Healthcare Business Unit

Innovating Healthcare, Embracing the Future
Toward the Realization of Healthcare Innovation

To the present Hitachi has strived to create a convenient and comfortable society through its businesses for building social infrastructure in fields such as electric power, water and transportation systems essential to everyday life. Hitachi is working to further raise the sophistication of social infrastructure by combining cutting-edge IT with infrastructure technologies cultivated over many years. Through our Social Innovation Business, we aim to provide solutions to various issues.

Today, Hitachi also regards healthcare as being a crucial part of social infrastructure that will support society in the 21st century and is therefore undertaking the healthcare business as one pillar of its Social Innovation Business. Hitachi will combine its collective strengths with IT to provide innovative technologies and systems, solutions and services in the healthcare field. In doing so, Hitachi will respond with innovation to the challenges facing society.

We aim to create a happy society in which everyone can enjoy a secure and safe way of life. Driven by this objective, Hitachi has begun taking on new challenges with a view toward creating healthcare innovation throughout the world.
Hitachi’s Healthcare Business

We aim to create a happy society in which everyone can enjoy a healthy, secure and safe way of life.

Global Healthcare is facing a period of major change characterized by the increasing incidence of a variety of diseases, the challenges of regional disparities in the provision of healthcare and increasing medical expenditure. To address these fundamental issues, Hitachi delivers innovations that answer the challenges around the world.

Hitachi’s core strengths in Healthcare:
- Comprehensive capabilities for Healthcare leadership in global social systems
- Development capabilities for the collaborative creation of products and services with our partners in the healthcare industry
- Innovative capabilities that draw on new possibilities in IT

By collaborating with diverse partners, employing technologies from various industries and drawing upon our experience developing user-friendly healthcare products, we are helping to deliver healthcare services tailored to individuals in every stage of life and contributing to sustainable social systems suitable for each country.

We will contribute to healthcare innovation through global teamwork to create societies in which everyone enjoys a healthy way of life that is secure and safe.

Innovating Healthcare, Embracing the Future

Together with All People

Creation of new value through the use and application of data

Healthcare IT
- Electronic health record system
- Automated clinical analysis systems
- Clinical laboratory test system
- Optical topography system

Examinations and Measuring
- Diagnostic ultrasound system
- MR systems
- CT systems
- Biopharmaceutical manufacturing and control system
- Cell processing factory support services

Solution
- Smart operating rooms
- Hospital management support services
- Radiation evaluation diagnostic services
- Drug development
- Electronic health record system
- Cloud backup service
- Image transfer service for medical examination vehicles

Prevention and Checkup
- Cloud-based health support services
- Electronic health record support services
- Health checkup operation support systems

Therapy
- Radiation therapy system
- MRI systems
- CT systems

Arterial health management support services
- Health checkup operation support systems

Diagnosis
- Electronic health record system
- Cloud backup service
- Image-based health management support services

Healthcare Business

Comprehensive capabilities for leadership in global social systems

Government and municipalities/insured persons

Create sustainable health and care systems.

Doctors and medical care professionals

Provide medical care services that draw close to each and every person.

Hospitals and medical institutions

Realize efficient medical care management through overall optimization.

Hitachi’s Social Innovation Business

Energy

Urban development

Transport

Manufacturing and Construction

Information technology

Logistics

Finance

Healthcare

Hitachi’s Healthcare Business

Innovation creation capabilities utilizing IT

Drug development

Prognosis and Elderly care

Prognosis and Elderly care

Nursing care business management and partnering support systems

Aged welfare facility operation and elderly care services

Hospitals and medical institutions

Realize efficient medical care management through overall optimization.

Healthcare IT

Examinations and Measuring

Solution

Prevention and Checkup

Therapy

Diagnosis
More than one century has passed since Hitachi was founded in 1910 based on its mission of “Contributing to society through the development of superior, original technology and products.” Hitachi has been active in the healthcare field during this time and from the 1950s developed X-ray machines and diagnostic imaging equipment using ultrasound. Since then, Hitachi has contributed to the advance of healthcare for many years. With this history serving as a powerful driving force, in the 2000s Hitachi expanded the scope of this business to encompass leading-edge domains such as cancer treatment system and healthcare IT, and by doing so, is contributing to raising the quality and efficiency of healthcare.

History of Hitachi’s Healthcare Business
Hitachi has provided advanced medical equipment and technologies to the healthcare market over many years.

- Developed a tumor-tracking proton beam therapy system with high-precision irradiation capabilities for moving targets. (Jointly developed with Hokkaido University)
- Developed the world’s first ultrasound Real-Time Tissue Elastography (RTE)
- Developed the world’s first Diagnostic Ultrasound System
- Developed Japan’s first head X-ray CT scanner
- Established the world’s first mass stomach cancer examination system by mobile units
- Hitachi was founded
- Developed the world’s first color Doppler method
- Developed world’s first color Doppler method
- Hitachi’s proton beam therapy system utilizing spot scanning irradiation was the first such system in the world to be authorized by the U.S. Food & Drug Administration (FDA). (First Clinical Application in the U.S. FDA 510(k) number: K073059)
- Launched sales of a diagnostic ultrasound system that incorporates Symphonic Technology
- Launched sales of open MRI systems using permanent magnets
- Launched sales of open MRI systems with the highest magnetic field strength and largest space
- Launched sales of 3-Tesla superconducting MRI system
- Hitachi developed X-ray machine products

Hitachi founder
Namihei Odaira
Original repair shop where Hitachi was founded
The first Hitachi product
Five horsepower induction motor
Hitachi was founded
1910
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1953
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Cloud-based health support service
Cloud-based health support service aims to lower the risk of lifestyle-related diseases by helping reduce visceral fat. This service provides a means for anyone with access to an Internet environment and PC to reasonably continue their diet, and it is already being used by numerous organizations and companies.

Employee health management support service
Personal information management and support of the complicated operations of industrial physicians and public health nurses in performing periodic medical examinations and special health examinations at companies is provided through this cloud-based service. As an option, this service can comprehensively support a series of operations based on stress-check systems.

Health checkup operations support system
This system supports the entire range of health checkup operations, from the operation of health examination facilities to the processing of health checkup data and sales support. This system provides solutions to a variety of challenges facing customers. These solutions include the “visualization of operational flows” to enable the distribution of operations to be undertaken efficiently and “system linkage functions” to realize the connection of multiple systems.

Diagnostic ultrasound system
Ultrasound systems are used frequently at medical care locations as the first choice in diagnostics. In 1960, Hitachi became the first in the world to commercialize an ultrasound system. These systems serve as forerunners in the practical application of innovative technologies and are also useful as a guide for diagnosis and treatment.

MRI system
Hitachi offers a wide lineup that ranges from permanent magnet open MRI systems integrating our unique technologies to the 3-Tesla superconducting MRI system. Our open MRI systems have compiled numerous achievements, mainly in North America, as well as in Europe and Asian countries.

CT system
This system realizes quick and wide-ranging high-resolution imaging using Hitachi’s original high-speed data sampling technologies and noise-reduction technologies. Besides compatibility between compactness and a large-diameter gantry in addition to its low-radiation exposure technologies, the CT system is also recognized for its intuitively operable interface.

X-ray diagnostic system
Hitachi can respond to a variety of applications with an extensive product lineup that ranges from X-ray general imaging systems to X-ray fluoroscopy systems and mobile X-ray systems. Additionally, these systems provide high-resolution images through Hitachi’s independently developed image processing engine.

Bone densitometry systems
DXA*-based bone densitometry systems realize reliable measurement accuracy within compact spaces. Hitachi also offers a lineup of QUS**-based ultrasound bone densitometry systems.

*1 DXA: Dual-energy X-ray Absorption
*2 QUS: Quantitative Ultrasound

Hitachi contributes to early detection and early treatment of diseases by utilizing checkup data and providing a wealth of services.

Hitachi is further expanding the possibilities of diagnostic imaging by utilizing cutting-edge technologies.
Hitachi’s desire for patient-friendly medical care that minimizes burdens on the body contributes to raising the precision of treatments.

Therapy Systems

Particle beam therapy system
Hitachi offers systems capable of advanced spot-scanning irradiation technologies. These systems use proton beams for highly accurate irradiation of various tumors, even those with complex shapes, to minimize impact on healthy tissue. Combining these systems with tumor-tracking irradiation technology enables high-precision irradiation of targeted areas in motion due to breathing or other factors.

Healthcare IT

Electronic health record system
Hitachi provides a broad lineup of electronic health record systems for medical institutions ranging from large hospitals to medium- and small-sized hospitals and clinics. These systems support team-based medical care through uniform management of medical examination information and the seamless sharing of medical examination information with staff of each medical department. Additionally, these systems support the establishment of medical care environments needed for community medical care collaboration in the future.

Cloud data backup service
This service entrusts the handling of data, typified by medical image data, to Hitachi’s data centers. This service allows the use of just the contracted data volume portion for a monthly fee and data can be added when the need arises. Because data is maintained at data centers in two different locations, this service is also ideal as an earthquake disaster countermeasure and for business continuity in times of data leakage and widespread virus infections.

Image transfer service for medical examination vehicles
This service provides automated high-speed transfers of medical images, which are taken with digital X-ray imaging systems, from medical examination vehicles to cloud storage locations. This allows the images to be used immediately at medical facilities. Besides enhancing the efficiency of medical image storage work at medical facilities, the service also minimizes the risk of any leakage of information such as medical images.

Clinical examination information system
Clinical examination information systems automate the processing of examination data from examination equipment that is capable of high-speed and large-volume processing and enhances the efficiency of reporting to medical examination departments. These systems also incorporate various data checking functions, precision control functions and TAT*1 management functions to ensure the safe and secure management of examination data.

*1. TAT: Turn Around Time

Anonymized information management service
This is a service for managing various types of personal and customer information that is anonymized to prevent personal identification by individuals at businesses and medical institutions that handle personal information. The encrypted data is searchable without decryption, enabling sensitive data to be used securely and safely.
### Smart operating rooms

In 1999, a Hitachi open MRI system was introduced at a neurosurgery operating room. Through an image guide that tracks movements in brain tissue after the skull is opened, this system enabled advanced surgery support for brain tumor resections. By collaborating with various surgical instrument manufacturers, Hitachi plans to promote further advances in image-guided surgery support systems.

### IVR*1 rooms

Based on Hitachi’s experience gained from numerous deliveries of X-ray fluoroscopy table systems, Hitachi supports the building of “stress-free” environments in IVR rooms*1. Hitachi provides total proposals that extend from examining the process flow line and planning layouts for equipment placement giving consideration to users, usage methods and usage environments to handling peripheral equipment and facilities inside the treatment room.

*1. IVR: Interventional Radiology  
*2. Limited to surgeries not required to correspond with JIS Z4751-2-43

### Hospital management support service

This service supports the raising of management efficiency at hospitals. Specifically, Hitachi responds to issues faced by hospitals and as a partner introduces various types of equipment and works toward management optimization. Hitachi prepares business plans covering a 10-year period for the introduction of diagnostic imaging equipment. Moreover, Hitachi introduces the latest model equipment as its own assets and supports the operation of this equipment. This is a contingent fee-type service and Hitachi works for improvements together with hospitals until results are achieved.

### Malfunction indication diagnostic service

This maintenance service gathers and analyzes sensor information from customers’ medical equipment through IoT*3/M2M*4 networks to provide high-precision prior detection of any possible equipment malfunction and elucidate the cause. The use of this service prevents sudden equipment malfunctions and helps raise operating rates.

*3. IoT: Internet of Things  

### Support for community comprehensive care

Hitachi provides information infrastructures that allow a wide variety of professions to securely share, use and apply information on health, medical care, nursing care, lifestyles and home safety monitoring with the aim of creating healthy communities by promoting home care and nursing care collaboration and home oral health care.

Data use and application spur innovation in healthcare from the development of medical devices to raising the quality of medical care for each and every person.
Examinations and Measuring

Clinical laboratory test system
High speed and high precision are required for a variety of automated analysis equipment used in each field of clinical laboratory testing. Hitachi’s medical specimen pre-treatment system contributes to the presentation of speedy clinical testing results by further accelerating the high-speed of high-precision dispensation. This system also improves the automation of various processes and enhances ease of use.

Optical topography system
This system enables the “visualization” of brain activity conditions by measuring changes in hemoglobin concentrations in blood within the cerebral cortex accompanying brain activity. It is being widely used in numerous areas, beginning with clinical applications covering neurosurgery, psychiatry, and rehabilitation fields.

X-ray irradiation equipment
This special-purpose equipment uses x-rays to irradiate blood transfusion blood products and adopts a vertical two-directional x-ray irradiation method cultivated by Hitachi over many years.

Equipment for Research Facilities

Imaging equipment for small animal testing
X-ray CT equipment for laboratory animals is indispensable for the development of therapeutic drugs and diagnostic drugs and for pharmacological research. Through the use of high-sensitivity sensors, this equipment enables long-term observations without adversely affecting laboratory animals.

Body composition analysis equipment
This animal-use body composition analysis equipment performs measurements using the principle of nuclear magnetic resonance (NMR). This equipment can perform high-precision measurements within a short-time period and enables chronological observation of changes in body composition of obese animals.

Bio- and chemiluminescence measuring equipment
This equipment enables ATP*1 measurements such as the measurement of antioxidant capacity of food, the amount of active oxygen generated by cells due to stress and viable bacteria count, as well as allows for investigations of the expression and control of genes in cells.

*1 ATP: Adenosine triphosphate