage

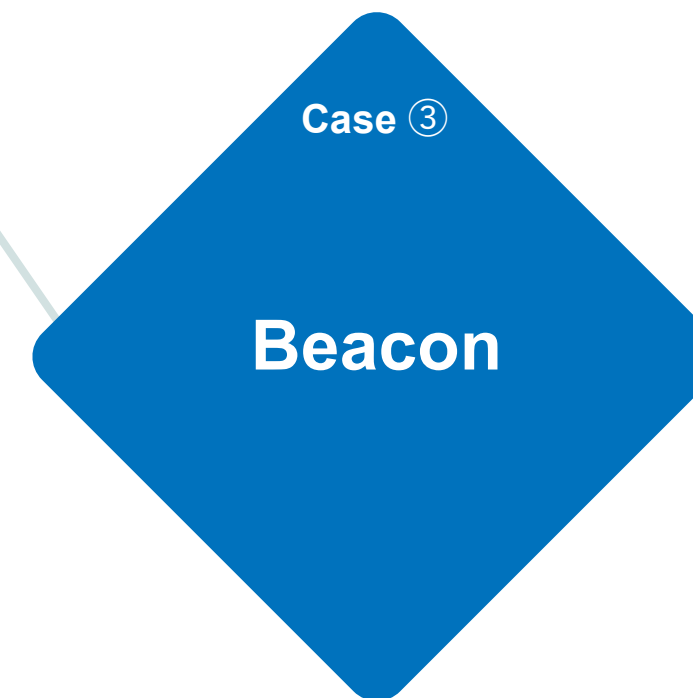


Regulatory application support for small telemedicine devices that have camera, thermometer, stethoscope, and other functions. Systems in which conditions of the throat, lungs, heart, ears, and more are conveyed to the doctor by the patient or a family member. Doctors make diagnoses with the data that are sent.

#Medical equipment development

#Digital medicine

#Telemedicine



Surveys of doctors' time in the hospital were started from 2016 with the installation of in-hospital beacons and Bluetooth. In addition to understanding work conditions from doctors' reports, positional information is acquired to digitize and analyze work status.

#Work-style reforms

With each partner and ICT as a basis, research to solve issues and social implementation is carried out

#Accessibility

#Wearables

#Digital medicine

#Work-style reforms

#Telemedicine

#Medical fee optimization

#Economic rationality

#Medical device development

#Robots

#AI

#Data linkage

#Personal health records (PHR)

#Community medicine information sharing