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Kyoto University Hospital GUIDANCE 2015

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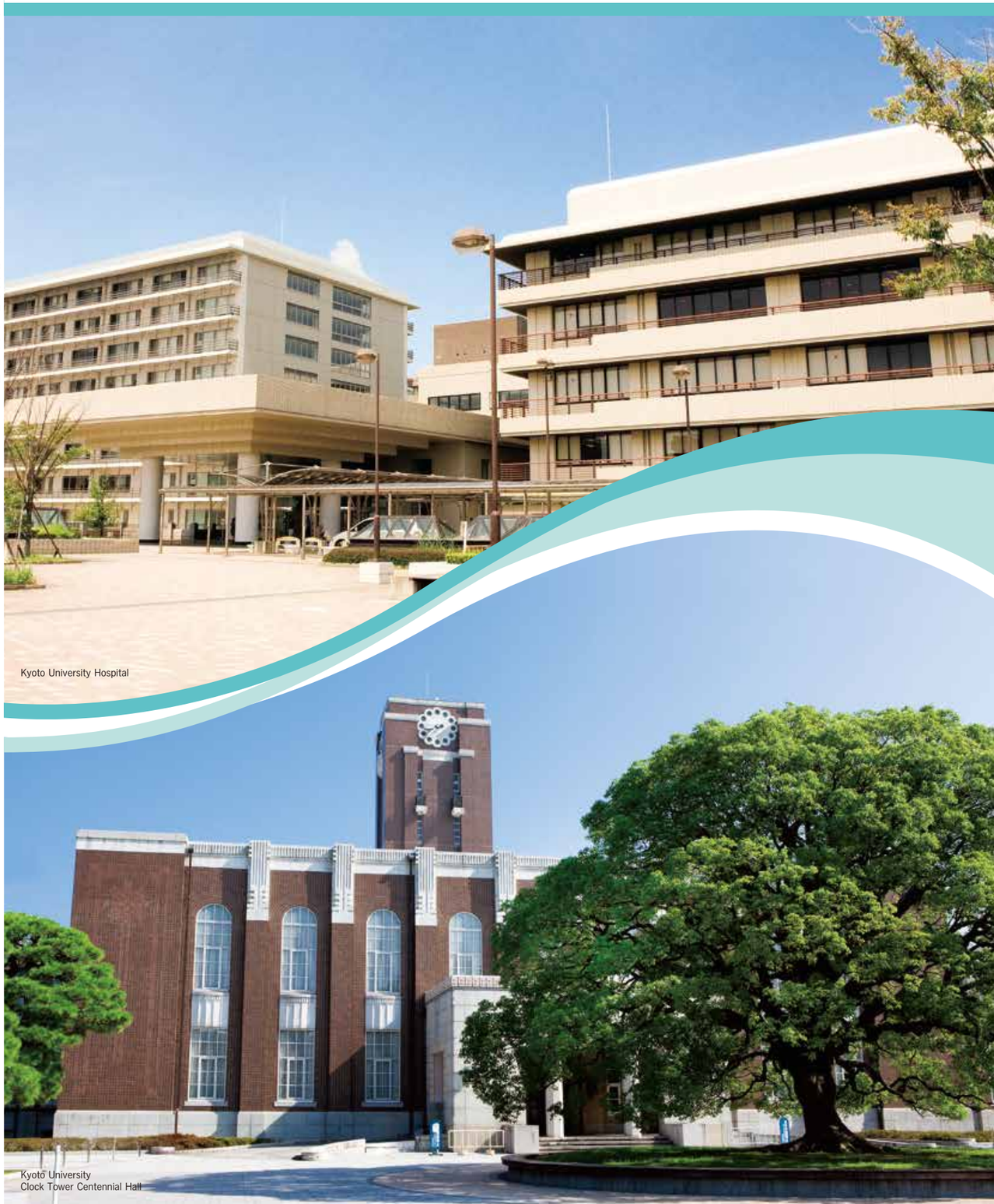


Kyoto University Hospital

Kyoto University
Clock Tower Centennial Hall

2015

Basic Principles

1) Providing safe and high-quality medical care as a patient-centered hospital.

2) Contributing to society through the development and practice of new treatments.

3) Fostering medical professionals with a sense of mission, responsibility as well as compassion.

Patients' Rights and Responsibilities

Kyoto University Hospital strives to provide safe,
quality medical care to bring the finest benefits to our patients while respecting their rights,
as expressed in our Basic Principles.

At the same time, we ask that patients review their responsibilities to
ensure that healthcare service recipients maintain favorable relations with
medical professionals and undergo treatment with peace of mind.

Rights of Patients'

1) You have the right to receive quality medical care with dignity and respect.

2) You have the right to receive a full explanation and to make a decision on your own treatment.

3) You have the right to have your privacy protected.

Patients' Responsibilities

1) to provide accurate information about their health to medical personnel

2) to actively understand and cooperate with their diagnosis and treatment

3) to ensure that they do not interfere with other patients or obstruct provision of medical care

History

1899	7	Kyoto Imperial University College of Medicine established.
	12	Kyoto Imperial University College of Medicine Hospital opened.
1919	2	Kyoto Imperial University College of Medicine Hospital renamed the Kyoto Imperial University Hospital.
1947	9	Kyoto Imperial University renamed Kyoto University.
1949	5	Kyoto Imperial University College of Medicine Hospital renamed the Kyoto University Hospital.
1958	2	Central Medical Ward established.
1962	4	Department of Pharmacy established.
1964	3	Outpatient Care Ward established.
1976	5	Nursing Department established.
1978	3	RI Medical Ward established.
1985	3	MR Ward established.
1987	10	First Clinical Research Ward established.
	11	General Internal Medicine Ward established.
1988	3	Psychiatry Ward established.
1992	1	Central Medical Facility Ward established. Second Clinical Research Ward established.
1995	6	Ward names changed (General Internal Medicine Ward changed to North Ward; General Surgical Ward changed to South Ward, and Neuro-Psychiatric Ward changed to West Ward).
1998	4	Integrated with the Chest Disease Research Institute.
1999	8	Outpatient Care Ward established.
2000	1	Treatment and examination at the new Outpatient Ward begin under the organ-specific treatment setup.
2003	3	Central Medical Center established.
2007	4	Kyoto University Cancer Center established.
2010	3	Sekitei Ward established.
2011	6	Clinical Research Center for Medical Equipment Development (CRCMED) Ward established.
2013	4	Translational Science integrated the Translational Research Center; The Department of Clinical Trial Management, the Department of Medical Development and Management, and EBM Research Center (Graduate School of Medicine) integrated; and the Institute of Advancement Clinical and Translational Science established.

Greetings by the hospital director

Director, Kyoto University Hospital

Nobuya Inagaki

I am pleased to offer my greetings on the publication of the Kyoto University Hospital Guidance 2015.

To meet societal expectations, Kyoto University Hospital adheres to three guiding principles in the areas of medical care, research, and education.

Of these three principles, we feel that the most important mission for Kyoto University Hospital is to provide patient-focused, safe, and high-quality medical care. To this end, we have been working to promote advanced medical care by bolstering our Cancer Center and, more recently, opening a next-generation hybrid operating room. At the same time, we continue to make every effort to create an open and transparent environment and ensure safe medical care with all of our effort.

Another important mission is to conduct research and development of new methods for treating diseases that have remained incurable until now. As Japan's clinical research core hospital, Kyoto University Hospital has been promoting partnerships with a variety of research departments and institutes, including the Center for iPS Cell Research and Application (CiRA), to approach innovative medical treatments consistently. Going forward, we plan to establish the iPS Clinical Study Center (provisional name) to enable our researchers to develop and release numerous innovative medical treatments.

Our third mission is to educate, train, and develop dedicated and caring healthcare professionals who are able to contribute to healthcare in Japan. Kyoto University Hospital has 1,121 beds and accommodates an average of 2,900 outpatients each day; additionally, the hospital employs approximately 3,000 staff members. The provision of highly advanced, patient-focused, and safe medical care, as well as the development of new medical treatments, is not possible without the close cooperation of our staff members who are engaged in a wide variety of occupations: physicians, nurses, pharmacists, dieticians, laboratory technicians, physical therapists, and administrative staff members. To realize this, we feel it is important to develop outstanding healthcare professionals with high levels of expertise who can offer medical care in a team setting and who have a broad-ranging perspective for assuming leading roles in the global arena. We also consider it is vital to create an environment where all healthcare professionals, including young people and women, can work with a sense of fulfillment and motivation.

In 2010, an eight-storied ward —the Sekitei Ward— was newly built, thanks to the generous donation by the late Mr. Hiroshi Yamauchi, the advisor of Nintendo Co., Ltd. On the south side of this ward, a new ward (also eight stories high) is planned for completion in 2015. In this ward, we will mainly treat patients with lifestyle-related diseases. A heliport is also planned for the new ward. In 2019, moreover, a new eight-storied ward should be completed on the north side of Sekitei Ward, and its focus will be the treatment of acute stage patients. With these new wards and the subsequent planned renovation of the North Ward, Kyoto University Hospital will undergo dramatic changes over the next few years. We expect to establish an environment in which patients can receive even more advanced treatments with ease and comfort.

Now that we have entered an era with a super-aging society, dividing hospital functions has become a task of extreme urgency. As a hospital charged with offering advanced acute stage medical treatments and highly advanced medical technology, Kyoto University Hospital staffs believe the construction of a system that enables our patients, who have undergone acute stage treatment, everyday lives with peace of mind after returning to their homes will become more important. Moreover, the regional collaborations would be also essential.

As a hospital equipped with advanced functions, and as a community-based hospital with both a broad and local outreach, Kyoto University Hospital is committed to fulfilling our mission and meeting social expectations.

Your continued support and guidance is greatly appreciated.

1 Overview

As of April 1, 2015

Hospital executives	Hospital Director (professor)	Nobuya Inagaki	Assistant Director (professor)	Tomohiro Kuroda
	Deputy Director (professor)	Susumu Miyamoto	Assistant Director (professor)	Ryosuke Takahashi
	Deputy Director (professor)	Toshio Heike	Assistant Director (professor)	Kiminori Hosoda
	Deputy Director (professor)	Shuichi Matsuda	Assistant Director (professor)	Kazuo Matsubara
			Assistant Director (director, Department of Nursing)	Tomoya Akiyama
	Deputy Director (professor)	Satoshi Ichiyama	Assistant Director (director, Administration Office)	Hiroaki Yamaki
Location	54 Kawahara-cho, Shogoin, Sakyo-ku, Kyoto City 606-8507, Phone: 075-751-3111; Fax: 075-751-6151			
Access (nearby train stations and time required to reach the hospital)	Get off at JR Kyoto Station. Take the City Bus bound for Kitaoji Bus Terminal (Line 206) from D2 Bus Stop, and get off at Kumano Jinja (shrine)-mae.			
	Get off at Keihan Railway's Jingu-Marutacho Station. The hospital is a 10-minute walk from the station. ⇒For details, see the Access Map on P. 86.			
History and characteristics	History	July 1899	Kyoto Imperial University College of Medicine was established.	
		December 1899	Kyoto Imperial University College of Medicine Hospital was opened, and clinical services began.	
		February 1919	The name was changed to Kyoto Imperial University Hospital.	
		May 1949	The name was changed to Kyoto University Hospital.	
		April 1998	The 160-bed Chest Disease Research Institute was merged.	
		April 2004	Japan's national universities became independent corporations.	
	Characteristics	Basic principles of Kyoto University Hospital 1. Provide safe and high-quality medical care as an open, patient-focused hospital. 2. Contribute to society through the development and practice of new medical treatments. 3. Educate and foster medical professionals with a sense of mission, responsibility, and caring. In line with its basic principles, Kyoto University Hospital develops a variety of operations, with medical care, research, and education as the key areas of interest. In terms of medical care we have been strengthening our operation system to meet the growing need for more advanced medicine. The Cancer Center now offers unit outpatient care with the internal medicine, surgery, and radiology departments working together. We have also established the Division for iPS Cell Application Development, the Stroke Care Unit, and the Department of Clinical Oncology; additionally, we have introduced a hybrid operating room as well as high field 3-tesla MRI surgery rooms.In terms of research, the Clinical Research Center for Medical Equipment Development was launched in June 2011, where the development of cutting-edge medical equipment is underway. In April 2013, we established the Institute for Advancement of Clinical and Translational Science (iACT) to step up clinical research. In terms of education, we have set up the Integrated Clinical Education Center to offer education and training not only for physicians and dental physicians but also for pharmacists and other medical staff. In addition to these activities, we are eagerly promoting collaborations with other medical institutions in the region.		

As of April 1, 2015

Buildings and grounds	Buildings at the site	150,088㎡	Building area	32,389㎡	Building's total floor area	159,512㎡	
Hospital staff, etc.	Physicians (including medical staff)	947 people	Clerical staff			328 people	
	Dentists (including medical staff)	19 people	Others			428 people	
	Nursing staff	1,069 people	Total			3,070 people	
	Pharmacists	95 people	Interns	Medical		117 people	
	Radiological and X-ray technologists	67 people		Dental		10 people	
	Clinical and medical laboratory technologists	88 people	Foreign physicians undergoing advanced clinical training, etc.			1 people	
	Physical and occupational therapists	29 people					
Clinical departments	Departments of Internal Medicine; Psychiatry; Pediatrics; Surgery; Orthopedic Surgery; Neurosurgery; Dermatology; Urology; Obstetrics; Gynecology; Ophthalmology and Visual Sciences; Otolaryngology, Head and Neck Surgery; Radiology; Oral and Maxillofacial Surgery; Orthodontic Dentistry; Anesthesia; Emergency Medicine; Cardiovascular Medicine; Neurology; Thoracic Surgery; Cardiovascular Surgery; Plastic and Reconstructive Surgery; Rihabilitation Medicine; Diagnostic Pathology			No. of clinical departments		24	

Hospital beds	Classification	No. of beds	Classification	No. of beds	No. of hospital rooms			
	General	1,046 beds	Tuberculosis	15 beds	Private rooms	323 rooms	4-person rooms	171 rooms
	Convalescent	0 beds	Infectious diseases	0 beds	2-person rooms	29 rooms	Rooms with 5 persons or more	8 rooms
	Psychiatric	60 beds	Total	1,121 beds	3-person rooms	1 room	Total	532 rooms

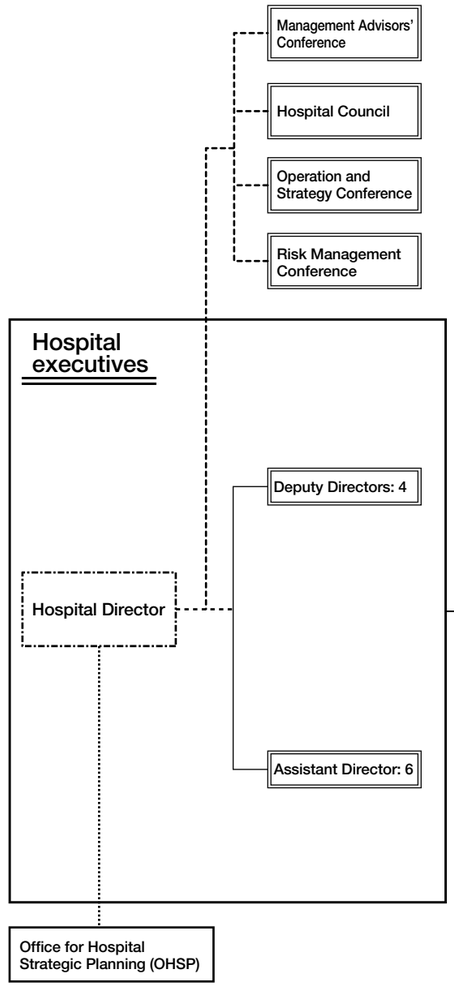
Advanced medical treatment	Advanced medical care A (Paragraph 2) (1) Crystalline lens reconstruction using multifocal intraocular lenses (May 1, 2011) (2) Small intestine transplantation from a brain-dead donor to treat short bowel syndrome or irreversible small intestinal functional failure (March 1, 2012) (3) Measurement of the extent of minimal residual disease (MRD) using quantitative PCR performed with immunogenetically recombined acute lymphocytic leukemia cells (November 1, 2012) Advanced medical care B (Paragraph 3) (1) Pancreatic islet transplantation from a cardiac arrest donor to treat patients with insulin-dependent diabetes and severe hypoglycemic attacks: Insulin-dependent diabetes accompanied by severe hypoglycemic attacks (November 1, 2010) (2) Postsurgical combination therapy with hormones and oral S-1 (April 1, 2011) (3) Combination therapy with intravenously administered pemetrexed and cisplatin: for lung cancer (applicable only for those cases in which pathologically confirmed complete resection, except for squamous cell and small cell lung cancer) (December 1, 2012) (4) Presurgical combination therapy with hormones and zoledronic acid: for hormone-sensitive postmenopausal breast cancer (only those cases in which the tumor has diameter not more than 5 cm, has no lymph node or distant metastasis, and is estrogen-receptor-positive and HER2-negative) (November 1, 2012) (5) Biodegradable stent placement for refractive benign esophagostenosis following radical treatment for esophageal cancer: for refractory benign esophagostenosis following radical surgery for esophageal cancer (only those cases confirmed to be non-malignant based on endoscopic findings and pathological standpoints, and those that do not respond to conventional treatment methods) (September 1, 2013) (6) Octreotide subcutaneous injection therapy: for congenital hyperinsulinemia (only those cases with patients aged from 2 weeks to less than 12 months, and cases that do not respond to oral administration of diazoxide) (December 1, 2014) (7) Endoscopic laryngopharyngectomy using endoscopic surgery robots: for oropharyngeal, hypopharyngeal, or laryngeal cancer (only those cases of patients whose TNM stages are either Tis, T1, or T2, N0, and M0) (February 1, 2015)

No. of patients	Classification	No. of inpatients		No. of outpatients		Autopsies	
		Annually (total no.)	Average per day	Annually (total no.)	Average per day	No. of cases	Autopsy rate
	2012	356,990 people	978 people	681,766 people	2,794 people	39 cases	10.6%
	2013	352,463 people	966 people	689,209 people	2,836 people	19 cases	5.6%
	2014	347,016 people	951 people	692,490 people	2,850 people	30 cases	10.8%

Date of approval as a technologically advanced hospital	February 1, 1995
Date of authorization as a hospital accredited by Japan Council for Quality Health Care	December 16, 2007
Date of designation as an AIDS treatment core base hospital	July 1, 2008
Date of designation as a liver disease care liaison hospital	August 8, 2008
Date of designation as a prefectural cancer care liaison hospital	April 1, 2013 (designated period: April 1, 2013 to March 31, 2017)
Date of designation as a disaster base hospital	April 1, 2015

2 Kyoto University Hospital's organizational diagram

(As of April 1, 2015)



Clinical Departments

Internal Medicine
- Department of Hematology and Oncology
- Department of Diabetes, Endocrinology and Nutrition
- Department of Cardiovascular Medicine
- Department of Gastroenterology and Hepatology
- Department of Respiratory Medicine
- Department of Rheumatology and Clinical Immunology
- Department of Primary Care and Emergency Medicine
- Department of Neurology
- Department of Nephrology
- Department of Clinical Oncology
- Department of Palliative Medicine

Surgery
- Department of Gastrointestinal Surgery
- Department of Breast Surgery
- Department of Hepatobiliary Pancreatic Surgery and Transplantation
- Department of Pediatric Surgery

Radiology
- Department of Radiation Oncology and Image-Applied Therapy
- Department of Diagnostic Imaging and Nuclear Medicine

- Department of Ophthalmology and Visual Sciences
- Department of Obstetrics and Gynecology
- Department of Pediatrics
- Department of Dermatology
- Department of Urology
- Department of Otolaryngology, Head and Neck Surgery
- Department of Orthopaedic Surgery
- Department of Psychiatry
- Department of Oral and Maxillofacial Surgery
- Department of Anesthesia
- Department of Neurosurgery
- Department of Plastic and Reconstructive Surgery
- Department of Cardiovascular Surgery
- Department of Thoracic Surgery
- Department of Rehabilitation Medicine
- Department of Diagnostic Pathology

Central Clinical Center

Central Clinical Center
- Clinical Laboratory
- Surgery Unit
- Clinical Radiology Service Unit
- Emergency Department
- Rehabilitation Unit
- Psychiatric Day Care Unit
- Department of Medical Equipment
- Department of Transfusion Medicine and Cell Therapy
- Department of Maternal and Perinatal Care
- Artificial Kidney Unit
- Department of Diagnostic Pathology
- Department of Metabolism and Clinical Nutrition
- Intensive Care Unit (ICU)
- Endoscopy Unit
- Organ Transplant Medical Care Unit
- Clinical Genetics Unit
- Department of Infection Control and Prevention
- Cardiovascular Care Unit (CCU)
- Consultation Room for Women's Mental and Physical Health
- Neonatal Intensive Care Unit (NICU)
- Stroke Care Unit (SCU)
- Clinical Psychology Office

Other facilities

- Nursing Department
- Department of Clinical Pharmacology and Therapeutics (Pharmacy)
- Department of Medical Information Technology and Administration Planning
- Department of Community Network and Collaborative Medicine (DCNCM) and the Regional Medical Liaison Office (RMLO)
- Department of Medical Safety Management
- Integrated Clinical Education Center
- Solutions Center for Health Insurance Claims
- Kyoto University Cancer Center
- Clinical Research Center for Medical Equipment Development
- Rheumatic Disease Center
- Division for iPS Cell Application Development
- Institute for Advancement of Clinical and Translational Science (iACT)
- Preemptive Medicine and Lifestyle Disease Research Center
- Geriatric Medicine Unit
- Patient Safety Unit
- Hyperbaric Oxygen Therapy Unit
- New Hospital Preparation Promotion Department
- Clinical Record Management Unit

Administrative Office

- General Affairs Section
- Business Management Section
- Accounting and Procurement Section
- Medical Services Section
- Medical Affairs Section
- New Hospital Preparation Promotion Office

CONTENTS

KYOTO UNIVERSITY HOSPITAL

Clinical Departments

Central Clinical Center, etc.

The information for each clinical department and for the Central Clinical Center are as they were in March 2014, except for the clinical department director(s), etc.
However, the information is as it was in December 2014 for the Epilepsy & Movement Disorders, the Department of Palliative Medicine, the Palliative Care Center, and the Psychological Support Service for Patients and Famillies.

Clinical Departments

Internal Medicine

Department of Hematology and Oncology

Director
Prof. Akifumi Takaori

Medical care at the top level for patients with intractable hematological disorders

Our goal is to provide medical care aiming to cure patients with any hematological disorders regardless of patient background; 2) we select and administer the best treatment for hematological malignancies according to the results of pathological analyses at molecular levels; 3) to improve the outcome, allogeneic cell therapies are combined with chemotherapies and radiation therapies, for example, Ⅰ) advanced medical care such as allogeneic hematopoietic stem cell transplantation, for patients with hematological malignancies, Ⅱ) novel therapies that need to be developed for hematological malignancies for which standard therapies have not been established, such as adult T cell leukemia, and Ⅲ) tumor-specific immune-cell therapy for leukemia in elderly patients, for whom allogeneic hematopoietic stem cell transplantation cannot be performed.

Main target diseases

Acute myeloid leukemia, acute lymphoblastic leukemia, chronic myeloid leukemia, myeloproliferative neoplasm, myelodysplastic syndromes, malignant lymphoma (Hodgkin lymphoma & non-Hodgkin lymphoma), multiple myeloma, adult T cell leukemia, aplastic anemia, idiopathic thrombocytopenic purpura, coagulation disorders, chemosensitive solid tumors such as Ewing sarcoma, and HIV infection

Clinical service and performance

Although staff in our department can treat any patient with hematological disorders, we have also organized outpatient clinics specialized in several familiar disorders for patients' and local clinic doctors' convenience. We have started the clinic to treat myelodysplastic syndromes/hematopoietic dysfunction, plasma cell tumors, adult T cell leukemia, malignant lymphoma, acute leukemia, chronic myeloid leukemia, hematopoietic stem cell transplantation, and HIV infection. During the hospital year 2012–2013, 61.8 patients on average consulted our staff daily, 4.7% of whom were new patients, and 92.9% of these new patients had letters of introduction from other physicians. After the Department of Chemotherapy was started for outpatients in 2003, treatments that do not cause severe bone marrow suppression, mainly standard therapies for malignant lymphoma, are carried out at the clinic, which contribute to shortening of hospitalization duration and increasing the number of patients hospitalized. During the hospital year 2012–2013, 83 patients were introduced to the clinic, and 946 courses of chemotherapies were carried out in total. We also have a specialized clinic for donors of allogeneic hematopoietic stem cells to keep donors secure and safe. We also started a specialized clinic for allogeneic hematopoietic stem cell transplantation in April 2012. Our hospital was selected as one of the foothold hospitals for AIDS in 2008, and we have a specialized clinic for HIV infection.
There are a prominent number of beds in the country, 46 beds in a department only for hematological disorders. In 2012, 411 patients were hospitalized in total, with 34.6 days of mean duration. Operating ratio of the beds was 101.4%. Of note, we actively carry out hematopoietic stem cell transplantations, and we conducted 27 allogeneic transplantations and 16 autologous transplantations in 2012.

Clinical research activities

We performed 193 reduced intensity stem cell transplantations from 2000 to 2012 in a clinical study, and established it as a standard treatment. We also conducted a clinical study of immune-cell therapy using dendritic cells for patients with acute myeloid leukemia from 2007 to 2009. To extend immune-therapy to solid tumors, another study of dendritic cell therapy for patients with advanced melanoma has started since July 2012, in cooperation with the Department of Dermatology.

*Reduced intensity allogeneic hematopoietic stem cell transplantation using fludarabine for intractable hematological malignancies: 193 times

We actively participate in other clinical studies and multi-institutional clinical study groups.

Internal Medicine

Department of Diabetes, Endocrinology and Nutrition

Integrated the Diabetes and Clinical Nutrition with the Endocrinology and Metabolism in Sep. 2013

Professor
Nobuya Inagaki

Director
Senior Lecturer
Kazuaki Nagashima

Practice of medical care for diabetes/ endocrine diseases based on the latest evidence

The Department of Diabetes, Endocrinology and Nutrition strives to provide treatment for diabetes mellitus, incorporating new findings based on the latest evidence. We also endeavor to promote patient-oriented care with a team of specialists, including physicians, nurses, nutritionists, pharmacists, laboratory technicians, and exercise instructors. As a medical services provider treating endocrine diseases, we take care of patients by providing precise diagnosis and treatment by means of various imaging modality systems and laboratory examinations.

Main target diseases

Ⅰ. Diabetic diseases:
Diabetes mellitus (type 1, type 2, other types, and gestational diabetes mellitus), hypoglycemia (insulinoma, etc.), and lipodystrophy
Ⅱ.Endocrine disorders:
Hypothalamic and pituitary diseases (acromegaly, Cushing's disease, pan-hypopituitarism, adult growth hormone deficiency, diabetes insipidus, etc.), thyroid diseases (Graves' disease, Hashimoto's disease, thyroid tumor, etc.), parathyroid diseases (hyper- and hypoparathyroidism, etc.), adrenal diseases (primary aldosteronism, Cushing's syndrome, pheochromocytoma, adrenal incidentaloma, Addison's disease, etc.), osteoporosis, metabolic bone disease, hypogonadism, electrolyte imbalance, dyslipidemias, etc.
Ⅲ.Nutritional disorders:
Nourishment management for disorders, including obesity, digestion and absorption disorders, and conditions after surgery for gastrointestinal and liver diseases

Clinical service and performance

Staff of the outpatient clinic and their achievements:
In the outpatient clinic for diabetes/nutrition disorders, physicians, nutritionists, and exercise instructors with substantial nutrition education treat metabolic diseases. In outpatient clinics for endocrine diseases, we offer diagnostic examinations such as thyroid echography, needle biopsy, bone densitometry, computed tomography scan, magnetic resonance imaging, and adrenal scintigraphy in cooperation with associated departments.

Staff for hospitalization care and their achievements:
Physicians, expert nurses, dietitians, pharmacists, and exercise instructors make up the medical team and they engage in hospitalization care for diabetes. We perform skilled assessments of the pathophysiology and complications in individual diabetic patients, and then treat them on the basis of the assessments. We also offer precise diagnosis of endocrine diseases by using tolerance tests as well as various imaging examinations, and treat patients in cooperation with other departments.

Achievement in highly advanced medical treatment

Resumption of islet transplantation:
Because of the safety issue with the enzymes used for the isolation of islets, we had suspended islet transplantation therapy for diabetic patients from 2007. However, we resumed the therapy from 2013. We are closely following up the patients who underwent islet transplantation therapy.

Internal Medicine

Department of Cardiovascular Medicine

Director
Prof. Takeshi Kimura

Providing excellent clinical care with cutting-edge therapeutic services as well as offering teaching and care programs to the patients

Our goal is to provide excellent clinical care, properly and safely, to patients with cardiovascular diseases. The Department of Cardiovascular Medicine actively delivers cutting-edge therapeutic services. We provide 24-hour diagnostic and therapeutic services, including cardiac catheterization to emergency patients. We are also actively engaged in cardiac rehabilitation, nutrition education, life guidance, drug administration guidance, and regional cooperation in order to prevent rehospitalization and to improve the patients' quality of life.

Main target diseases

Ischemic heart diseases, arteriosclerosis obliterans, aortic disease, arrhythmia, heart failure, cardiomyopathy, myocarditis, pulmonary artery disease, valvular disease, adult congenital heart disease, hypertension, etc.

Clinical service and performance

Outpatient Clinic:
- Six examination rooms
- The total number of outpatient visitors was 39,881 in 2012.

Inpatient Care:
- Forty-six beds for the general ward and six beds for the Coronary Care Unit
- The total number of inpatients was 1,327 in 2012.
- Cardiac catheterization for emergency patients are available on a 24-hour basis.
- Providing the following advanced endovascular therapies: percutaneous coronary intervention (PCI) for ischemic heart diseases, percutaneous transluminal angioplasty (PTA) for peripheral artery diseases, catheter ablation therapies for arrhythmias, device therapies (pacemaker, implantable cardioverter defibrillator [ICD], and cardiac resynchronization therapy [CRT]), endovascular aortic repair (EVAR), transcatheter closure for atrial septal defect (AMPLATZER Septal Occluder), etc.
- The treatment results in 2012 were as follows:
  Three hundred eleven cases for PCI, 151 for PTA, 322 for catheter ablation, 56 for pacemaker therapy, 14 for ICD therapy, 8 for CRT, 26 for CRT-D, 22 for thoracic endovascular aortic repair, 47 for EVAR, and 4,852 for total cardiac rehabilitation (294 new patients).

Clinical research activities

Our department has conducted various clinical multicenter studies. The following are the details of parts of the studies:
- Coronary Revascularization Demonstrating Outcome Study in Kyoto (CREDO-Kyoto)—This is a multicenter long-term results/prognosis surveillance after coronary angioplasty (5-year surveillance in 9,877 patients who underwent their first PCI or CABG [Cohort Ⅰ study]) published in *Circulation* in 2008. The Cohort Ⅱ study of drug-eluting stents in 15,792 patients is currently ongoing.
- CAPITAL-RCT—This is a multicenter nonblinded randomized control trial performed to investigate the efficacy of beta-blockers in patients with ST segment elevation acute myocardial infarction (investigator-initiated clinical trial). The estimated number of registered patients is 1,300.
- KPAF registry—This is a multicenter prospective implantable cardioverter-defibrillator registry that started mainly in the Kansai area. Patients are currently being recruited.

Internal Medicine

Department of Gastroenterology and Hepatology

Director
Senior Lecturer
Hiroyuki Marusawa

Total care of the abdominal organs

The clinical practice of the department of gastroenterology and hepatology covers a broad range of abdominal organs, including the esophagus, stomach, duodenum, liver, biliary tract, pancreas, small intestine, and colon.
Our specialized field is categorized into the following four groups of disorders.
1. Multimodal therapy for hepatitis, cirrhosis, and liver cancer
2. Diagnosis and treatment using digestive endoscopy
   - Endoscopic hemostasis for gastrointestinal bleeding
   - Endoscopic dilatation for gastrointestinal stenosis
   - Endoscopic resection centered on endoscopic submucosal dissection for early-stage gastrointestinal cancers
   - Transpapillary diagnosis and treatment of biliary-pancreatic diseases with a side-viewing endoscope
   - Endoscopic diagnosis and treatment of small intestinal diseases with double-balloon and capsule endoscopy
3. Chemotherapy for advanced gastrointestinal and hepato-biliary-pancreatic cancers
4. Multimodal therapy of inflammatory bowel diseases (especially immunosuppressant therapy)

Main target diseases

Ⅰ. Benign disorders:
Esophageal varices, Gastroesophageal reflux disease, Esophageal achalasia, *Helicobacter pylori*-related gastritis, Gastric polyps, Duodenal polyps, Small intestinal polyps, Small intestinal angiectasis, Cholelithiasis (cholecystolithiasis, choledocholithiasis, intrahepatic cholelithiasis), Cholangitis, Cholecystitis, Primary sclerosing cholangitis, Acute pancreatitis, Chronic pancreatitis, Intraductal papillary mucinous neoplasm of the pancreas, Mucinous cystic tumor of the pancreas, Viral hepatitis, Liver cirrhosis, Autoimmune hepatitis, Fulminant hepatitis, Primary biliary cirrhosis, Ulcerative colitis, Crohn's disease, Behcet's disease, and Colon polyps

Ⅱ. Malignant disorders:
Esophageal cancer, Gastric cancer, Duodenal cancer, Cancer of the duodenal papilla, Bile duct cancer, Gallbladder cancer, Pancreatic cancer, Colon cancer, Small intestinal cancer, Gastrointestinal malignant lymphoma, and Gastrointestinal stromal tumor (GIST)

Clinical service and performance

Outpatients:
- The outpatient clinic consists of 14 clinicians, mainly gastroenterologists (including endoscopists) and medical oncologists.
- As for inflammatory bowel diseases and hepato-biliary-pancreatic diseases, specialized outpatient clinics are present.
- As for gastrointestinal and biliary-pancreatic cancers, a multidisciplinary treatment team (so-called "cancer unit") is present in the Sekitei Ward 1F.
- Outpatient clinicians are also in charge of a broad area of examinations including abdominal ultrasonography and digestive endoscopy in collaboration with the endoscopy unit.

Inpatients:
- We have 44 beds in the Sekitei Ward 7F with 4 treatment teams that consist of clinicians, residents, and inpatient staff (consisting of 4-5 persons per team).
- A chart conference for confirming the diagnosis and deciding the treatment plan is held weekly.
- As for gastrointestinal cancers, a specialized treatment team provides medical care in collaboration with the department of clinical oncology.

Clinical research activities

Our department participates in many clinical trials, including the following:
- A study comparing adalimumab monotherapy versus combination therapy with adalimumab and azathioprine for active Crohn's disease.
- A study of combination therapy with ganciclovir and apheresis for cytomegalovirus-infected patients complicated by ulcerative colitis.
- A study of adalimumab reintroduction therapy for initially adalimumab-refractory Crohn's disease.
- A multi-institutional phase Ⅱ study of photodynamic therapy using ME2906 and PNL6405EPG for patients with local failure after chemoradiotherapy for esophageal cancer (investigator-initiated clinical trial).
- A randomized controlled phase Ⅲ study comparing CF versus DCF versus CF-RT as neoadjuvant treatment for locally advanced esophageal cancer (JCOG1109).
- A multi-institutional study of disease-associated genes in patients with IgG4-related autoimmune pancreatitis.
- A multi-institutional prospective observational study of branch-type intraductal papillary mucinous neoplasms (IPMN).

Internal Medicine

Department of Respiratory Medicine

Director
Prof. MIchiaki Mishima

Providing patient-friendly medical treatment for pulmonary diseases

1. We aim to provide patient-friendly medical treatment.
2. We strive to offer the latest and best medication.
3. Since respiratory diseases show varying characteristics, our department has clinical research groups studying diseases such as interstitial lung disease, chronic obstructive pulmonary disease (COPD), chronic cough, asthma, sleep apnea syndrome, respiratory failure, respiratory tract infection, and lung tumors.
4. Trained experts comply with various patient requests from the outpatient service department as well as from hospitalized patients.
5. We provide special clinical treatment for COPD, chronic cough, interstitial lung disease, and sleep apnea, which are prevalent in Japan.

Main target diseases

COPD, asthma, chronic cough, interstitial lung disease, sarcoidosis, pulmonary tuberculosis, nontuberculosis pulmonary disease, pneumonia, respiratory failure*, sleep apnea*, and lung tumor† (particularly in cooperation with the *Department of Respiratory Care/Sleep Apnea and †Kyoto University Cancer Center)

Clinical service and performance

For outpatients, our highly specialized outpatient clinic provides treatment for various pulmonary diseases. We also provide a smoking cessation clinic. The total number of in-patients in this hospital was 43,284 in 2012; the highest number of patients was recorded in the Internal Medicine Department.

For inward service, our respiratory group has 63 beds at the fourth (4 beds for sleeping disorder patients) and fifth floors in the Sekitei wards, while there are 15 beds for tuberculosis on the first floor of the North ward. The total number of in-patients was 17,689 in 2012, with the highest number in the Internal Medicine department. Although these patients presented with various co-morbidities, the average admission period was kept within 12.1 days. A cooperative system was established with other units, including cooperation among the Department of Respiratory Care/Sleep Apnea, rehabilitation unit, infection control team, Cancer Center for Comprehensive Treatment against Lung Cancer, and the pulmonary surgical department for the evaluation and management of patients who are under consideration for lung transplantation. Cooperation systems have also been developed with regional hospitals and clinics in the community.

In each specialized area, experts have been trained to manage patients with difficult conditions that require highly specialized knowledge. Furthermore, we are developing guidelines, undertaking research projects with the Ministry of Health, Labour, and Welfare, and conducting multicenter clinical studies with the hope of contributing to the advances in the treatment and management of pulmonary diseases.

Clinical research activities and community healthcare services

- [OPC-6535 phase Ⅱ study for COPD patients with emphysema lesion, double-blind placebo control, parallel groups, and dose examination study among other international facilities][KHK4563 phase Ⅱ study for adult patients with uncontrolled asthma, double-blind placebo control, parallel groups, and dose-examination study][Three-arm Randomized Phase Ⅱ Study of the Maintenance of Pemetrexed, Bevacizumab, and Bevacizumab/Pemetrexed after induction chemotherapy with Bevacizumab/Pemetrexed/Carboplatin in Patients with Non-squamous Non-Small-Cell Lung Cancer][Multicenter Lymphangioleiomyomatosis Long Term Sirolimus Trial: MLLTS trial]
- July 2012, Academic lecture meeting at Nishigyou-ku Medical Association on the topic “Pathophysiology and treatment of COPD – GOLD update.” October 2012, Academic lecture meeting at Higashi Omi-ku Medical Association on the topic “Comprehensive treatment of asthma: raising awareness of chronic rhinosinusitis in asthma management”.

Internal Medicine

Department of Respiratory Care and Sleep Control Medicine

Director
Prof. Kazuo Chin

Specific treatment practices for sleep disordered breathing and respiratory care

(1) Outpatient clinic for Respiratory Care and Sleep Disordered Breathing (SDB) (Sleep Apnea) from Monday to Friday and Sleep Disturbance in Neurology on Monday (2) Contribution to the management of SDB patients with lifestyle-related diseases (hypertension, diabetes mellitus, heart failure, etc.) in cooperation with related departments (3) Contribution to forefront medicine through perioperative respiratory care (4) Prescribing home respiratory care using home oxygen therapy and noninvasive ventilation, including continuous positive airway pressure (CPAP), noninvasive positive pressure ventilation (NPPV), and adaptive servo-ventilation (ASV), for SDB patients with and without respiratory failure, and contributing to both home and community health care.

Main target diseases

Sleep apnea (obstructive, central and complex), SDB with neurological diseases, Respiratory failure with and without hypoventilation, Sleep disturbances related to hypersomnia, Periodic limbs movements, Restless legs syndrome, etc. and Respiratory care in the hospital including that of perioperative patients with respiratory complications.

Clinical service and performance

We manage the outpatient clinic for Respiratory Care and Sleep Disordered Breathing (SDB) (mainly Sleep Apnea) from Monday to Friday and Sleep Disturbance in Neurology on Monday. In total, we have more than 1,000 outpatients per month including more than 800 patients undergoing CPAP treatment. We cooperate with other departments for the management of patients with respiratory complications, including SDB. There were more than 300 patients in a year including those in the perioperative stage. We hope that such respiratory techniques aid in the development of advanced medical treatments thereby improving the overall outcomes of the patients in the hospital.

Our hospital is the only facility in Kyoto certified with an A by The Japanese Society of Sleep Research. Using 4 beds, we perform overnight polysomnography (PSG) for more than 550 cases annually and introduce CPAP, noninvasive positive pressure ventilation (NPPV), adaptive servo-ventilation (ASV), home oxygen therapies, etc. In addition, we introduce noninvasive ventilation (NPPV or ASV) for more than 300 patients with respiratory complications in a year, thereby contributing to the highly advanced medical treatment conducted at Kyoto University Hospital.

Two-day hospitalization is required for PSG and three for CPAP management from Monday to Friday. This contributes to the reduction in the days of hospitalization. Our institute adopts an attended-type PSG where special experts certificated internationally (RPSGT) or by The Japanese Society of Sleep Research attend to patients during the overnight PSG. This attended-type PSG is rarely performed in university hospitals. In 2011, we encountered about 300 cases of sleep apnea, 4 cases of narcolepsy, 6 cases of parasomnia, 4 cases of idiopathic hypersomnia, 4 cases of sleep-related movement disorder, and so on as well as an increased number of children with cases of PSG.

Clinical research activities

1) Nagahama Cohort Study
2) Comparison of Adaptive Servo Ventilation (Bipap® Auto SV Advanced) and Oxygen Therapy in Chronic Heart Failure Patients Complicated With Central Sleep Apnea
3) Prognosis in Patients With Chronic Respiratory Failure Receiving Domiciliary Noninvasive Positive Pressure Ventilation (NPPV)
4) Epidemiological Survey of Obesity Hypoventilation Syndrome
5) Effects of Antihypertensive Drugs in Patients With Hypertension and Obstructive Sleep Apnea (OSA)
6) Health Science Research (Comprehensive Research on Life-Style Related Diseases including Cardiovascular Diseases and Diabetes Mellitus) from the Japanese Ministry of Health, Labour, and Welfare “The efficacy and safety of Kampo (Japanese herbal) medicine, bofutsushosan, on metabolic syndrome: A randomized, double-blind, placebo-controlled trial” etc.

Internal Medicine

Department of Rheumatology and Clinical Immunology

Director
Prof. Tsuneyo Mimori

Practice of specialized medical care for rheumatic diseases/connective tissue diseases

Our department is one of the few departments of internal medicine specializing in connective tissue diseases in university hospitals in the Kansai region, and it provides medical care for connective tissue and rheumatic diseases as well as patient education throughout the Kinki district. Since connective tissue diseases are systemic disorders affecting systemic and multiple organs, our department actively cooperates with other departments for comprehensive medical care. In our department, we aim to apply achievements in basic studies to medical care. In particular, a specific sensitive autoantibody detection method (RNA immunoprecipitation) is routinely used for diagnosis, selection of treatment methods, and outcome prediction. Our department is characterized by: (1) medical care for systemic autoimmune and rheumatic diseases causing difficulty in diagnosis and treatment; and (2) diagnosis using autoantibodies and the development of treatment methods based on a new disease classification.

Main target diseases

Rheumatoid arthritis, systemic lupus erythematosus, mixed connective tissue disease, scleroderma, dermatomyosis and polymyositis, Sjögren's syndrome, vasculitis syndrome (Takayasu's arteritis, granulomatosis with polyangitis, polyarteritis nodosa, etc), adult-onset Still's disease, Bechçet's disease, antiphospholipid syndrome, polymyalgia rheumatica, IgG4-related disease, etc.

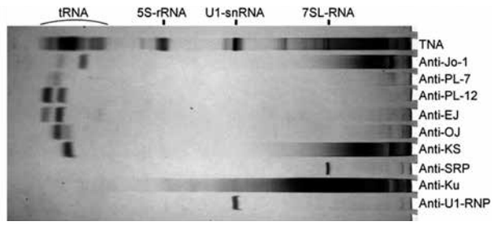
Clinical service and performance

Concerning the outpatient medical care system, the Rheumatology and Clinical Immunology Clinic is open from Monday to Friday (5 days per week), and 3–4 physicians perform medical services each day. In addition to this clinic, there is an outpatient clinic for new patients to take more detailed medical history and to reduce waiting time. Since our department is one of the few departments of internal medicine specializing in systemic autoimmune and rheumatic diseases in Western Japan, many patients are referred to our department by physicians in neighboring prefectures. The number of outpatients has been increasing annually and is presently 110 (mean) per day.

Concerning the inpatient medical care system, there are 32 beds on the ward. This number is small compared with the number of patients in the Kinki district, and the bed occupancy rate is constantly more than 90%. Medical care of each patient is performed by a group of three rheumatology physicians consisting of a junior resident, middle instructor (graduate student or senior resident), and chief instructor. A conference and professor's rounds are performed twice a week to determine treatment principles without delay in patients with severe disease or who are showing changes in pathological condition. In the fiscal year 2012, the annual number of inpatients was more than 300. Since diagnosis and treatment often require more time due to the characteristics of these diseases, the mean hospitalization period is long (26.0 days).

Advanced medical technology

In the diagnosis of systemic autoimmune and rheumatic diseases, disease-specific autoantibodies are often useful for diagnosis, disease classification, and the evaluation of disease activity. In our department, we perform autoantibody analysis using RNA immunoprecipitation as our original method and protein immunoprecipitation for diagnostic assistance, disease classification, outcome prediction, and the determination of treatment principles. The identification of autoantibodies is extremely useful for diagnosing inflammatory myopathy and predicting outcomes and complications. It is also useful for determining treatment principles for rapidly progressing interstitial pneumonia and predicting complications in malignant tumors. For these reasons, we also receive many examination requests from other hospitals in Japan.



Analysis of autoantibodies using RNA immunoprecipitation

Internal Medicine

Department of Primary Care and Emergency Medicine / Emergency Department

Director
Prof. Kaoru Koike

Searching for new systems in emergency medical care based on promoting the advanced technology

Taking advantage of the strengths of the university hospital, we have established this emergency medical care system based on the advanced medical technology, and we are promoting medical collaboration between related departments on the project to ensure optimal results in a variety of situations (e.g. severe trauma, emerging infectious diseases, organ transplant medical care, burns, sepsis, obstetric emergency, and emergency medical care for the elderly). Additionally, we are officially participating in the DMAT (Japan Disaster Medical Assistance Team), which focuses on medical relief work in disaster medical care. Thus, we have established a disaster medical assistance system for large-scale disasters. We have already dispatched emergency medical assistance in Tohoku area during Great East Japan Earthquake.

Main target diseases

Emergency medical conditions

Clinical service and performance

- Having one professor, three lecturers, four assistant professors, and two medical staffs (total of 10 full-time clinicians)
- Three emergency room nurses and three exclusive clerks are allocated to the emergency room.
- Since 2008, started inpatient care for acute diseases such as trauma, poisoning, infectious diseases, and cerebrovascular disease (with 6 beds for general and 2 beds for SCU)
- During 2012, 8,456 patients visiting in our emergency room, in which ambulance transport volume was 2,939 units
- The number of patients admitted from the department of 2,111 corresponding to about 10% of all hospitalized patients in our hospital
- Starting in-hospital service (five general beds and two SCU beds) from 2008 and providing service on Stroke Care Unit (SCU) by participating the stroke clinic
- Expanding to the third level emergency medical care for serious cases

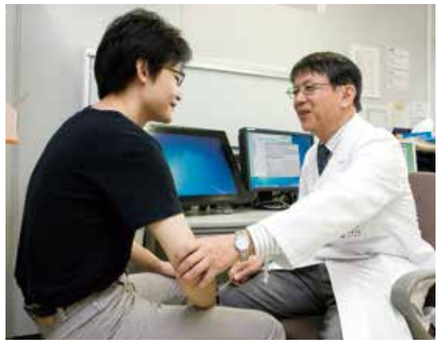
Clinical research activities

- Development of a new diagnostic method using NMR (nuclear magnetic resonance)
- Multicenter clinical trials on the usefulness of regional cerebral oxygen saturation (rSO_2) measurement, on mechanical external compression in out-of-hospital cardiac arrest patients, and on the evaluation methods of mild traumatic brain injury
- Time studies in the emergency department
- Autopsy imaging studies using MRI

Internal Medicine

Department of Neurology

Director
Prof. Ryosuke Takahashi



Detailed medical care for various nervous system diseases ranging from numbness to dementia

With the rapidly growing number of elderly individuals in Japan, the number of patients with age-related neurological diseases such as stroke, dementia, and neurodegenerative diseases is dramatically increasing. Proper treatment of patients with neurological diseases requires precise diagnoses based on clinical evidence. Several faculties of our department are involved in establishing the guidelines for treatment of Parkinson disease and epilepsy. Our goal is not only to treat current patients, but also to contribute towards the welfare of future patients through medical research.

Main target diseases

Cerebral vascular disease (cerebral infarction), Alzheimer's disease, other conditions presenting with dementia, Parkinson's disease, Parkinson syndrome, epilepsy, spinocerebellar degeneration, motor neuron disease (amyotrophic lateral sclerosis), multiple sclerosis, dystonia, peripheral nerve disease, muscle disease, myasthenia gravis, headache, encephalitis, myelopathy (spinal cord disorder), and other diseases associated with neurological complications

Clinical service and performance

Outpatients: We aim to provide clinical care for various diseases of the brain, spine, peripheral nerves, and muscles. Our board-certified neurologists examine 90 patients per day on an average.

Inpatients: We offer a facility with 40 beds (including 32 beds in the fourth floor area common between the departments of Plastic and Reconstructive Surgery and Dermatology in the North ward, six beds in the sixth floor area common between the Department of Gynecology and Obstetrics, and two beds in the seventh floor area common between the Department of Otorhinolaryngology in the South ward).

Number of Inpatients in Department of Neurology (Annual data)

	2010	2011	2012
Ischemic cerebrovascular disease	152	95	177
Intracerebral bleeding	4	0	12
Epilepsy/convulsion	153	166	255
Dementia	33	30	48
Parkinson's diseases/similar disorders	189	171	179
Motor neuron disease	40	56	46
Spinocerebellar degeneration	54	58	27
Demyelinating disease including disseminated sclerosis	14	46	46
Infections including those associated with encephalitis	43	26	14
Spinal cord disease	40	21	16
Peripheral neuropathy	46	70	44
Muscular disease	40	56	18
Myasthenia gravis	43	56	36
Endocrine/metabolic diseases	5	2	18
Total (other diseases are included)	962	940	936

Advanced medical technology

We have initiated the following collaborative studies:

- In collaboration with the Department of Neurosurgery and Human Brain Research Center (HBRC), we are analyzing continuous scalp EEG monitoring and subdural EEG recording data in order to identify the epileptic focus and examine cortical functioning around the focus.
- In collaboration with HBRC, we are conducting/have conducted a transcranial magnetic stimulation study to evaluate the pathology of the pyramidal tracts in patients with conditions such as motor neuron disease and multiple sclerosis.

Internal Medicine

Epilepsy & Movement Disorders

Director
Prof. Akio Ikeda

Practicing a specialized care in epilepsy and movement disorders

Upon an interactive and mutual collaboration with the Departments of Neurology, Neurosurgery, and Pediatrics, the outpatient neurology clinic provides patients with medical care specializing in epilepsy and movement disorders. As a tertiary care institute for epilepsy in the Kinki region, we provide all of the patients with comprehensive epilepsy services under close collaborations among the relevant departments to make a diagnosis of epilepsy, and offer both medical and surgical treatments. We also collaborate and cooperate with nearby clinics, hospitals and large institutes with the aim of setting up a hospital-clinic collaboration for epilepsy care, especially in the Kyoto-Shiga region.

Main target diseases

We care patients with general neurological diseases, including both paroxysmal and movement disorders. Specifically, we focus on syncope, seizure, and a variety of epileptic syndromes (idiopathic and symptomatic generalized epilepsy, and partial epilepsy), as well as involuntary movements, myoclonus (convulsion), tremors (shaking), abnormal movements of Parkinson-related diseases, and dystonia, among others.

Clinical service and performance

Outpatients: Neurology specialists who are certified by the Japan Epilepsy Society and Japanese Society of Clinical Neurophysiology (especially EEG section) provide outpatient care specializing in epilepsy and movement disorders. We treat over 1,600 patients with epilepsy annually on an outpatient basis. Approximately 200 patients are referred to us from hospitals and clinics throughout the Kinki region, especially in the Kyoto-Shiga region. We provide precise diagnosis, choose the most suitable treatment plan, and make counter-referrals.

Inpatients: Under a joint situation with the neurology department, we conduct a high quality care for 200 patients with epilepsy and movement disorder per year to perform preoperative evaluations and drug management. As a university hospital, we make a diagnosis and conduct treatments using highly advanced medical technology, such as long-term video EEG monitoring, ultra-high field MRI, various types of nuclear scanning tests, neuropsychological tests, magnetic encephalography, and immunological investigation, etc.

Two units of long-term video EEG monitoring (Epilepsy Monitoring Unit, or EMU) are installed in the Neurology ward to make a diagnosis of epilepsy and perform evaluations prior to surgical treatment of refractory epilepsy (epileptic focal resection). Since 1992, we have established a system of cooperation with the Department of Neurosurgery and other relevant clinical departments to perform tests on patients for whom epilepsy surgery is indicated. We have performed over 190 cases of epilepsy surgery, and obtained favorable results in terms of seizure control and improving the patients' postoperative QOL.

We also cooperate with the Department of Diagnostic Radiology, and the Human Brain Research Center, which are capable of offering various specialized tests, as well as the Psychiatry Department, Rehabilitation Unit, and Central Clinical Laboratory. We hold a joint case study conference once a month on a regular basis with the relevant clinical departments. We discuss diagnostic problems and indications for surgery among various clinical issues, and offer comprehensive epileptic care as a tertiary specialized medical institution.

Clinical research activities

The following wide variety of clinical studies are being carried out

(1) development of presurgical evaluation methods for refractory partial epilepsy (wide-band EEG analysis, analysis of epileptic neuronal network, simultaneous EEG-fMRI recording, etc.)
(2) promotion of epilepsy surgery and research on higher brain functions and its plasticity under epileptic conditions
(3) comprehensive study on the diagnosis and treatment of autoimmune smoldering encephalitis and epilepsy
(4) development of new methods for treating epileptic seizures by means of clinical neurophysiological techniques (neurofeedback methods, etc.)
(5) elucidation of the pathophysiology of movement disorders such as myoclonus epilepsy, and development of new treatment approaches
(6) new approaches in pathophysiology of epileptic and movement disorders by means of iPS cell system

Internal Medicine

Department of Nephrology

Director
Prof. Motoko Yanagita

Compassionate, comprehensive, and state-of-the-art care for every patient with kidney disease

Our mission is to offer comprehensive clinical services in nephrology ranging from the primary prevention of kidney disease to the management of end-stage renal disease to provide better outcomes with fewer complications. Therefore, our division provides safe and cutting-edge care to patients with abnormalities on urine screening tests as well as those receiving hemodialysis, peritoneal dialysis, or a kidney transplant. We also offer several clinical services for the consultation of kidney disease in critical care medicine or during the course of cancer treatment. We also convene information sessions with our patients as educational programs to inform them about the treatments.

Main target diseases

Our clinical activities span the entire spectrum of kidney health and disease and include acute kidney injury, primary glomerulonephritis, nephrotic syndrome, tubulointerstitial nephritis, nephrosclerosis, inherited renal diseases, diabetic nephropathy, and secondary glomerulonephritis associated with connective tissue disease as well as systemic vasculitis, secondary hypertension, and acid-base and electrolyte disorders.

Clinical service and performance

The cumulative total number of outpatients in 2012 was 9,594, including 315 patients in the peritoneal dialysis unit, 167 in the renal transplantation unit, and 191 in the kidney disease educational programs. We also had close to 350 inpatients in 2012 consisting of 47 cases of native kidney biopsy, and 78 cases of vascular access construction. Our members also covered the artificial kidney units, managing over 4,000 dialysis sessions in 2012.

Number of inpatients in the second half of 2012 (Total = 189 patients)		Number of patients with biopsy in the second half of 2012 (Total = 31 patients)	
Management of acute or chronic kidney injury	61	Secondary glomerulonephritis associated with collagen vascular disease	8
Arterio-Venous (AV) fistula	27	IgA nephropathy	6
Reconstruction of AV fistula	14	ANCA-associated vasculitis	4
Infectious disease complicated by Chronic Kidney Disease (CKD)	34	Membranous nephropathy	3
Induction of hemodialysis	24	Transplant related renal damage	3
Induction of peritoneal dialysis	1	Minimal change nephrotic syndrome	2
Protocol steroid pulse therapy for IgA nephropathy	18	Diabetic nephropathy	2
Admission for CKD education	8	Malignant hypertension	1
Admission for peritoneum equilibration test	2	IgG4-related kidney disease	1
		Renal sarcoidosis	1

Clinical research activities

Our division is actively involved in clinical research that translates to advances and improvements in clinical care. Examples of our clinical research activities include studies of factors influencing acute or chronic kidney disease in patients with liver transplantation, a descriptive study of cancer treatment for patients on hemodialysis, and the establishment of kidney injury surveillance system in cooperation with the medical informatics group of Kyoto University Hospital.

Internal Medicine

Department of Clinical Oncology

Director
Prof. Manabu Muto

The best clinical practice for all cancer patients

This department plays several important roles in the clinical practice of the Kyoto University Hospital Cancer Center. One is the systematic management of antineoplastic drug treatment at the outpatient division of chemotherapy via collaboration with pharmacists and nursing staff. Another is the appropriate organization of the functions of the University Cancer Center in conjunction with cancer-related departments. In cancer treatment, a multidisciplinary approach that combines surgery, chemotherapy, and radiotherapy is also very important to achieve excellent outcomes; for this, wide-ranging medical knowledge and skills are required. To improve treatment results in clinical practice, we administer multidisciplinary treatment in cooperation with relevant departments.

Main target diseases

Gastric cancer, colon cancer, esophageal cancer, pancreatic cancer, gallbladder cancer, lung cancer, head and neck cancer, primary unknown cancer, and rare cancers

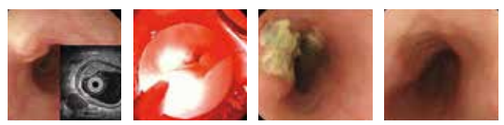
Clinical service and performance

The Department of Clinical Oncology is a new department at the Kyoto University Hospital (KUHP) that was established in April 2013. After the establishment of the Department of Therapeutic Oncology at the Kyoto University Graduate School of Medicine in September 2012, this department and the Department of Clinical Oncology and Pharmacogenomics constituted the Department of Clinical Oncology of the KUHP. It includes nine staff members who are specialists in areas such as gastrointestinal cancer, hepatopancreatobiliary cancer, lung cancer, and head and neck cancer, among others. Our medical policy is to play a main role in the Kyoto University Cancer Center and to provide all aspects of best practice and seamless medical care for all patients. In addition, rare cancers and cancers of unknown primary origin are also managed in our department in close cooperation with other departments.

Outpatient care is provided mainly at the outpatient division for chemotherapy, which is located on the first floor of the Sekitei building. The admitting care unit consists mainly of a multidisciplinary cancer treatment ward located on the second floor of the Sekitei building; in addition, we provide highly specialized cancer drug therapy in cooperation with the departments of respiratory medicine and head and neck surgery.

Clinical research activities

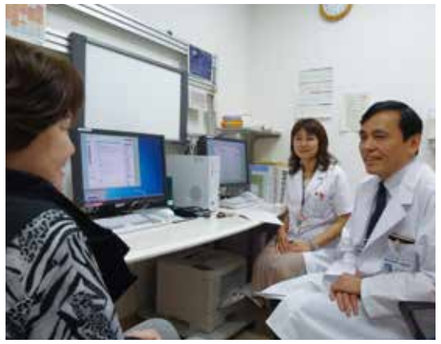
Our research activities on cancer are wide ranging, from the mechanism of cancer development, early diagnosis, new therapeutic modalities, and new therapeutic anticancer drugs to palliative treatment. One of our main research objectives is to clarify the molecular mechanism of alcohol-related esophageal carcinogenesis to develop an effective preventive treatment. Other research themes are the development of a curative therapeutic strategy based on new concepts, personalized treatment according to molecular biology aspects, and effective/safe chemotherapy for patients with complications, especially renal dysfunction. We are currently conducting an investigator-initiated multicenter clinical trial as the primary investigator.



Internal Medicine

Department of Palliative Medicine

Director
Prof. Satoru Tsuneto



Treating patients' pain appropriately, and supporting those with suffering firmly

We carry out activities to improve patients' Quality of Life (QOL), by appropriately assessing and managing a variety of problems related to the physical and psychological symptoms that patients suffer on account of their diseases, such as pain, anorexia, nausea/vomiting, dyspnea, fatigue, anxiety, depression, delirium, and insomnia.

Main target diseases

Cancer patients with physical and psychological symptoms (non-cancer patients suffering from physical symptoms are also treated on a limited basis)

Clinical service and performance

Hospitalized care:
We treat cancer patients with physical and psychological symptoms, and work with them as a Cancer Support Team (Palliative Care Team). The Cancer Support Team is comprised of physicians in charge of physical symptoms (palliative care physicians), physicians in charge of psychological symptoms (psychiatrists), nurses (those specializing in cancer care and palliative care-certified nurses), pharmacists (palliative pharmacotherapy-certified pharmacists), and medical social workers, among other professionals. After receiving a request form, we try to treat patients at the earliest, and offer continuous treatment if deemed necessary. To the extent possible, we accept requests for supporting the patients' families and providing assistance at the place of care. Additionally, we treat non-cancer patients with physical symptoms on a limited basis.
We received requests from a total of 422 people in fiscal 2013. These requests were motivated by (1) pain (36%), (2) anxiety and depression (29%), (3) insomnia (7%), (4) delirium (5%), (5) lethargy (4%), (6) nausea/vomiting (4%), and (7) abdominal distension (2%).

Outpatient care:
We treat cancer patients with physical and psychological symptoms who are undergoing treatment in our hospital's outpatient clinical departments. Patients who received treatment by the Cancer Support Team during their hospitalization will remain under their care even after discharge, as needed. We plan to accept requests from other medical institutions, as deemed appropriate.

Measures related to regional medicine

We strive to increase collaboration with the region's palliative care teams, outpatient palliative care, and palliative care wards. Our future activities may include (1) screening patients' physical and psychosocial pain, (2) securing emergency palliative care beds (establishing an emergency hospitalization setup), (3) providing counseling to cancer patients, (4) providing assistance for specialized consultations, (5) assisting in regional collaborations, (6) offering education and training, and (7) integrating and analyzing healthcare information. We have also launched Kyoto University Society for Palliative Medicine. We hold lectures and case conference meetings on palliative care regularly, and offer a forum for education, training, and research.

Surgery

Department of Gastrointestinal Surgery

Director
Prof. Yoshiharu Sakai

Patient-friendly and sophisticated endoscopic surgery

The Department of Gastrointestinal Surgery in Kyoto University Hospital works toward incorporating endoscopic surgery (thoracoscopic or laparoscopic techniques) into the treatment of diseases of the esophagus, stomach, and small and large intestine to standardize surgical techniques. Endoscopic surgery is a minimally invasive procedure that can allow for smaller incisions as well as highly precise operations based on the understanding of detailed clinical anatomy within the magnifying view of the operative field. Robot-assisted surgery was introduced in this department in September 2011 to make surgery more precise and minimally invasive. We choose treatment plans after cross-sectional conferencing with the Outpatient Cancer Care Unit and the Departments of Radiology and Diagnostic Pathology. Our team strives to provide optimum care through providing complete informed consent to individual patients.

Main target diseases

- Esophageal diseases (esophageal cancer, achalasia, reflux esophagitis)
- Gastric diseases (gastric cancer and gastric ulcer)
- Intestinal disorders (duodenal ulcer, colon and rectal cancer, ulcerative colitis, Crohn's disease, pseudomyxoma, ileus)
- Others; inguinal hernia, gastrointestinal stromal tumor (GIST)

Clinical service and performance

Our team consists of one professor, one associate professor, two lecturers, and five assistant professors. All of these members are board-certified surgeons in gastroenterology, and six of them are certified endoscopic surgery specialists. We offer the following outpatient services:

- First clinic visits for diseases of the gastrointestinal tract (esophagus, stomach, small and large intestine) each weekday
- A treatment program with proper informed consent after investigation and joint conference with physicians of the internal medicine, surgery, and radiology departments
- Special outpatient services include a stoma clinic for patients after colostomy (every Wednesday with care by certified nurses) and a clinic for patients with esophageal cancer (every Wednesday)

A total of 499 operations were performed under general anesthesia in 2012. Table 1 shows details of the operations in our department, all of which were endoscopic surgeries. We developed an original endoscopic procedure and work toward promoting it to other facilities. The overall incidence of perioperative complications is comparative to those of other advanced medical care centers. Such results have been published in domestic or overseas medical journals.

Table 1. The number of major surgeries and endoscopic surgeries performed in the Department of Gastrointestinal Surgery of Kyoto University Hospital in 2012

	Number of cases (n)	Endoscopic surgery rate (%)
Esophagectomy	25	25(100%)
Distal gastrectomy (including pylorus-preserving distal gastrectomy)	52	51(98.1%)
Total or proximal gastrectomy	41	39(95.1%)
Colectomy	93	70(75.3%)
Anterior resection of the rectum	58	51(87.9%)
Abdominoperineal resection of the rectum	7	6(85.7%)

Advanced medical technology

Our department introduced robot-assisted surgery in September 2011. This surgical system allows us to perform less stressful and more delicate procedures than the existing endoscopic surgeries. Moreover, this system enables us to provide safe and minimally invasive surgery because of the additional information provided by the three-dimensional images.

Surgery

Department of Breast Surgery

Director
Prof. Masakazu Toi

Practice of multidisciplinary approach and personalized medicine

The appropriate combination of local therapy (surgery and radiation therapy) and systemic therapy (chemotherapy, molecular targeting therapy and endocrine therapy) leads to improved outcomes in patients with operable breast cancer. Systemic therapy in combination with local therapy (total mastectomy, partial mastectomy and radiation therapy) is decided based on cancer spread and characteristics considering the patients' preferences.
A treatment option is selected from validated treatments taking account of the results of the latest clinical trials.
We cooperate with affiliated hospitals and aim to provide proficient care and treatment suited for each individual patient.

Main target diseases

Breast cancer, other breast tumors (e.g. phyllodes tumor, fibroadenoma), nipple discharge, axillary lymph node swelling and fibrocystic disease

Clinical service and performance

The department of Breast Surgery was established in April, 2006 and the professor assumed office in February, 2007.
The weekly case conference includes the outpatient oncology unit and the departments of radiation oncology and image-applied therapy, diagnostic imaging and nuclear medicine and diagnostic pathology. In order to improve the prognosis and quality of life (QOL) of the patients, a multidisciplinary approach is taken in cooperation with the departments of plastic and reconstructive surgery, gynecology and obstetrics, medicine and clinical science and orthopaedic surgery.

Surgery is performed in the Day Surgery Unit (DSU) with a short stay program (3 to 7 days) according to comorbidity, the surgical option and the patients' preferences. In 2012, partial mastectomy was performed for 78 patients and mastectomy was performed for 59 patients with breast reconstruction for 11 patients.
Chemotherapy is administered in the Outpatient Oncology Unit. The first cycle is given during a 1 week stay program. The following cycles are given every 1 to 3 weeks in the outpatient clinic taking care with the regimens and adverse events.

Advanced medical technology

Comparison of the indocyanine green fluorescence (ICG) and radioisotope methods in detection of sentinel lymph nodes for less invasive and more efficient axillary management
Adjuvant Chemotherapy Trial of S-1 for ER-positive and HER2-negative breast cancer (POTENT)
Study on activation of the immune system and improvement of the treatment effect by bisphosphonates
Algorithms predicting axillary lymph node metastasis in primary breast cancer and predicting the treatment response to neoadjuvant chemotherapy
Study on breast cancer screening and recurrence prediction by circulating tumor cells (CTCs)

Surgery

Department of Hepatobiliary Pancreatic Surgery and Transplantation

Professor
Shinji Uemoto

Director
Associate Professor
Toshimi Kaido

Leading institute in the field of hepatobiliary pancreatic surgery and transplantation

Our department was established in 2006 as a division specializing in hepatobiliary and pancreatic surgery and transplantation surgery. We perform 60–80 liver transplantations annually. Many foreign patients visit our department, which is well known worldwide as a "mecca" of liver transplantation.

Main target diseases

Liver disease (primary liver cancer, metastatic liver tumor), biliary disease (gallstones, cholangiocarcinoma), and pancreatic disease (pancreatic cancer, intraductal papillary mucinous neoplasm, mucinous cystic neoplasm, acute pancreatitis, chronic pancreatitis, neuroendocrine tumors)
Liver failure requiring liver transplantation (liver cirrhosis associated with hepatitis C and B, alcoholic liver cirrhosis, hepatocellular carcinoma (HCC), biliary atresia, acute fulminant hepatitis, primary biliary cirrhosis, primary sclerosing cholangitis, autoimmune hepatitis, etc.)

Clinical service and performance

The Outpatient Division is open daily from Monday through Friday. All hepatobiliary and pancreatic diseases are treated at our department. Patients who require liver transplantation may consult our coordinators, who will arrange appointments for them.
Our department has excellent outcomes with liver transplantation. For HCC, we apply the Kyoto criteria for the indications for liver transplantation. The 5-year survival rate of patients with HCC after liver transplantation is as high as 86%, and the 5-year relapse ratio is only 4%. We carry out approximately 70 cases of liver transplantation per year.

Clinical research activities

The ongoing clinical trials at our department include:
1) Robot-assisted pancreatic resections performed with the da Vinci S Surgical System
2) Adjuvant chemotherapy with gemcitabine and polysaccharide-K (PSK) for pancreatic cancer (phase-Ⅱ)
3) Adjuvant therapy for resectable biliary cancer
4) Adjuvant selective-arterial chemotherapy (phase-Ⅲ)
5) Immuno-nutrition before and after liver transplantation
6) Adjuvant chemotherapy with gemcitabine after curative resection of biliary cancer (phase Ⅰ/Ⅱ)
7) Gemcitabine plus S-1 combination therapy (GS therapy) for unresectable biliary cancer (phase Ⅱ)
8) Randomized comparative study between the efficacy of cisplatinum-TACE and epirubicin-TACE for multiple liver cancer
9) Gemcitabine/cisplatinum/S-1 therapy for unresectable biliary cancer (phase Ⅰ/Ⅱ)

Surgery

Department of Pediatric Surgery

Professor
Shinji Uemoto

Director
Associate Professor
Hideaki Okajima

Pediatric surgical care for hernia to liver/small intestine transplants

The Department of Pediatric Surgery was established at the Kyoto University Hospital in April 2006. Since then, we have provided a wide range of surgical care for pediatric disorders and steadily achieved satisfactory results such as an increased number of pediatric and neonatal surgeries. In 2010, our department was re-certified as a designated facility by the Japanese Society of Pediatric Surgeons. Our surgical care is mainly characterized by liver transplants for the treatment of severe, childhood hepatobiliary diseases (e.g., biliary atresia and metabolic diseases). In addition, our program of small intestine transplant from brain-dead donors was restarted in 2009. We will strive to widely perform liver/small intestine transplants in children, surgeries in newborns, including laparoscopic surgeries, as well as surgeries for tumors.

Main target diseases

Congenital esophageal atresia, congenital duodenal atresia, congenital small intestinal atresia, anorectal malformations (anal atresia), malrotation of the intestine, short bowel syndrome, gastroesophageal reflux, ileus, Hirschsprung disease, biliary atresia, congenital biliary dilatation, Alagille syndrome, progressive familial intrahepatic cholestasis, metabolic diseases (e.g., Wilson disease and urea cycle abnormality, including OTC deficiency), liver cirrhosis, acute liver failure, groin hernia, umbilical hernia, undescended testis, ovarian cysts, omphalocele, gastroschisis, pectus excavatum (funnel chest), pulmonary sequestration, cystic adenomatoid malformation, hepatoblastoma, neuroblastoma, teratoma, nephroblastoma, and rhabdomyosarcoma

Clinical service and performance

For outpatients:
- An outpatient clinic for first-visiting of all of disorder, in the Surgery ward on two weekdays (Tue. and Thu.)
- Coordination for liver/small intestine transplant in cooperation with the recipient coordinator at the Transplantation Information Center at the time of the first consultation and follow-up

For inpatients:
- A capacity of 11 beds at the North Ward 3F
- Performing childhood liver and small intestine transplants: management/investigations in the ICU immediately after surgery and the North Ward afterwards
- Neonatal management in the NICU by surgical specialists for congenital disorders (including congenital esophagus atresia, congenital duodenal atresia, congenital small intestine atresia, anorectal malformations [anal atresia], omphalocele, gastroschisis, congenital diaphragm hernia, Hirschsprung disease, and malrotation of the intestine)
- Performing surgeries for childhood solid malignant tumors (including hepatoblastoma, neuroblastoma, malignant teratoma, nephroblastoma, and rhabdomyosarcoma) that were treated by a pediatric oncologist at the Department of Pediatrics.

Clinical performance

Number of surgeries in the Surgery Unit	
Transplant related (living donor liver transplantation)	19
Cases in the NICU (esophageal atresia, diaphragm hernia repair, etc.)	13
Tumor related	9
Hepatopancreatic diseases (e.g., congenital biliary dilatation)	3
Laparoscopic surgeries (laparoscopic fundoplication)	2
Airway/respiratory surgeries (e.g., pulmonary sequestration)	5
Others	16
	Total67
Number of surgeries in the Day Surgery Unit	
Inguinal hernia repair, etc.	Total34

Community healthcare services and advanced medical technology

We closely collaborate with regional clinics as follows:
- Taking patients referred from the regional pediatric clinics as well as patients who need liver transplants from all over the country
- Organizing workshops and seminars for pediatric surgery once in three months to exchange information and improve the care level
- Training medical staff in the two facilities registered as educational institutions by the Japanese Society of Pediatric Surgeons

We also promote the performance of clinical studies as follows:
- Clinical study of small intestine transplants from brain-dead donors, a highly advanced medical technology, for the treatment of intestinal failure
- Performing multicenter joint studies to establish the technique of small intestine transplants
- To develop new diagnostic methods for progressive familial cholestasis and benign repetitive cholestasis

Department of Ophthalmology and Visual Sciences

Director
Prof. Nagahisa Yoshimura

Best visual performance with state-of-the-art ophthalmic care

Since there are a variety of ophthalmological problems, it is not easy to cover all of these diseases when providing the highest degree of medical care. Under these circumstances, the Department of Ophthalmology of Kyoto University takes pride in offering the highest medical services for mainly retinal/vitreous disorders and glaucoma with an abundance of successfully treated patients. In such diseases, our ophthalmologists actively introduce cutting-edge medical devices and provide accurate diagnosis and effective treatment. Our outpatient clinics specialize in retinal, optic nervous, corneal, and lacrimal disorders as well as strabismus. Of the special outpatient clinics, the clinic for macular disorders addresses advanced care programs such as a custom-made treatment by evaluating the relationship of genetic background and photodynamic therapy (PDT)/vascular endothelial growth factor (VEGF) therapy for age-related macular degeneration.

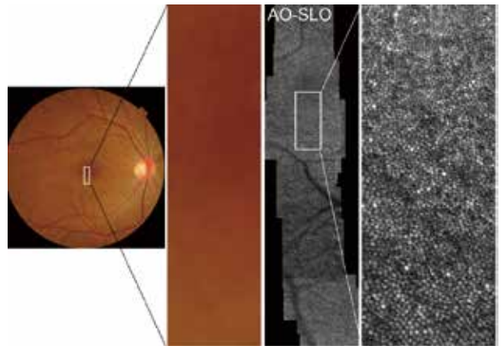
Main target diseases

Cataract, glaucoma, retinal detachment, diabetic retinopathy, age-related macular degeneration, uveitis, inherited retinal diseases, optic neuritis, squint, amblyopia, retina vein obstruction, high myopia, and nasolacrimal duct obstruction.

Clinical service and performance

Outpatients:
- Having general outpatient clinics (for first-visiting and revisiting) from Monday to Friday
- Providing various special outpatient clinics for the following disorders: glaucoma, corneal disorders, diabetic retinopathy, retinopathy of prematurity, strabismus/amblyopia, optic nervous disorders, macular disorders, uveitis, retinal circulation, retinal degeneration, and lacrimal disorders
- Care unit for macular disorders specializing in age-related macular degeneration, which may be increased in the future
- Total number of outpatients in 2012 was 47,519 with first-visiting outpatient of 3,463 (first-visiting patient rate; 7.3% and referred patient rate; 74.3%).

Inpatients:
- Having a 49-bed capacity
- Total annual number of inpatients was 15,282 with a mean hospital stay of 8.04 days.
- Total number of surgeries performed of 1,358 (of these, surgeries for retinal/vitreous disorders account for a little less than 40%)
- Providing PDT and anti-VEGF intravitreal injection for macular disorders



Imaging of photoreceptor cell by adaptive optics scanning laser ophthalmoscopy

Clinical research activities

In our department, the following clinical trials are currently in progress:
1) VEGF Trap-Eye in Choroidal Neovascularization Secondary to Pathologic Myopia (mCNV) (Myrror) NCT01249664
2) Japanese Safety Study of VEGF Trap-Eye in DME (Diabetic Macular Edema) (VIVID-Japan) NCT01512966
3) Phase Ⅲ Efficacy and Safety Clinical Study of UF-021 for Treatment of Retinitis Pigmentosa

Department of Obstetrics and Gynecology

Director
Prof. Ikuo Konishi

Sophisticated medical care for women throughout life

The Department of Obstetrics and Gynecology in Kyoto University Hospital offers medical care for women throughout life. There are three major specialized fields: gynecologic oncology, perinatal care and reproductive medicine. We also offer the special outpatient clinic for adolescence and menopause. We believe, in clinical practice, the individualized care through close counseling with patients, full examination and conference is most important, according to the concept "Each patient has different disease process, even if they have same disorders". We serve the best treatment after informed consent in consideration of patient's social background and needs. Especially for patients with gynecological malignancies, we provide a comprehensive pathologic diagnosis through the regular microscopy conferences with gynecological pathologists (twice a week) and imaging conferences with radiologists (once a week). Recently, there have been many patients with early stage of malignancies who want fertility preservation. We will meet such their expectations to the best of our ability. For advanced or recurrent malignancies, our team provides radical operations in collaboration with other surgical departments as well as chemotherapy and/or radiotherapy for improving patient's QOL. For perinatal and reproductive cares, please refer to the section of "Department of Maternal and Perinatal Care" in this guidance.

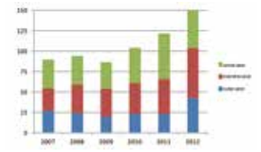
Main target diseases

Uterine cervical cancer, endometrial cancer, ovarian cancer, benign ovarian tumor, uterine myoma, vaginal cancer, tubal cancer, peritoneal cancer, endometriosis, adenomyosis, sexually transmitted disease, salpingitis, PID, contraception, amenorrhea, dysmenorrhea (menstrual pain), premenstrual syndrome, anorexia nervosa, premature menopause, menopausal disorders, prolapse of uterus and osteoporosis

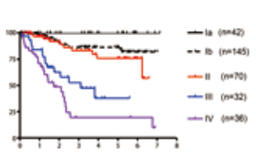
Clinical service and performance

In recent years, there has been a sharp increase of patients who are referred to our department. We use highly advanced medical technologies, e.g. laparoscopic surgery with pelvic lymph node dissection for endometrial cancer and robot-assisted laparoscopic (da Vinci) surgery for cervical cancer. Our team has gained more excellent survival rates of cervical, endometrial, and ovarian cancer underwent surgery compared with those of other facilities in Japan and overseas.

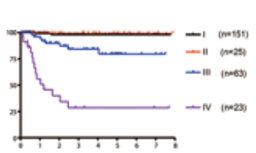
Change in number of patients with gynecologic cancer



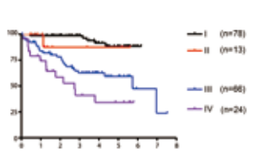
Survival rate in patients with cervical cancer



Survival rate in patients with endometrial cancer



Survival rate in patients with ovarian cancer



Clinical trial activities

We have been performing various types of clinical studies as follows:

- Phase Ⅱ trial of immunotherapy with anti-PD-1 antibody in advanced/relapsed, platinum-resistant ovarian cancer as an investigator initiated trial from September 2011 (now in progress)
- "Phase Ⅱ study of adjuvant chemotherapy with Irinotecan (CPT-11) plus Nedaplatin (NDP) for stage ⅠB2 or ⅡA cervical cancer with lymph node metastasis" (JGOG1067) by Japanese Gynecologic Oncology Group (JGOG)
- "Non-randomized investigational study of modified total hysterectomy for stage ⅠB1 of cervical cancer with a tumor diameter of 2 cm or less" (JCOG1101) by Japan Clinical Oncology Group (JCOG)

Department of Pediatrics

Director
Prof. Toshio Heike

Future-oriented pediatric care for and with children

The Department of Pediatrics in Kyoto University covers almost the entire spectrum of pediatric diseases. Pediatric cardiologists, endocrinologists, hemato-oncologists, immune-allergists, neurologists, neonatologists, and child psychologists attend to both inpatients and outpatients. Specialized co-medical staff, such as social workers and transplantation coordinators, help treat patients. In the pediatric ward, malignancies, immune-disorders, congenital cardiac diseases, and epilepsy are the most common diseases. We also treat patients in the neonatal ICU (NICU) and ER. Pediatric patients comprise more than one-tenth of all ER patients in Kyoto University Hospital.

Main target diseases

Leukemia, solid tumors, aplastic anemia, immune disorders, allergic diseases, congenital and acquired heart diseases, metabolic disorders, diabetes, epilepsy, myopathy, and premature birth.

Clinical service and performance

Outpatients:
We accept a wide range of pediatric outpatients. In addition to general and special outpatient clinics, we have a unit for brain tumors in collaboration with the departments of neurosurgery, radiation oncology, and image-applied therapy. We also have a unit for outpatient chemotherapy in collaboration with the Kyoto University Cancer Center. We are actively treating adolescents and young adults (AYA), who comprise one-tenth of all pediatric patients.

Inpatients:
Our ward is exclusively for pediatric patients and is shared by the departments of pediatric surgery, pediatric cardiovascular surgery, and plastic surgery. We perform hematopoietic stem cell transplantation in our ward for patients with leukemia, immune-deficiencies, and inborn metabolic errors who are referred to our hospital from across the nation. We have performed a total of 82 cases (including 48 autografts) of stem cell transplantation (bone marrow, peripheral blood, and cord blood) in the past 5 years. For hospitalized children, we have an on-site school and nursery to provide in-hospital childcare services. Volunteers actively care for the children by providing many entertaining events.

Inpatient statistics in 2012	
Total number of Inpatients	10,995
Mean length of hospital stay (days)	11.18
Total patients admitted to NICU	3,205
Mean length of NICU stay (days)	20.58
Total patients admitted to GCU	3,721
Mean length of GCU stay (days)	19.00

Clinical research activities

We perform various clinical studies as a member of the Japan Pediatric Leukemia/Lymphoma Study Group (JPLSG): ALL-R08, MLL-10, ALL-T11, ALL-B12, ALL-Ph13, AML-D11, CML-08, LLB-NHL03, LCH-12, TAM-10, JMML-11, etc.

Department of Dermatology

Director
Prof. Kenji Kabashima

For the best care of skin diseases

1) Specialized outpatient clinic offering a wide range of skin care services.
2) Day surgeries.
3) Low-invasive treatment, such as sentinel lymph-node biopsies in skin cancers.

Main target diseases

Skin benign and malignant tumors, cutaneous lymphoma, malignant melanoma, atopic dermatitis, psoriasis, contact dermatitis, photosensitive diseases, alopecia, skin ulcers, pressure sore, varix, autoimmune bullous disease, collagen disease, vitiligo, skin connective tissue disease, dermatomycosis, skin bacterial and viral infection, drug eruption etc.

Clinical service and performance

In 2012 (from April 2012 to March 2013), 138 patients visited our out-patient clinic per day. Our clinics treat all types of skin diseases. Specialty clinics are open for atopic dermatitis, photosensitivity, psoriasis, contact dermatitis, alopecia, skin surgery, bed sore, varicose vein, bullous disease, collagen diseases, fungal infection, skin ulcer, urticaria, cutaneous lymphoma, collagen tissue disease, acne, pruritus, disorders of keratinization and Hansen's disease. Minor surgeries for benign skin tumors are held in a procedure room equipped with our clinics. In Day Surgery Unit, surgeries including sentinel lymph node biopsies, skin flaps and skin drafts are done in the afternoon on Tuesday, Thursday and Friday. In 2012, the number of surgeries in operation rooms is 242 cases (general anesthesia 90 cases, local anesthesia 152 cases).

In our in-patient ward, our department has 21 beds. The number of new in-patients is 535 in 2012.

Clinical research activities

Intravenous immunoglobulin (IVIG) therapy for steroid-resistant bullous pemphigoid

Department of Urology

Director
Prof. Osamu Ogawa

The world leader in urology delivering the standard patient care available while simultaneously providing advanced urological treatment

Our multidisciplinary disease management teams are dedicated to providing patients not only with the standard care available today, safely, but also with innovative, state-of-the-art treatment for various urological diseases. Kyoto University Hospital is a pioneer in minimally invasive surgical techniques such as laparoscopic urology surgery in Japan. Our attention has now focused on a modification of laparoscopy, the transition from multiple port access to single port access, and robot-assisted surgery. All types of genitourinary cancer are evaluated and treated with complex surgical procedures, carefully giving attention to quality-of-life issues, and also with minimally invasive surgeries. You will receive care from multidisciplinary treatment teams, which include surgeons, radiation oncologists, pathologists, medical oncologists, and other health-care professionals, and will be provided the best possible treatment according to your individual needs and preferences. The Urology Department at Kyoto University Hospital has expertise that covers the spectrum of clinical urology, including voiding disorders, pediatric urology, male infertility, and kidney transplantation, and performs various clinical trials and researches.

Main target diseases

Cancer(Prostate, Bladder, Kidney, Ureteral/Renal pelvic, Testicular, Penile), Benign prostatic hyperplasia, Stone disease, Male fertility, Kidney transplantation, Female urology and voiding dysfunction, Pediatric urology, Retroperitoneal tumors

Clinical service and performance

The total number of outpatients was approximately 33,999 in 2012. The outpatient clinics comprise different special clinics according to specialties as follows: prostate cancer clinic, bladder cancer clinic, voiding dysfunction clinic, renal transplantation clinic, male infertility clinic, and pediatric clinic. Since the rate of prostate cancer morbidity is increasing and there is a vast array of treatment options available for prostate cancer, 3 urologists and 3 radiation oncologists work together as a team and conduct prostate cancer clinics every Wednesday. Cystoscopy and prostate biopsies are usually performed on an outpatient basis. Surgical treatments such as orchidopexy and varicocelectomy are also usually outpatient procedures.
The Department of Urology has a ward with 38 beds on the 8th floor of "Sekiteito" building. The total number of admitted patients was approximately 13,905 (males: 11,311, females: 2,954) in 2012. Although many patients admitted have complicated diseases, the mean duration of hospitalization was 11.2 days in 2012, which has significantly decreased recently. The total number of operations performed was 558, including 474 cases at the main operating room and 84 cases at outpatient clinics in 2012. Since April 2011, we have started robotic-assisted prostatectomy and 110 operations have been performed until July 2013. All procedures were performed safely, and the patients have been significantly satisfied with the treatment.

Clinical research activities

Nerve-sparing robotic-assisted radical prostatectomy is performed to minimize postoperative complication and to preserve erectile function, if possible. In cases for which nerve-sparing procedures are difficult, sural nerve grafting to reconstruct resected cavernosal nerves has been performed by robotic-assisted surgery.
Various multicenter clinical trials such as prevention of superficial bladder cancer recurrence, as a part of JCOG studies, are now ongoing. Implantation of an artificial urethral sphincter (AMS800) was started on April 2012.

Department of Otolaryngology, Head and Neck Surgery

Director
Associate Professor
Shigeru Hirano

Functional surgery of ENT with the preservation and regeneration of organs

We provide various kinds of medical treatment related to the ENT field. We especially performed several characteristic treatments as listed below to achieve functional preservation and regeneration of auditory, nasal and paranasal, pharyngeal, laryngeal, and other head and neck organs.

1) Cochlear implantation: We especially focus on cochlear implantation in infants and toddlers.
2) Endoscopic skull base surgery: We have treated cases of intractable sinusitis and even anterior skull base tumors.
3) Phono-surgery (thyroplasty): For the treatment of vocal fold paralysis, we inserted GORE-TEX® from the lateral side of the thyroid cartilage to medialize the vocal fold.
4) Thyroid gland surgery: We always try to preserve the recurrent laryngeal nerve in adhesive thyroid cancer cases if the patients do not suffer from the vocal fold paralysis preoperatively. Using this approach, 80% of the patients could avoid permanent vocal fold paralysis.
5) Collaborative approach for functional preservation in head and neck cancer treatment: We collaborate with radiologists, plastic surgeons, speech therapists, and nurses to achieve preservation and recovery of voice and swallowing functions.

Main target diseases

Severe and profound sensorineural hearing loss, vestibular and facial schwannomas, Meniere's disease, facial paralysis, chronic otitis media, olfactory neuroblastoma, cholesteatoma, otosclerosis, chronic sinusitis, allergic rhinitis, vocal fold paralysis, thyroid tumor, laryngeal cancer, pharyngeal cancer, maxillary cancer, oral cancer, salivary gland tumor.

Clinical service and performance

During the fiscal year 2012 (FY2012), 27,481 patients visited our outpatient clinic. We have specialty clinics on a wide variety of ENT fields, including pharyngeal diseases, otitis media, cochlear implantation, hearing impairment, genetic hearing loss, hearing loss in children, nasal and paranasal diseases, language, voice, head and neck cancer, thyroid glands, and equilibrium diseases. We use the day surgery unit (DSU) for the outpatient surgery or short-term hospital stay surgery. We performed 283 surgeries in DSU during FY2012.

For in-patient hospital care, we had 736 patients during FY2012. Among them, 421 patients underwent surgeries. Most of the patients required long surgeries or tight post-operative care. Patients who required in-patient hospital care also included those undergoing chemoradiation therapy (CRT) against head and neck cancers and those with severe inflammation, severe vertigo, sudden deafness, or facial palsy. We had 45 beds for our department, and 88.9% of the beds were occupied during FY2012.

The following tables show the year-base statistics of the medical treatment in our department (FY2012).

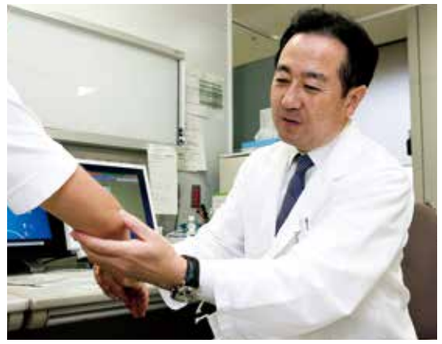
1) Major medical treatment in the in-patient hospital care		2) Major surgeries performed in the DSU	
Cochlear implantation	31	Myringoplasty and tympanoplasty	5
Vestibular schwannoma	2	Endoscopic sinus surgery	35
Tympanoplasty	59	Laryngeal microsurgery	56
Endoscopic sinus surgery	64	Resection of neck tumors	37
Thyroid gland surgery (incl. cancer)	99	Thyroplasty	12
Laryngeal cancer(surgery or CRT)	9	Thyroid gland surgery	16
Hypopharyngeal cancer(surgery or CRT)	19		
Oropharyngeal cancer(surgery or CRT)	18		
Maxillary cancer(surgery or CRT)	4		
Oral cancer(surgery or CRT)	43		
Salivary gland cancer(surgery and radiation)	5		

Clinical research activities

We conducted a clinical trial for the treatment of acute profound sensorineural hearing loss using insulin-like growth factor-1 (IGF-1) in an absorbable gel (Phase Ⅰ-Ⅱ). In our hospital, 19 patients participated in this trial during FY2012. This translational practice is based on the animal data collected through our basic research studies. This is the first clinical trial in the world that utilizes a growth factor for the treatment of inner ear disease. Other than our department, eight ENT departments in major hospitals in Japan participated in this clinical trial. By the end of FY2012, 120 patients in total had participated in this trial in Japan, which fulfilled our expected size of the trial.

Department of Orthopaedic Surgery

Director
Prof. Shuichi Matsuda



Experts of musculoskeletal medicine for improving patients' active life

Since 1906, the Department of Orthopedic Surgery at Kyoto University Hospital has provided outstanding patient care and education to students and fellows in the fields of orthopedic surgery and musculoskeletal medicine. We are dedicated to advancing knowledge and developing innovative treatment methods related to the musculoskeletal system, including hip replacement arthroplasty. In 1970, our department first introduced Charnley total hip replacement technology in our country. As a Japanese frontier of orthopedic medical care, we have developed original artificial bones and various types of prostheses as well as surgery-assisting devices for disorders of the upper cervical spine.

Main target diseases

Cervical spondylotic myelopathy, lumbar spinal canal stenosis, ossification of the posterior longitudinal ligament, spinal cord tumor, degenerative arthritis of the hip and knee, rheumatoid arthritis, osteoporosis, sports injury, brachial plexus injury, congenital anomaly of the upper extremity, and bone and soft tissue tumors.

Clinical service and performance

Our department offers a variety of expert treatments in many aspects of musculoskeletal medicine, including inpatient and outpatient surgical care, rehabilitation, and prosthetics. Staff of the outpatient clinics include medical specialists for spinal disease, articular disease such as that of the hip and knee joints, rheumatoid arthritis, surgical disorders of the hands, and sport orthopedic surgery.

Outpatients:

- In addition to a general outpatient clinic, we have special orthopedic clinics for diseases related to the spine, bone and soft tissue tumors, osteoporosis, rheumatoid arthritis, the hip joint, the hand, the knee joint, sports medicine, and the skeletal system.
- Outpatient care includes diagnosis and treatment with knee and shoulder arthroscopies, carpal tunnel release surgery, and resection of bone and soft tissue tumors performed as a day surgery or surgery needing short-term hospitalization.

Inpatients:

- Providing an inpatient capacity of 57 beds with mean hospital stay of 22.5 days
- Performing chemotherapy for malignant bone and soft tissue tumors and biological drug therapy for rheumatoid arthritis
- The number of surgeries performed is 500–600 per year, including approximately 120 for total hip replacement; approximately 100 for total knee replacement; approximately 100 spine/spinal cord surgeries; approximately 60 surgeries for bone and soft tissue tumors; and other surgeries such as arthroplasty, fracture surgery, reconstruction of knee ligament, and mosaicplasty, a technique of using autologous osteochondral grafts for osteochondral defects.

Clinical research activities

We have performed a variety of clinical trials as follows:

- Phase Ⅱ clinical trial for combined modality therapy for Ewing sarcoma family of tumors
- Randomized trial of the efficacy of combined adjuvant chemotherapy with ifosfamide after surgery for osteosarcoma
- Observational study of the Discovery Elbow System
- Development of a customized guide tool for osteotomy and bone screw insertion
- Clinical trial on the safety of necrotic bone regeneration and prevention of femoral head collapse with hydrogel containing basic fibroblast growth factor for idiopathic osteonecrosis of the femoral head
- Clinical trial on the safety and efficacy of cervical spinal fusion using a custom-made titanium artificial bone

Department of Psychiatry

Director
Prof. Toshiya Murai

Exclusive treatment for various mental disorders

The Department of Psychiatry in Kyoto University Hospital provides consultation, evaluation, and treatment for a variety of psychiatric diseases. Our main care options include psychotherapy for severe mental disorders, diagnosis for development/childhood mental disorders, and treatments of anorexia (an eating disorder) and seizures. We also offer electroconvulsive therapy and cognitive-behavioral therapy for depression. In addition to these services, we provide outpatient care based on liaison consultation, rehabilitation psychiatry, and an outpatient service.

Main target diseases

Schizophrenia, acute transient psychotic obstacle (an atypical mental disease), mood disorders (depression, manic-depressive psychosis), organic mental disorders, toxic mental disorders, anxiety disorder, obsessive-compulsive disorders, dissociative impairments, eating disorders, personality disorders, epilepsy, pervasive developmental disorders (autism and Asperger's disorder), attention deficit/hyperactivity disorders, and dementia

Clinical service and performance

Outpatients:
- Total number of outpatients was 34,576 (ratio of male to female: 1:1.33).
- General outpatient office for all psychiatric disorders and special clinics for developmental and eating disorders

Inpatients:
- Our department has a capacity of 60 beds and 8 protection rooms in the hospital, which is completely closed for acute treatment.
- Total annual number of inpatients was 19,077 with a mean hospital stay of 76.3 days.

Community health activities

We have mainly performed the following community health activities:
- Continuously supporting the areas (Fukushima) afflicted in the Great East Japan Earthquake by "Kyoto Prefecture mental health care team"(April 2011 to July 2011), "Kyoto University Hospital mental health care team"(November 2011 to December 2011), and "Kyoto Children's mental health care team"(May 2012 to March 2013)
- Providing community services, as non-regular psychiatrists, at the mental health care center of Kyoto City, the educational support center of Nagaokakyo City, and the Kyoto detention center

Department of Oral and Maxillofacial Surgery

Director
Prof. Kazuhisa Bessho

Treatment of all diseases that cause oral dysfunction

Oral functions such as eating, mastication, swallowing, and articulation are indispensable human biological activities. However, impairment of these functions due to various diseases affects daily life. Our advanced hospital provides multidisciplinary treatment through cross-departmental cooperation. Our Department of Dentistry and Oral Surgery provides advanced and high-quality medical treatment for disorders that cause marked disabilities such as oral tumors, jaw deformities, temporomandibular disorders, alveolar ridge atrophy, sleep apnea syndrome, and glossodynia.

Main target diseases

Dentofacial deformities (maxillary protrusion, mandibular prognathism, facial asymmetry, maxillary retrusion, mandibular micrognathism, etc.); jaw and oral tumors (ameloblastoma, etc.); jaw bone cysts; oral mucosal disorders; maxillofacial and oral trauma (maxillofacial fractures, etc.); alveolar ridge atrophy (reconstruction by bone grafting, dental implantation, etc.); temporomandibular disorders; sleep apnea syndrome; inflammation (dental infections, osteomyelitis of the jaw, etc.); and oral psychosomatic disorders (glossodynia, etc.).

Clinical service and performance

A total of 26,260 outpatients (including 3,398 first visits) visited our department in 2012 along with 1,577 referrals (47.7% of first visits). In addition to our outpatient general dentistry and oral surgery services, we have 9 special outpatient services, which include: tissue regeneration/implantation, oral tumor treatment, temporomandibular joint and orthognathic treatments, maxillofacial fracture repairs, sleep/respiratory disorder therapy, refractory oral disorder (chronic neuropathic diseases) therapy, cleft lip/palate treatment, and esthetic dentistry. Since perioperative management of oral function was an important agenda in 2012 we are striving to enhance cooperation among staff members to accomplish pre- to postoperative management of the oral function (treatment for oral disorders and organic and functional oral care).

The aim of the Day Surgery Unit (DSU) is to provide surgical treatment with no or short-term hospitalization. In 2012, a total of 819 surgeries were performed under general and local anesthesia. The mean occupancy rate of the 21 beds was 87.7%, mean duration of hospitalization was 18 days, the total annual number of inpatients was 6,726, and 198 operations were performed in the central operation room. The most frequent operations performed after admission included those for jaw deformities (49 cases), jaw bone cysts (35 cases), and oral tumors (30 cases).

Clinical research activities

We are conducting research on oral bisphosphonate preparations and bone metabolism markers. The cohort study includes assessment of the risk of jaw bone necrosis after tooth extraction, determining the frequency of osteoporosis complications due to jaw bone myelitis, studying periodontal disease and rheumatic disorders, and clinical studies on jaw bone repositioning and obstructive sleep apnea. Studies related to stem cells derived from human tissues, disease-specific iPS cells, and bone reconstruction using biological materials in regenerative medicine are currently ongoing. In addition, regarding the relationship between oral health and systemic disorders, we are investigating the relationship between oral disorders and cardiovascular and systemic diseases including metabolic syndrome as well as conducting prospective, cohort, and case-controlled studies to identify genetic and environmental factors involved in oral disorders. We are also evaluating the relationships between systemic and oral disorders by participating in the Nagahama Zeroji Prevention Cohort Project.

Radiology

Department of Radiation Oncology and Image-Applied Therapy

Director
Prof. Masahiro Hiraoka

Cancer Cure by Non-invasive Scalpels

Radiotherapy aims to cure cancer with minimal invasion by preserving the form and function of organs. Recent advancements in radiation treatment machines and treatment planning software have resulted in high-precision radiation therapies, such as three-dimensional radiotherapy, stereotactic radiotherapy, and intensity-modulated radiation therapy (IMRT). Rapid diffusion of such high-precision radiation therapy in routine clinical practices has brought both improved treatment outcomes and safety into reality.
Our department is focusing on the development of innovative minimally invasive radiotherapy systems and offering high-quality treatments that can maintain a patient's QOL. We are also developing advanced treatment strategies for various intractable cancers in collaboration with other departments.

Main target diseases

breast cancer, lung cancer, malignant pleural mesothelioma, prostate cancer, esophageal cancer, pancreatic cancer, rectal cancer, head and neck cancer, brain tumor, gynecologic cancer, liver cancer, thyroid cancer, and pediatric tumor

Clinical service and performance

We have both general and specialized outpatient clinics and also participate in various multidisciplinary treatment units (prostate cancer, brain tumor, head and neck cancer, esophageal cancer, lung cancer and mesothelioma, pancreatic cancer, and breast cancer) at the Kyoto University Cancer Center.
In 2012, our number of new patients was 1,067 (or an average of 93 persons per day). We are contributing to generate more cancer research evidences in Japan by actively participating in various multicenter clinical trials such as JCOG, WJCOG, and JROSG in addition to conducting our own studies, especially in pancreatic and lung cancers. Among 1,118 radiotherapy procedures performed, there were many high-precision radiation cases, including 133 stereotactic radiotherapy cases (brain: 97, body: 36) and 177 IMRT cases (prostate cancer: 93, head and neck cancer: 31, others: 53).

Service for high accurate radiotherapy

IMRT is the advanced technique of radiation therapy, which enables us to deliver a much higher dose to the targets while sparing the surrounding healthy tissue. Therefore, IMRT can improve treatment efficacy without increasing the risk of side effects. In 2000, we first introduced IMRT for prostate cancer in Japan and have since treated the largest number of prostate cancer patients with IMRT in Japan.
Moreover, we started dynamic tumor-tracking (DTT) irradiation with Vero4DRT (MHI-TM2000) for the first time in the world in September 2011. This new treatment technique has been developed under industry-university cooperation for ten years and is highly esteemed worldwide. DTT was initially provided for lung cancer, and its application has expanded to liver and pancreatic cancers as well.

Radiology

Department of Diagnostic Imaging and Nuclear Medicine

Director
Prof. Kaori Togashi

Diagnosis of diseases using imaging modalities and treatment under image-guidance

Currently, high-level imaging is required for diagnosis during medical care. Our Department of Diagnostic Imaging and Nuclear Medicine performs computed tomography (CT), magnetic imaging resonance (MRI), positron emission tomography (PET), GIS, angiography, and interventional radiology for disease diagnosis in collaboration with the Clinical Radiology Service Unit. We use modern technology, such as multi-detector CT (MDCT), 3-Tesla MRI, and combined PET and CT to treat first-rate cases.

Main target diseases

Almost all diseases

Clinical service and performance

We have four main sub-departments:
1. Diagnosis with MDCT:
   We have 5 fully functional up-to-date MDCT machines. Last year, we performed 156 MDCT examinations daily and 38,170 annually. Based on these numbers, we ranked first among all national university hospitals.
2. MRI diagnosis:
   Out of the four MR machines that we currently have, three are modern machines. We also possess fully functional 3-Tesla MR machines, which provide high-quality images. Last year, on an average, we performed 55.5 MRI examinations daily and 13,533 annually.
3. Positron emission computed tomography (PET-CT), positron emission tomography (PET), single-photon emission computed tomography (SPECT-CT), and SPECT in nuclear medicine:
   We have 5 fully functional machines, which include PET-CT and SPECT-CT machines. High-resolution images can be obtained within a short span of time using the modern PET-CT scanner. Last year, on an average, we performed 25.3 examinations daily and 6,076 annually in nuclear medicine.
4. Angiography and interventional radiology:
   High-quality percutaneous interventions, including transcatheter arterial embolization, biliary intervention, percutaneous ablation, and percutaneous interventions after liver transplantation are performed.

Advanced medical technology

In collaboration with Toshiba Medical Systems and using the MRI machine that was set up in our Diagnostic Imaging and Nuclear Medicine Department, various studies are currently being performed in our Department as well as in other departments.
Clinical studies in collaboration with Shimadzu Medical Systems Corporation are currently ongoing using a new specially designed PET machine for breast examination.
We also introduced other studies, such as "PET-CT imaging using methionine-somatostatin analogs," "Cine-MRI," and "Reduction of radiation exposure during CT."

Department of Anesthesia

Director
Prof. Kazuhiko Fukuda

Safety and comfort during perioperative period, Management of pain conditions

Department of Anesthesia performs anesthetic management in the operation theater and the Day Surgery Unit. In order to achieve safety and comfort during the perioperative period, it is important to provide postoperative pain management by epidural block, peripheral nerve block, and patient controlled analgesia (PCA). Special activity of Department of Anesthesia in the Day Surgery Unit includes perioperative patient management for electroconvulsive therapy and placement of central venous catheters. Another main activity of Department of Anesthesia is management of a variety of pain by the pain clinic group, which utilizes the following techniques for optimizing pain management: nerve block (using local analgesics, neurodestructive drugs, and radio-frequency thermocoagulation), physical therapies (near infrared radiation and low-frequency stimulating therapy), and medications (including percutaneous administration by iontophoresis).

Main target diseases

Acute pain of herpes zoster, neuralgia after herpes zoster, cancer pain, trigeminal neuralgia, atypical facial neuralgia, complex regional pain syndrome (reflex sympathetic dystrophy, causalgia), peripheral neurogenic pain, pain after stroke, myelopathic pain, phantom pain, migraine, cluster headaches, tonic headache, occipital neuralgia, allergic rhinitis, glossopharyngeal neurogenic pain, intercostal neuralgia, chronic pancreatitis, perineal pain, cervical disc herniation, cervical spondylotic root disease, cervical spondylotic myelopathy, cervical intervertebral arthropathy, thoracolumbar disc herniation, lumbar spinal canal stenosis, osteoarthritis of the lumbar vertebra, sacroiliac arthropathy, traumatic cervical syndrome, shoulder-arm-neck syndrome, sciatica, obstructive arterial sclerosis, intractable skin ulcer, preoperative pain syndrome, and fibromyalgia

Clinical service and performance

Outpatients:

- Providing outpatient clinic in the outpatient building (4F) by four pain clinicians on Mondays, Wednesdays, and Fridays
- Pain management by nerve block under radioscopy or ultrasonography, including stellate ganglion block, epidural block, root block, trigeminal nerve block, brachial plexus block, intercostal nerve block, suprascapular nerve block
- Consultation services for patients scheduled to undergo surgical treatment with anesthetic management by the Department of Anesthesia
- In 2012, the number of new patients was 253 and the number of patients who visited per day was approximately 50 to 70.

Inpatients:

- Nerve blocks under radioscopy are performed in the clean laboratory of the radiology in the afternoon of Monday and Friday. All patients who undergo a nerve block under radioscopy using neurodestructive drugs are hospitalized in the South Ward 3F.

Advanced medical technology

We have actively performed a variety of clinical research as follows:

- Anesthetic management of liver transplantation (including segmental liver transplantation and transplantation from a brain-dead donor for severe liver disorders)
- Anesthetic management of lung transplantation (including segmental lung transplantation and transplantation from a brain-dead donor for severe lung disorders)
- Anesthetic management of thoracoscopic or laparoscopic surgery
- Anesthetic management of awake craniotomy

Department of Neurosurgery

Director
Prof. Susumu Miyamoto

Mission to preserve and regenerate brain functions using innovative technologies

The department provides a complete range of contemporary neurosurgical facilities with excellent clinical results. We are engaged in the development of innovative treatments for intractable neurological disorders keeping in mind the motto “For the Patient”, as a leader in treating and researching the most complex neurological disorders.

Main target diseases

Brain Aneurysm, cerebral and spinal AVM/AVF, Moyamoya Disease, Brain Tumor, Skull Base Tumor, and Pituitary Tumor, Pediatric Neurosurgery, Functional Neurosurgery, Movement Disorders, Epilepsy, Spine Disorders, and Brain Trauma

Clinical service and performance

Neurosurgery Outpatient Division includes general sections and specific sections for Moyamoya disease, Cervical carotid artery disease, Intravascular surgery (IVR), Epilepsy, Brain tumor, Neuroradiotherapy, Children brain tumor, Neuropsychotherapy, DBS & Parkinson disease, Pituitary adenoma. The Division receives more than 14,000 outpatients per year and more than 1,000 first-visiting outpatients per year. The Neurosurgery Inpatient Division has a capacity of 54 beds, and the Stroke Care Unit has a capacity of with 6 beds. The daily average number of inpatients in the Neurosurgery Service is 52. There are more than 1,200 Neurosurgery admissions per year and more than 600 surgeries per year.

Advanced medical technology

Neurosurgery Department provides innovative diagnostic tools and treatments, some of which are not supported by medical insurance. There are facilities for step-by-step bypass surgery for Moyamoya disease, intravascular surgery, innovated radiotherapy and chemotherapy for malignant brain tumors, subdural electrode plantation to evaluate epilepsy focus, Magnetoencephalography (MEG), Functional study using 3T-MRI, and Endoscopic surgery.

Department of Plastic and Reconstructive Surgery

Director
Prof. Shigehiko Suzuki

Compatibility between beauty and function

We provide surgery for the correction of deformities of superficial parts of the body; for covering or replacing any type of defect of the skin, subcutaneous tissue, and bone; and for the recovery of functional deficits due to both congenital and traumatic pathological conditions. The aim of these types of surgery is to enrich the quality of life of patients. We also perform reconstructive operations for deep internal defects related to prior cancer surgery. Close cooperation with other medical departments is always emphasized to ensure prompt and effective correspondence.

1) Systematic approach and long-term follow up for craniofacial malformations (e.g., cleft lips, cleft palates, and microtia)
2) Quick response to emergency cases (e.g., facial trauma and severe burns requiring systemic care)
3) Regenerative medicine for skin ulcers (e.g., chronic skin ulcers and bed sores)
4) Biomechanical approach for congenital malformations and trauma of upper and lower extremities (e.g., syndactyly, polydactyly, aphalangia, amputation, and degloving injury)
5) Surgical treatment for skin tumors and reconstructive surgery after the resection of skin cancer
6) Surgical or laser therapy for melanocytic pigmented lesions and a variety of hemangiomas
7) Surgery for lesions of the eyelid and orbital area
8) Conservative treatment and surgical resection combined with radiation therapy for keloid
9) Reconstructive surgery after tumor removal in the cervicofacial area and mammoplasty for breast cancer

Main target diseases

Cleft lip, Alveolar cleft, Cleft palate, Submucous cleft palate, Microtia, Other auricular deformation, Congenital anomalies of the hand and foot (Polydactyly, Syndactyly, Split hand, Macrodactyly, Congenital constriction ring syndrome) , Facial bone fracture, Facial soft tissue injury, Burn, Intractable skin ulcer, Decubitus, Diabetic foot ulcer, Cutaneous benign tumor, Cutaneous malignant tumor, Malignant tumor of the lacrimal gland, Malignant tumor of the head and neck (reconstructive surgery), Hemangioma, Nevus, Scar, Hypertrophic scar, Keloid, Scar contracture, Breast cancer (reconstructive surgery) , Eyelid ptosis, Axillary osmidrosis, Ingrown nail, Macrostomia, Webbed neck, Umbilical hernia, Facial palsy

Clinical service and performance

The staff of our department includes a professor, an associate professor, an assistant professor, four lecturers, 10 instructors, and two speech therapists. The outpatient department is open from Monday to Friday. Each staff member has a consultation time related to different specialties. These consultations include those for cleft lips/palates, speech training, microtia, facial trauma, scar/keloid, reconstruction after cancer surgery, skin tumors, congenital abnormalities of the extremities, orbital/palpebral issues, skin ulcers, skin regeneration, and laser therapy. Refer to the Outpatient Table to find a doctor who is suitable for you or your family.

Approximately 1,200 operations are performed every year (craniofacial malformations, 200; reconstructive procedures after cancer surgery, 100; and scar removal or keloid resection, 100). A total of 700 (60%) operations are day surgeries. Even an operation requiring general anesthesia can be performed as a day surgery. Approximately 500 inpatient surgeries are performed per year. Twenty-two beds are available for patients requiring inpatient surgery. On average, the admission period ranges from 10 to 15 days.

Advanced medical technology

We have performed highly advanced medical treatment such as dye laser therapy for hemangioma (covered by health insurance) and have conducted the following research activities:

- An exploratory clinical trial on the safety and clinical efficacy of wound bed preparation by using self-culture dermis with an animal product-free medium for diabetic foot ulcers
- A clinical study of the safety and efficacy of the combination of new medical material and fibroblast growth factor on wound healing in patients with chronic skin ulcers
- Developing treatment options for keloid and new materials for wound healing for application in the clinical setting (preclinical trials have been completed)
- Research for the application of regeneration medicines (for the skin, fat tissue, bone, and cartilage)

Department of Cardiovascular Surgery

Director
Associate Professor
Tadashi Ikeda

Safe and high-quality cardiovascular surgery for everyone, from newborns to the elderly

The Department of Cardiovascular Surgery at Kyoto University Hospital is involved in a wide area of cardiovascular diseases such as ischemic heart disease, valvular heart disease, aortic disease, and congenital heart disease. We have a balance of cases as we have treated cases in each critical area with outstanding surgical results. Under our basic concept of properly practicing evidence-based medical care, we have been introducing advanced technologies, including endovascular stent grafting for aortic aneurysm and implantable ventricular assist device for severe heart failure, to improve treatment results and the postoperative quality of life.

Main target diseases

Coronary heart diseases (angina, myocardial infarction, and left ventricular aneurysm), valvular diseases (mitral stenosis, mitral insufficiency, aortic stenosis, aortic insufficiency and tricuspid regurgitation, and infective endocarditis), aortic diseases (thoracic aortic aneurysm, acute and chronic aortic dissection, thoracoabdominal aortic aneurysm, abdominal aortic aneurysm, and aortitis syndrome), cardiomyopathy (ischemic cardiomyopathy, dilated cardiomyopathy, and hypertrophic obstructive cardiomyopathy), congenital heart diseases (atrial sepal defect, ventricular septal defect, patent ductus arteriosus, tetralogy of Fallot, atrioventricular septal defect, transposition of great arteries, anomalous pulmonary vein connection, single ventricle, other complex anomaly, etc.), other cardiac disorders (cardiac tumor, atrial fibrillation, and constrictive pericarditis), and peripheral vascular diseases (occlusive arteriosclerosis, Buerger's disease, and varicose veins).

Clinical service and performance

Outpatients:

- In addition to the general clinic and the first-visit clinic, special outpatient clinics are provided for the following diseases: general, pediatric cardiovascular disease (Fridays of odd-numbered weeks), severe heart failure (every Tuesday), aortic aneurysm/stent (every Tuesday), and varicose veins (every Wednesday).
- Had 5,175 outpatients (a mean of 431 per year) with an outpatient referral rate of 100% in 2012.

Inpatients:

- Provides an in-hospital capacity of 23 beds in the south ward (4F) for adults and 2 beds in the north ward (3F) for children.
- Has a High Care Unit with 4 beds in the south ward (4F) with the Department of Hepatobiliary Pancreatic Surgery and Transplantation.
- Number of inpatients was 7,040 with a mean hospital stay of 15.1 days in 2012.
- Number of surgeries performed was 392 (including surgeries for aortic aneurysms) in this year.
- Started using a state-of-the-art hybrid operation room equipped with an angiography system for aortic stenting and transcatheter aortic valve replacement. (We are ready to start a new program of transcatheter aortic valve replacement, which has been approved in October 2013 by the Government, with great expectations as a minimally invasive procedure for the elderly patients with severe aortic valve stenosis.)
- In addition to extracorporeal ventricular assist devices, implantable left ventricular assist devices are available for end-stage heart failure patients since April 2013. These devices are expected to be safer than existing devices and to improve the patient's quality of life.
- Endovenous laser ablation is available for the treatment of varicose vein of the lower extremity since January 2013, with excellent results.

Basic and clinical research activities

For basic research, our department has developed novel therapeutic methods for heart failure by using iPS cell technology as well as for angioproliferative disease through gene introduction. We have completed a clinical trial of therapeutic angiogenesis to treat limb ischemia through sustained release of bFGF with gelatin hydrogel and started preparing a new clinical trial for a possible new drug. Our team also plans clinical trials of angiogenic therapy for ischemic heart disease and anti-heart failure therapy with iPS cell-derived myocardial seat.

For clinical research, we will perform multicenter studies of coronary bypass grafting and long-term durability of artificial valve in 27 facilities in west Japan that are affiliated to the Cardiovascular Surgery Department at Kyoto University, with high-quality research evidence based on the absolute number of registered cases. Clinical studies related to our department include the long-term results of coronary artery bypass grafting as well as study of long-term durability of prosthetic valves that have been presented in a number of reputed domestic and international academic conferences. Our department sends high-quality evidence, achieved from an absolute number of cases, to the world.

Department of Thoracic Surgery

Director
Prof. Hiroshi Date

The basis of our research and practice is “love thy neighbour.”

Dr. Date took up professorship at the Department of Thoracic Surgery in October 2007. Our practice covers a broad range of chest diseases.
Less invasive thoracic surgery: We routinely perform surgery for lung cancer and mediastinal tumors using videothoracoscopy to achieve a radical cure using a less invasive procedure. We started robot-assisted thoracic surgery in 2012.
Multimodality treatment for thoracic malignancy: We conduct induction chemoradiotherapy and adjuvant chemotherapy for locally advanced lung cancer as well as trimodality treatment (surgery, chemotherapy, and chest wall irradiation) for malignant pleural mesothelioma.
Safe surgery for compromised patients: We take a proactive stance for performing surgery in compromised patients who have limited pulmonary function, ischemic heart diseases, and/or cerebrovascular diseases with a special focus on safety management.
Lung transplantation: Our hospital has been designated as a lung transplant center in Japan. We have performed many brain-dead and living donor lung transplantations.

Main target diseases

Primary lung cancer, lung-metastasizing tumors, mediastinal tumors, malignant pleural mesothelioma, spontaneous pneumothorax, bullous emphysema, chronic pulmonary emphysema, infectious lung diseases, severe diffuse lung disease needing lung transplantation, diffuse interstitial lung diseases needing surgical lung biopsy

Clinical service and performance

Outpatient clinic: The outpatient clinic is open Monday through Friday. The consultation clinic for lung transplantation is open on Mondays in the afternoon.
Cooperation with other departments: For patients who need multimodality treatment, we discuss the case and cooperate with pulmonologists, diagnostic radiologists, and therapeutic radiologists.
Bronchoscopy: We perform about 200 fiberoptic bronchoscopy examinations per year. Standard observation and biopsy, transbronchial biopsy using endobronchial ultrasonography, and preoperative virtual-assisted lung mapping using bronchoscopy for small lung cancers are performed.
Ward: Our ward is on the 4th floor of the Sekitei-ward. Patients visit this ward for surgery, chemotherapy/radiotherapy, lung transplant evaluations, and other reasons.

Operation: We performed 448 operations under general anesthesia in the fiscal year 2012: 200 primary lung cancer resections, 45 pulmonary metastasectomies, 35 bullectomies/blebectomies for pneumothoraces, 30 surgeries for inflammatory chest diseases, 22 resections for mediastinal tumors, 16 lung transplants, and others.

Advanced medical technology

●Lung transplantation
Our hospital has been designated as a lung transplant center in Japan. In the fiscal year 2012, nine brain-dead and seven living donor lung transplantations were performed.
●Robotic surgery
We started robot-assisted thoracic surgery using the da Vinci system (Figure 3) in 2012. Resections of seven lung cancers and five mediastinal tumors have been performed to date.
●Adjuvant chemotherapy for advanced lung cancer
We participated in the JIPANG study, a randomized phase Ⅲ study of PEM + CDDP and VNR + CDDP for completely resected non-squamous NSCLC.

Department of Rehabilitation Medicine

Director
Prof. Shuichi Matsuda

A team of specialists to return patients from hospitals to home and society

Professor Shuichi Matsuda M.D. was appointed to be chief of the department of rehabilitation medicine on March 1, in 2012.
We have provided rehabilitation services to patients who are referred by almost all the other departments of our hospital. After performing assessments of the patients’ disability and impairment, we prescribe a rehabilitation program for each patient. We finally evaluate the efficacy of the programs during the follow-up studies of the patients.

Main target diseases

Patients having problems in the musculoskeletal system; disorders of the central nervous system and circulatory organs; and difficulties in communicating, respiring, eating, and swallowing.

Clinical service and performance

Our team consists of three physicians, 13 physical therapists, five occupational therapists, and three speech therapists in our department, who collaborate with physicians from other departments in our hospital and therapists from Human Health Science, Graduate School of Medicine. We provide the following clinical services:
1) Prescription for the patients’ rehabilitation programs: to check patients’ request sheets for rehabilitation therapy, submitted by each attending physician, and prescribe a rehabilitation program suitable for each patient
2) Medical examination of the outpatients: to evaluate the patients’ physical condition before starting rehabilitation
3) Preparation of comprehensive rehabilitation plans of the patients: to evaluate the efficacy of the prescribed rehabilitation program on a regular basis
4) Regular conferences: to discuss select cases who are having problems in performing therapy to find a solution
5) Journal clubs: to read medical literature to acquire the latest information in specialized areas, including hand, shoulder, developmental, respiratory, and psychiatric problems

Advanced medical technology

Our team is performing various study projects, as follows:
●Gait analysis for patients with problems in walking to modify the rehabilitation programs
●Study on the relationship between brain plasticity and effects of rehabilitation exercises in patients having had peripheral nerve surgery by measuring intracerebral activity using near-infrared spectroscopy
●Study of the effectiveness of respiratory rehabilitation for patients with lung transplantation by measuring physical functions before and after surgery
●Analyzing the extent of recovery in the muscle force of patients with shoulder joint disorder using electromyography and ultrasonography

Department of Diagnostic Pathology

Director
Prof. Hironori Haga

Supporting patient management and treatment with informative pathology diagnosis

Board-certified pathologists and cytopathologists are available all the time in the Department of Diagnostic Pathology to support clinicians to make decisions. Each attending pathologist has subspecialties and is familiar with a variety of diseases and conditions in their specific fields. Therefore, we can provide accurate and reproducible histopathologic diagnosis with complete information that is essential for patient management. Even after completion of reports, we support clinicians by having conferences, since clinicopathologic correlation is crucial for quality assurance and optimal patient management.

Service characteristics and performance

All tissue and cytology specimens obtained from both outpatients and inpatients, including biopsy and surgical specimens, are submitted to the Department of Diagnostic Pathology for microscopic examination. In addition, intraoperative consultation is also one of our major tasks. The submitted materials are processed with adequate sampling after recording gross appearance, and are cut to produce hematoxylin and eosin (HE)-stained sections. Board-certified diagnostic pathologists review glass slides of sections to establish histopathologic diagnosis and issue a pathology report, which are sent online to attending physicians as soon as possible. Both gross and microscopic features of the specimens of selected cases are recorded in a digital format. A variety of histochemical staining and ancillary techniques, including enzyme or fluorescent immunohistochemistry and in situ hybridization, to visualize distribution of DNA or RNA on tissue sections, and electron microscopy, are also employed for diagnostic purposes. Since molecular targeted therapy is now available in cases of breast and gastric carcinomas, HER2 gene testing by DISH (dual color in situ hybridization) is performed routinely in the laboratory. Regular conferences provide additional information individualized for each patient, and contribute to attending clinicians, as well as performance and quality improvement of the department. In 2011, we employed a virtual slide system for conferences and educational purposes. Cytology diagnosis involves a total of five cytotechnologists for screening, and six board-certified cytopathologists for issuing final cytology reports. A liquid-based cytology system is used for gynecologic cytology. Finally, autopsy practice contributes to the safety management and quality improvement of the hospital by establishing final diagnoses of patients and examining the adequacy of treatment.

Data from 2012 show that the total number of surgical pathology cases was 12,786, and that of tissue blocks was 48,327. In addition, the total number of intraoperative consultations was 928 (cytology diagnosis, 581 cases), slides or blocks brought by outpatients from other hospitals for diagnosis was 716, and cytology cases was 14,397, 157 of which were brought by outpatients. The number of autopsy cases was 51 (in-house, 42 cases; other hospitals, 9 cases), with an autopsy rate of 11.6% in-house.

Clinical research activities

Accuracy of histopathologic diagnosis is crucial not only for supporting highly advanced medical treatment, but also for providing reliable data on cancer epidemiology. Central pathology review, which is an essential component in the current multicenter studies, including randomized clinical trials, is also our mission.

Central
Clinical Center, etc.

Clinical Laboratory

Director
Prof. Satoshi Ichiyama

“Practicing state-of-the-art clinical testing, Supporting advanced medical care.”

Our laboratory provides a wide variety of diagnostic testing, and we focus on using our services to support each doctor’s individual practice. Our emergency laboratory is open 24 hours a day, 365 days a year and provides quick turnaround times in order to report clinical test results to the doctor prior to the outpatient consultation. In addition, we have also recently opened an integrated ultrasound center.

1. We have created a fully-automatized and integrated blood analysis system that can perform many kinds of clinical testing with low cost and high efficiency. This system is a great contribution to clinical practice and clinical research.
2. As an information resource center of nosocomial infection, we work closely together with the Infection Control Team.
3. In our physiological laboratory section, we have increased the size of the Ultrasound Center and Polysomnography unit. We have also improved the quality of circulatory function tests and neurological tests.
4. In our gene and cell analysis laboratory, we provide crucial information for transplant therapy and cancer treatment.

Service characteristics and performance

The Department of Clinical Laboratory is the main department of the Central Clinical Center of this hospital. We provide the systems used to support our hospital’s responsibilities as a community-based medical care provider and educational facility, while also advancing the latest medical treatments.

Our department consists of five sections: 1) Fully-automatized and integrated blood analysis section; 2) Physiological laboratory section for ECG, EEG, etc.; 3) Integrated ultrasound center; 4) Microbiology section for detecting infectious pathogens; and 5) Gene and cell analysis section, which performs testing for the diagnosis of immune deficiency diseases and hematopoietic malignancy.

We offer flexible laboratory services in response to each doctor’s requests: 1) Emergency Laboratory (accepts after-hours test orders on a 24-hour, every day basis); 2) Blood transfusion section (accepts after-hours orders on a 24-hour, every day basis) for safe blood transfusion therapy. Many laboratory staff members who belong to other sections are on loan to the blood transfusion section for training; 3) Microbiology section (contributes to help control hospital-associated infection by providing laboratory service 365 days in the daytime); and 4) Overnight polysomnography (every test is performed under overnight monitoring by a technician). Moreover, we can flexibly accommodate various doctor requests, for example, those for a systematic response to clinical trial study.

In terms of actual achievement in 2012, the number of orders to our laboratory was about 8,370,000, an increase of 9.6% from the previous year. The total orders of specimen analysis, including blood analysis, microbiological specimens, and gene and cell analysis specimens, were 7,200,000. In comparison to the previous year, the frequency of testing was increased for a number of analyses, including hematological testing (17.8%), blood chemistry (7.7%), urine and body fluids analysis (6.6%), emergency laboratory (10.3%), blood collection (2.0%), gene analysis (13.7%), and cell analysis (11.7%). In terms of physiological testing, the total number of tests ordered was 73,000, with the rates increasing for the circulatory function test (3.9%), respiratory function test (5.6%), and ultrasound test (5.5%). We also provide rapid and high-quality clinical testing results as a supporting division for medical care, training, and clinical research. Although these figures indicate the importance of our laboratory, from the view of ensuring the quality of our medical services, it is required that we encourage doctors to utilize laboratory testing more efficiently.

Advanced medical technology

We play an important role in supporting medical care in all of the clinical departments as a part of the Central Clinical Center. In some laboratory tests, the tests themselves are very advanced. For example, quantitative assays of Epstein–Barr virus and Cytomegalovirus are essential for medical transplantation practice. We are working positively to utilize “Team Approach Health Care” as part of our work. Some of our staff also gives guidance about the self-monitoring of blood glucose (SMBG) for hospitalized patients at the diabetes education class. In addition, some of our staff is participating in the Nutrition Support Team (NST) and/or giving instructions for sputum collection at wards. We have received favorable remarks from other departments for this work.

We will continue to make a contribution to advanced medical care by practicing state-of-the-art clinical laboratory technologies and providing integrated clinical laboratory services with other medical departments as well.

Surgery Unit

Director
Prof. Susumu Miyamoto

Providing the safest and advanced surgical techniques to all patients

The Department of Surgery Unit of Central Clinical Center at Kyoto University offers the following services and technologies:

- A total capacity of 16 operating rooms including two clean rooms (NASA class 100) and one endoscopic operating room
- Endoscopic surgery equipment, an assisted surgery robot (da Vinci® surgical system), operating microscopes, C-arm X-ray imaging modalities, and medical laser equipment
- Sets of surgical instruments through the introduction of containers and their collection by automatic transfer device
- Digitization of anesthesia records and nursing records

Main target diseases

Diseases requiring surgical intervention during the hospital stay

Service characteristics and performance

Our Surgical Unit manages to perform safe and efficient surgeries together with the Day Surgery Unit (DSU). We have five doctors including the director, 75 nurses including the chief nurse, two technical staff members, and one assistant clerk. Eight biomedical engineers also work with us.

Anesthetic and nursing records are computerized and the final version of these records can be viewed through the electronic medical records of the hospital. The video transmission system allows the surgery (or operative field) to be viewed from outside the operation theatre. Furthermore, surgical instruments are packaged to shorten the preparation time and reduce the working burden of nurses. Pharmacists manage drugs used in the operating room, including opioids and muscle relaxants.

In the unit, a robot-assisted surgical technology (da Vinci® surgical system) has been introduced in 2011 owing to the increased number of surgeries. In addition to this, a high-standard operating room (Hybrid Operating Room) with state-of-the-art angiography equipment is under construction.

The number of surgeries performed in the Surgery Unit was 5,911 in 2012 (5,995 in 2011).

Advanced medical technology

We contribute to the advanced medical care of each clinical department at the Kyoto University Hospital.

The new Hybrid Operating Room

Clinical Radiology Service Unit

Director
Prof. Kaori Togashi

Central Clinical Radiology Service Unit comprising clinical departments

Department of Clinical Radiology Service Unit has four main sub-departments: imaging diagnosis, radiotherapy, nuclear medicine, and angiography and interventional radiology (IVR). All four sections are important to maintain modern, high-quality medical care.

Main target diseases

Almost all diseases

Service characteristics and performance

1) Imaging diagnosis examines approximately 800 cases using X-p, upper and lower gastrointestinal series, fluoroscopy, multi-detector computed tomography (MDCT), and magnetic resonance imaging (MRI). Radiologists, collaborating with radiological technicians and nurses at the Department of Clinical Radiology Service Unit, use MDCT and MRI for diagnosis. Since MDCT and MRI are currently the main imaging modalities used, the numbers of cases using MDCT and MRI are increasing. We currently have five fully functional modern MDCT machines. Last year, on an average, we performed 156 MDCT examinations daily and 38,170 annually. Based on these numbers, we were ranked first among national university hospitals. We also have four MR machines, out of which 3 are modern machines, as well as three fully functional modern 3-Tesla MR machines, which provide high-quality images. Last year, we performed, on an average, 55.5 MRI examinations daily and 13,533 annually.
2) The radiotherapy section comprises modern three-dimensional radiotherapy, stereotactic radiotherapy, and intensity-modulated radiation therapy (IMRT), which enables high-precision radiation therapy. In 2012, a total of 1,118 cases involved radiotherapy, and the breakdown of cases involving high-precision radiation therapy was as follows: 133 cases involved stereotactic radiotherapy (97 brains, 36 bodies), 177 involved IMRT (93 prostatic cancers, 31 head and neck cancers, and 53 others).
3) The nuclear medicine section has five fully functional machines, including modern PET-CT and SPECT-CT scanners. Last year, on an average, we performed 25.3 examinations daily and 6,076 annually in the Nuclear Medicine section. Morphological CT and functional PET images can be simultaneously obtained within a short duration of time via combined PET-CT scanning.
4) The IVR section has four fully functional machines, including two machines for cine-angiography, bi-plain DSA, and single-plain DSA. Last year, we performed a total of 3,311 interventions annually.

Advanced medical technology and clinical research activities

Please refer to the annual reports of the Dept. of Diagnostic Imaging and Nuclear Medicine and the Dept. of Radiation Oncology and Image-Applied Therapy.

Rehabilitation Unit

Director
Prof. Shuichi Matsuda

From physical training to restoration of high quality of social life

We provide patients with various kinds of rehabilitation therapy to reduce their impairment and disability, with the aim of ensuring fewer handicaps in their social life.

Main target diseases

Our therapy is targeted to patients with cerebrovascular disease, musculoskeletal disorders, neuromuscular disorders, respiratory problems, cardiovascular disease, pediatric disease including cerebral palsy and developmental disorders, and reduced activity of daily life after long-term medical treatment and surgery including lung or liver transplantation.

Service characteristics and performance

Our unit is composed of 2 medical doctors (one is board-certified in rehabilitation medicine), 13 physical therapists, 5 occupational therapists, and 3 speech therapists. We provide inpatients and some outpatients with rehabilitation therapy.

Physical therapy (PT)
PT improves the basic physical ability of patients with various kinds of impairments by providing exercises for muscle strengthening or joint motion and by using orthoses.

Occupational therapy (OT)
OT aims to provide patients with the ability to adapt to daily living. The occupational therapists evaluate the patients' ability to return to daily life, including their capability in eating or hygiene. They also give some advice to the patients about starting to work or going to school.

Speech therapy (ST)
In the ST unit, we perform evaluation and exercises for speaking, hearing, and swallowing in patients with disabilities in eating and difficulty in communicating with others.

In 2012, we performed PT on 59,831 patients, OT on 20,813 patients, and ST on 8,125 patients.

Advanced medical technology and treatment

In the PT unit, we quantitatively assess the moving capability and ability in daily living of the patients.
The OT unit has established specific programs targeting children with developmental disorders and patients with brain function impairments caused by brain traumas.

The ST unit is seeking a comprehensive approach for swallowing disorders, collaborating with other sections including the department of otorhinolaryngology and the department of nutrition.

Psychiatric Day Care Unit

Director
Prof. Toshiya Murai

Ensuring independent life through early recovery from disease

By conducting psychiatric occupational therapy and day care programs for both inpatients and outpatients who suffer from mental illness, the Psychiatric Day Care Unit of the Central Clinical Center at Kyoto University provides psychiatric rehabilitation services to realize early recovery and independent living in patients, as well as to help them resume work.

Main target diseases

Schizophrenia, mood disorders (e.g., depression and bipolar disorder), neurotic disorders (e.g., panic disorder, obsessive-compulsive disorder, and social anxiety disorder), eating disorders, epilepsy, and pervasive developmental disorders

Service characteristics and performance

The Psychiatric Day Care Unit, which was established in 1989, is the first of its kind among national university hospitals in Japan. Our team, which consists of psychiatrists, psychiatric nurses, occupational therapists, and clinical psychologists, provides psychiatric rehabilitation services. In 2002, the Psychiatric Occupational Therapy Room was established to carry out psychiatric rehabilitation for inpatients.

The psychiatric occupational therapy section conducts relaxation group therapy, recovery of basic function group therapy, and recovery of basic physical fitness group therapy for inpatients in order to stabilize acute psychiatric symptoms early. In the Psychiatric Occupational Therapy Room, while sharing a space with others, patients can perform their own activities depending on their individual states; this is called “Parallel Occupational Therapy.”

In order to promote the use of day care programs after discharge, patients are allowed to take part in the day care programs even while hospitalized. The purposes of day care services are recovery of mental and physical function, promotion of interpersonal exchange, improvement of reality testing, learning of life skills, and independent living. Furthermore, we offer day care programs including group activities, sport programs, tea parties, relaxation exercises, music programs, cooking programs, preparation for employment, and cafe programs.

Other activity

Cognitive-behavioral therapy for psychosis (CBTp): group cognitive-behavioral therapy for schizophrenic patients could promote independent living and return to work.

Department of Medical Equipment

Director
Prof. Yoshiharu Sakai

Ensuring services for safe and efficient supply of medical equipment

The Medical Equipment of Central Clinical Center offers cleaning, sterilization and maintenance of various medical instruments and materials. Services for at this department include the Supply Processing and Distribution (SPD) to prevent from occurring infection and medical error related equipment as well as staff training for safety handling of medical devices and response to failed devices.
Approximately 3,000 medical devices are collectively managed in our department. We strive to safely and efficiently manage medical equipment by providing its adequate maintenance and educational information to medical staffs.

Service characteristics and performance

Our services for cleaning/sterilization of medical equipment:

- Staff in the sterilization center consists of one nurse director, one nurse and contract supplier.
- Centralizing service of cleaning medical equipment except for some instruments of Oral and Maxillofacial Surgery outpatient clinic and contracted sterilized materials (9.05% of all equipment subjected to cleaning/sterilization)
- Operational instruments are cleaned by Surgery Unit, assembled (by contract suppliers) and sterilized by the sterilization center.
- Cleaning equipment includes three washer-disinfectors, one tubing washer, two ultra sonic cleaners, one thermostat chamber, three driers, one Reverse Osmosis and two KAVO QUATTRO cares.
- Sterilization equipment includes four autoclave and two ethylene oxide gas sterilizers. Physical, chemical and biological indicators are used as a sterility assurance of sterilized products.
- Starting to provide cleaning/sterilization and assembly of reusable products including infant incubators and bed cots in the NICU with inspection by the medical engineering with the number of procedures performed between June 2012 and February 2013 of 192

Our services for management/supply of medical materials:

- Applying labeling management in the supply center (number of managed materials of 76,951 per month)
- Performing sampling, questionnaire and presentation by manufacturers and taking inventory of materials by the supply center and the purchase affairs
- Introducing single-use bag valve masks to prevent from occurring accident with poor assembly and creating a check list of operating bag valve masks for adult, child and infant, because of major accident of the mask due to an assembly mistake that occurred in another hospital in 2012

Our support activities by clinical engineers:

The Medical Engineering Center has 23 clinical engineers who offer support services including maintenance of medical equipment, operation of life-support machines (e.g. respirators, blood purification machines and heart-lung machines), supporting work at Surgery Unit, Endoscope and cardiac catheterization unit. The team also offers the on duty/on call system to address medical device's problems and emergency surgeries.

Department of Transfusion Medicine and Cell Therapy

Director
Prof. Taira Maekawa

Towards Safe and Efficient Transfusion Service

At Kyoto University Hospital, development of translational research, which conveys the fruits of basic research to the hospital bedside, is one of our key responsibilities in addition to routine clinical activities. As a hospital, our primary mission is to provide safe and high-quality patient care and hospital services, with our secondary mission being to develop advanced medical care and therapies based on scientifically robust research. By pursuing both of these missions, we believe our facilities should be considered a de facto standard of care unit for transfusion medicine and cell therapy.

Main target diseases

All the patients in need of blood component therapy, cellular therapy, and specialized laboratory diagnostics

Service characteristics and performance

Our department was originally founded as “The Department of Transfusion Medicine” in 1973 and was reformed to “The Department of Transfusion Medicine and Cell Therapy” in 2003. Our team is conducted and supervised by certified physicians and technologists. The care unit is accredited by the Japan Society of Transfusion Medicine and Cell Therapy.

Our annual activities for last year were as follows:

1) 91,660.0 units of blood products were purchased from Red Cross Blood Center, and 92,077.5 units were shipped from our laboratory. In total, 4,382 bags of red blood cell products were irradiated (25 Gy) in house.
2) Blood typing (ABO and Rho(D)) tests (15,042/y), irregular antibody screening (7,288/y), irregular antibody identification (325/y), HLA typing (363/y), HLA antibodies (711/y), and lymphocyte cross-match (120/y)
3) Collection of autologous blood for transfusion (722U/y, 225 cases/y)
4) Preparation of blood products (washed RBCs and platelets) (370/y)
5) Peripheral blood stem cell (PBSC) collection (75/y), processing and storage of PBSCs (76/y), and removal of plasma from bone marrow graft (7/y)
6) Educational programs and hands-on training focusing on transfusion medicine was also provided for students of the medicine and human science department and medical residents.

Advanced care activities

We have developed a novel method to quantify IgG antibodies specific for blood group antigens A and B using surface plasmon resonance. We have also shown the significance of anti-HLA antibodies in patients who have received a liver transplant or have been diagnosed with congenital biliary atresia. In basic research fields, we have reported a number of novel molecular-targeted drugs for leukemia and cancer treatment. For the discovery of novel molecular targets, we are currently investigating the transcriptional regulation of normal hematopoiesis and leukemogenesis. Furthermore, one additional avenue of research we are focusing on mesenchymal stem cells as a source of cell therapy for a variety of diseases.

Center for Cell and Molecular Therapy (CCMT)

Director
Prof. Taira Maekawa

Cell therapy: A bridge between basic research and clinical care

During the development of advanced cell therapy for regenerative medicine, it is essential to isolate human cells having a specific high function or to produce a target cell from stem cells. Therefore, the process to prepare the cell (processing) is of higher importance rather than the existing pharmaceutical products. In order to process such human cells having high quality, the Center for Cell and Molecular Therapy (CCMT) at Kyoto University was established in October 2002, and was supported by the highly advanced medical technology program grant from the Ministry of Education, Culture, Sports, Science, and Technology. Currently, our center actively works toward the development of new therapies for treating intractable diseases by producing safe and high-quality therapeutic cells.

Main target diseases

Disorders treated with the following: pancreatic islet transplants, cell immunity therapy using dendritic cells for acute myeloid leukemia and for progressive melanoma, cell therapy for bone regeneration using mesenchymal stem cells, and therapy for wound bed formation using autologous culture skin.

Service characteristics and performance

Scientifically and ethically high-level technology that is reliable are required during the development of cell therapy and regeneration medicine. In addition to this, cell-processing complying with the Good Manufacturing Practice (GMP) standards and therapeutic human cells with quality assurance are required for the translational research applying cells. According to the “Guidelines on clinical research using human stem cells” (published by MHLW) enforced in September 2006, all institutions preparing human stem cells must meet requirements for GMP. In accordance, CCMT is a facility that meets the standards.

Significant achievements of CCMT are the following:

- Transplantation of pancreatic islet cells derived from a donor with cardiac arrest was first performed in a patient with severe I type diabetes mellitus in Japan in 2004.
- Transplantation of pancreatic islet cells obtained from a living donor was performed, this first one in the world, in 2005 (in collaboration with the Department of Hepatobiliary Pancreatic Surgery and Transplantation).
- Cell immunity therapy using WT1 peptide-specific donor-derived dendritic cell has been introduced since 2005 for patients with recurring cancer of the hematopoietic organ after transplantation of allogeneic hematopoietic stem cells (in collaboration with the Department of Hematology & Oncology).
- In 2007, initiation of the clinical trial, “Therapy for bone regeneration using mesenchymal stem cells“, was approved by the national committee, the first one in Japan (in collaboration with the Institute for Frontier Medical Science and Orthopaedic Surgery).
- In 2008, initiation of the clinical trial, “Therapy for wound bed formation using autologous culture skin” in patients with skin intractable ulcer (in collaboration with the Department of Plastic Surgery).
- Since 2011, cell immunity therapy has been started using dendritic cells against progressive melanoma (in collaboration with the Hematology & Oncology, and the Dermatology departments).

Advanced care activities

The Center for iPS Cell Research and Application (CiRA) was founded at the Kyoto University in 2010. This center pursues research for iPS cell therapy at the Facility for iPS Cell Therapy (FiT), which reflects the technical know-how of the CCMT. Other activities include in-hospital collection/ cryopreservation of hematopoietic stem cells and temporary storage of cord blood, supplied by the bank, for the transplantation of hematopoietic stem cells in Kyoto University. We also provide special programs for training the staff related to manufacturing/quality management in cell processing.

Department of Maternal and Perinatal Care

Director
Prof. Ikuo Konishi

Reliable and safe medical care for the mother and the baby

The Department of Maternal and Perinatal Care consists of two sections: the Obstetrics Section, which provides reliable and safe medical care for pregnant women and their baby, and the Reproductive Medicine Section, which provides advanced care for infertility patients. Our obstetricians and nurse midwives are specialists in routine delivery care, neonatal care, and lactation support. Our essential policy for the method of birth is “natural.” We also provide prompt and adequate care for high-risk pregnancies such as in the presence of severe pregnancy-induced hypertension, eclampsia, fetal growth restriction, placental abruption, and severe postpartum hemorrhage. Special doctors and staff for infertility offer advanced treatment options such as assisted reproductive technologies (ART) for couples with infertility problems.

Main target diseases

Normal pregnancy/delivery, threatened abortion, hyperemesis gravidarum, hydatidiform mole, ectopic pregnancy, fetal abnormality, cervical incompetence, preterm labor, early rupture of membranes, fetal growth restriction, multiple pregnancy, breech presentation, elderly primipara, placenta previa, polyhydramnios/oligohydramnios, pregnancy complicated with medical diseases or surgical diseases, obstetric infection, pregnancy-induced hypertension syndrome (PIH), eclampsia, placental abruption, massive bleeding after delivery, amniotic fluid embolism, shock, disseminated intravascular coagulation (DIC), pulmonary thromboembolism, cerebral hemorrhage, infertility, recurrent pregnancy loss, anovulation, polycystic ovary syndrome, habitual abortion, luteal insufficiency, antiphospholipid antibody syndrome, anomalies of the uterus, hyperprolactinemia, endometriosis, uterine myoma, adenomyosis, male sterility, and azoospermia/oligospermia.

Service characteristics and performance

Obstetrics Section:

- We provide care for many patients with pregnancy complicated with various medical and surgical diseases (e.g., diabetes, thrombocytopenia, systemic lupus erythematosus [SLE], hyperthyroidism, liver transplantation, breast cancer), who are referred from other departments of our hospital or from other medical clinics and hospitals.
- The total number of deliveries was about 370 per year, with a cesarean section rate of 40%.
- We offer the best perinatal care in cooperation with the Neonatal Intensive Care Unit (NICU) and other departments.
- Counseling service for fetal anomalies is available, in close collaboration with the NICU and the Clinical Genetics Unit.
- We provide optimal emergency care for women with high-risk pregnancies related to life-threatening complications, in close cooperation with all departments of our hospital.
- During the past 2 years, we had successfully saved the life of a patient with pulmonary embolism after delivery (with cardiopulmonary arrest on admission), a patient with cerebral bleeding and loss of consciousness, and 27 patients with massive postpartum bleeding (blood loss of 2,000–10,000 mL after delivery) who were saved by intrauterine balloon placement or arterial embolization. No patients required hysterectomy.

{Placement of transcervical intrauterine balloon tamponade}

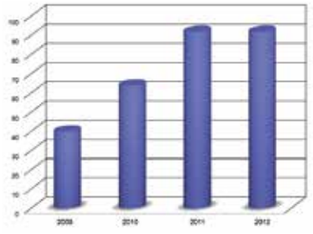
Reproductive Medicine Section:

- Offers ART such as in vitro fertilization-embryo transfer (IVF-ET), intracytoplasmic sperm injection (ICSI), and laparoscopic fertility-recovering surgery.
- Performed 65 IVF cycles in 2011 with a pregnancy rate of 17%.
- Offers treatment of male infertility in cooperation with the Urology Department.

Community health activities

We provide around-the-clock emergency services for pregnant women and receive patients with high-risk pregnancies in close collaboration with our Emergency Care Unit. We play a pivotal role in perinatal emergent medicine in Kyoto Prefecture.

Number of emergency referred maternity patients



Artificial Kidney Unit

Director
Prof. Motoko Yanagita

Providing medical services for all blood purifying therapies

1. Blood purification, hemodialysis, hemodiafiltration, apheresis (plasma exchange, double-filtration plasmapheresis, immunoadsorption, LDL adsorption, cytapheresis, etc.)
2. Preparation and reconstruction of vascular access
3. Dialysis as well as non-dialysis patient support for blood purification, and fluid and drug therapy for several tests, treatments, and surgical operations
4. Medical and extracorporeal therapy for acute kidney injury
5. Initiation and management of peritoneal dialysis
6. Educational program for pre-dialysis patients with chronic kidney disease

Service characteristics and performance

The artificial kidney unit of Kyoto University Hospital was established in 1962 and was the earliest among national university hospitals in Japan. The unit is the largest among these, possessing the most beds and the most equipment for blood purification therapy. The unit has been managed by the Nephrology Department since 2002, and has supported patients with kidney damage with medical as well as dialysis therapy in Kyoto University Hospital.

1. Blood purification facilities

We have 22 beds, 8 dialysis consoles, 15 hemodiafiltration consoles including 3 on-line systems, and 2 consoles for apheresis therapy. The therapeutic sessions are scheduled to take place once in 5 days, from Monday to Friday. Hemodialysis is mainly performed on Mondays, Wednesdays, and Fridays, and apheresis therapy is planned for Tuesdays and Thursdays for optimal bed control. The capacity of the unit is 30 patients. However, overbooked patients are often treated after regular sessions, supporting patients with initiation of dialysis therapy and patients who require tests, treatments, and surgical operations for their complications. We treated 344 dialysis patients in 2012, which has increased from 289 patients in 2011. However, the total dialysis number decreased from 4,360 to 4,119, indicating a reduction in hospitalizations. We also provided medical as well as extracorporeal therapy for patients with unexpected kidney injury in other departments.

2. Initiation of chronic dialysis therapy

Ninety-two patients had newly started dialysis therapy for end-stage renal disease in 2012. Among them, we treated 83 patients whose modalities were hemodialysis (HD) in 81 cases and peritoneal dialysis (PD) in 2 cases. Many serious cases were treated by us. Seventeen cases forcibly continued dialysis therapy after acute kidney injury. In the case of PD patients, we followed up with them after the initiation of PD in our hospital. We introduced HD patients to an appropriate dialysis center; however, we treated them when admitted to our hospital.

3. Peritoneal dialysis

We have 15 PD patients this year. They receive regular outpatient treatment once or twice a month on Tuesday or Thursday. The dialysis adequacy has been monitored by the measurement of weekly Kt/V of urea and by PET once a year.

4. Apheresis

We also handle blood purification, including plasma exchange and adsorption, for hepatic failure, autoimmune disease, neuromuscular disorders, acute intoxication, and hypercholesterolemia. Cytapheresis is performed for rheumatic disease and inflammatory bowel disease. In rare cases, we could attempt appropriate apheresis therapy for controlling disease activity.

5. Vascular access

Eighty-seven vascular accesses for hemodialysis were constructed in 2012. We collaborated with cardiovascular surgeons to use an artificial graft, and with interventional cardiologists to repair existing vascular accesses.

6. Cooperation

We have regular meetings once a week, where doctors responsible for hospitalized patients try to reach a consensus about the therapeutic policy and plan. We always accept consults from the medical staff of other departments about fluid, drug, and diet therapy.

7. Educational program for CKD patients

An educational program for pre-dialysis CKD patients was held in odd months as 3 independent lectures from kidney specialists, certified nurses, pharmacists, dietitians, and social workers. The number of participants increased from 109 in 2011 to 199 in 2012. The most popular program was the talk by a dietitian about protein and salt restriction, potassium reduction, menu choices in restaurants, and a special course for New Year. The certified nurse also attends the educational program for diabetic patients to prevent dialysis therapy, supported by the Ministry of Health, Labour and Welfare.

8. Others

This institution is authorized by the Japanese Society of Nephrology, the Japanese Society for Dialysis Therapy, the Japanese Society for Apheresis, and the Japan Society for Blood Purification in Critical Care. Thus, residents belonging to this unit could take a license as an each specialist. This institute participates in the educational programs on dialysis therapy for freshmen promoted by the Kidney Foundation, Japan. Doctors, nurses, and clinical engineers had also contributed to the in-hospital program for intensive care nurses to enhance their skills with the Patient Safety Unit.

9. Contribution to the next generation

We contribute to the medical treatment of the next generation sponsored by Kyoto University with our specialty.

Annual data

	2011	2012
hemodialysis	4360 (4350)	4119 (4113)
hemodiafiltration	1123	1141
Plasma exchange	459 (264)	454 (199)
Double filtration plasma pheresis	8 (8)	22 (22)
Immunoadsorption	22 (22)	21 (21)
Bilirubin adsorption	15 (4)	8 (8)
LDL adsorption	13 (10)	8 (8)
Endotoxin adsorption	19 (3)	22 (2)
Cytapheresis	49	56
PBS-CH	63	66
CART	2	19
Participants of Educational program	109 (fiscal year)	191 (fiscal year)
Vascular access	87 (fiscal year)	78 (fiscal year)
Access repair	33 (fiscal year)	45 (fiscal year)

( ); operated number in the dialysis unit

Department of Metabolism and Clinical Nutrition

Director
Senior Lecturer
Kazuaki Nagashima

Best care by nutrition specialists

The Department of Metabolism and Clinical Nutrition at the Central Clinical Center offers nutritional management via the hospital food for patients with various diseases. In order to improve nutrition therapies, the basis of our management plan is participation during the early stage of hospital stay and playing a pivotal role in the nutrition support team (NST) activity. We provide various bedside nutrition support programs including active management for individual patients, meal adjustment to improve nutritional status, selection of eutrophics as well as a nutrition assessment program using various physiological tests. Moreover, our team strives to acquire special qualifications such as certified diabetes educator, expert for clinical dietician, or health exercise instructor to practice nutrition therapy on the basis of advanced evidence and develop the human resources staff of the department.

Main target diseases

Diabetes mellitus, dyslipidemia, adiposity, cardiac disease, kidney disease, inflammatory bowel disease, and anorexia, among others

Service characteristics and performance

The clinical nutrition unit was first established at Kyoto University Hospital in 1938. After that, our department was approved by the Ministry of Education in 1981 as the only clinical nutrition unit among national university hospitals in Japan. Over time, we progressed from “lacked nutrition” to “excessed nutrition,” and our department has tried to expand treatment services and studies that correspond to the recent needs in close cooperation with physicians and nutritionists.

We have two specific sections: nutrition and metabolism. The nutrition section's services include (1) food dispensing (e.g. managing patient's meals in the hospital, menu planning, material managing, cooking instruction, and hygiene in the kitchen) and (2) nutrition instruction (e.g. guidance for individuals or groups of outpatients or inpatients, or custom-made nutrition programs) in cooperation with nurses and pharmacists. By 2012, 8,767 nutrition instructions were established. Our team has gained great popularity in cooking training and group seminars for each disease and is a leader among the national university hospitals. Moreover, we provided nutrition management programs for all inpatients and performed NST activity with detailed nutrition assessment and active dietary interventions 126 times in 2012.

The metabolism section offers services for the following physiological tests to evaluate nutrition status and diabetic complications: R-R interval change on the electrocardiogram (autonomic nervous function), body composition, basal metabolism, percutaneous oxygen saturation (in peripheral blood), thermography, and bone mineral density (by echography). In 2012, a total of 503 procedures were performed in this section.

Other activities

On the basis of the concept that improved nutrition status leads to a better effect on all inpatients, our team strives to address a variety of management services such as change from intravenous nutrition to enteral nutrition, as well as dietary intervention. We engaged in the following other activities:

- Sixteen meal type options for inpatients who underwent chemotherapy
- Optional aseptic meal menu for pediatric patients
- Post-delivery special meal for celebration at the obstetrics department with a good reputation

Intensive Care Unit (ICU)

Director
Prof. Kazuhiko Fukuda

Last Defense against Severe Systemic Diseases

The Intensive Care Unit (ICU) of the Kyoto University Hospital was founded in 1987, and provides intensive care and treatment to patients with acute organ failure regardless of the underlying diseases, which include respiratory, circulatory, or metabolic disorders. The ICU is equipped with 10 beds for critically ill patients, is located on the 4th floor of the Central Clinical Ward, and is directly connected to the operation theater. The ICU is authorized by the Japanese Society of Intensive Care Medicine as a facility for the training of certified critical care physicians. All the beds in the ICU are deemed suitable for critical care by the Ministry of Health, Labour and Welfare. Since its foundation, the ICU has functioned as a station for postoperative care and as a coordination center for highly advanced medical treatment by a variety of departments. The treatment and care in the ICU are provided by full-time physicians and nursing staff by the use of a high-efficiency patient surveillance system.

Main target diseases

Ⅰ. Postoperative care:
Major operations (cardiac, esophageal, hepatobiliary, and pancreatic surgeries)
Transplantation (liver and lung)
Special operations (neurological, orthopedic, otolaryngological, and pediatric surgeries)

Ⅱ. Critical care for acute organ failure:
Respiratory failure, shock, renal failure, severe infection, fulminant hepatitis, serious pancreatitis, multiple organ failure

Service characteristics and performance

The full-time staff of the ICU includes a lecturer (vice-director) and an assistant professor; some members from the Department of Anesthesia also participate in the daily activity of the ICU. Coordination between ICU physicians and anesthesiologists enables consistent perioperative management. The nursing staff, including a head nurse, 3 chief nurses, 36 nurses, and a nursing assistant, provides high-level care throughout the day. Many departments in the Kyoto University Hospital are involved in the daily activity of the ICU. The maintenance of medical equipment by medical engineers and drug control by pharmacists contribute to the safety management in the ICU. With respect to patient care, examples of multidisciplinary management in the ICU include non-invasive positive pressure ventilation by respiratory physicians and infection control by the infectious disease control team. Safety management in the ICU is also facilitated by periodical meetings with the patient safety unit. The yearly clinical performance is as follows: admission, ~680 patients; blood purification including plasma exchange and endotoxin absorption, ~120 cases; and circulatory assist, ~20 cases. The ICU physicians provide not only patient care in the ICU but also critical care in collaboration with emergency physicians in the emergency room, and they actively receive requests for emergency treatment from all departments of this hospital.

Advanced medical technology

Highly advanced medical treatment in which the ICU is involved includes liver and lung transplantation. Postoperative care in the ICU after the transplantation operations is performed in coordination with many departments. Since the renewal of the organ transplant law in 2010, transplantation from brain-dead donors has significantly increased. All the transplantation operations from brain-dead donors are performed emergently, and the recipients are unexpectedly admitted to the ICU; therefore, the bed control in the ICU is remarkably influenced by these operations, especially when multiple transplantation operations have to be done simultaneously. The demand for intensive care has increased because of patient aging and disease complications; therefore, the extension of the ICU from 10 beds to 16 beds is planned in this hospital.

Endoscopy Unit

Director
Senior Lecturer
Hiroshi Nakase

Patient-friendly endoscopy with early detection and gentle treatment

The Endoscopy Unit offers all diagnostic and therapeutic endoscopies for gastrointestinal, hepato-biliary-pancreatic, and respiratory diseases. In coordination with the Department of Gastroenterology and Hepatology, therapeutic endoscopies including endoscopic resection for early-stage gastrointestinal cancers, dilatation of gastrointestinal stenosis, and biliary drainage are performed in addition to esophagogastroduodenoscopy (EGD) and total colonoscopy (TCS) for screening.
Emergency endoscopic procedures for hematemesis or acute abdomen are provided on 24-hour schedules. Furthermore, bronchoscopic procedures for mainly chronic respiratory diseases are performed by specialists in the departments of respiratory medicine and thoracic surgery.

Main target diseases

Ⅰ. Benign disorders:
Chronic respiratory disease, esophageal varix, gastroesophageal reflux disease, esophageal achalasia, *Helicobacter pylori*-related gastritis, gastric polyp, duodenal polyp, small intestinal polyp, small intestinal angiectasis, cholelithiasis (cholecystolithiasis, choledocholithiasis, intrahepatic cholelithiasis), cholangitis, cholecystitis, acute pancreatitis, chronic pancreatitis, intraductal papillary mucinous neoplasm of the pancreas, mucinous cystic tumor of the pancreas, ulcerative colitis, Crohn's disease, Behcet disease, and colon polyp
Ⅱ. Malignant disorders:
Laryngopharygeal cancer, lung cancer, esophageal cancer, gastric cancer, duodenal cancer, cancer of the duodenal papilla, bile duct cancer, gallbladder cancer, pancreatic cancer, colon cancer, small intestinal cancer, gastrointestinal malignant lymphoma, and gastrointestinal stromal tumor (GIST)

Service characteristics and performance

In close collaboration with the gastroenterology and hepatology departments, we routinely perform EGD in the morning and TCS in the afternoon. In addition to screening endoscopy, other services include ultrasonic endoscopy, double-balloon small bowel endoscopy, endoscopic retrograde cholangiopancreatography (ERCP), endoscopic submucosal dissection for early gastric cancer, and biliary drainage. In recent years, such diagnostic and therapeutic methods have become technologically advanced.
The total number of endoscopic examinations, which has been increasing year by year, was 10,844 in 2012 (of these, 6,161 were for EGD, 2,549 for TCS, 100 for small-bowel endoscopy [double-balloon endoscopy and capsule endoscopy], 624 for ERCP, 430 for endoscopic ultrasonography [EUS], 528 for bronchoscopy, and 452 for emergency endoscopy).

Meanwhile, we contribute to medical transplantation in Kyoto University through treatment of esophagogastric varices before/after living donor liver transplantation and endoscopic surveillance for transplanted small intestine.
Since the narrow band imaging (NBI) system was introduced in EGD, the improved detection rate of superficial laryngopharyngeal cancers has led to increase in endoscopic laryngopharyngeal surgery under general anesthesia.

Education for specialists

One of the important social duties of a university hospital is to train specialists. Training for endoscopy is important because all examinations should be safely and efficiently performed to reduce the patient's burden. On March 2012, a simulator system for endoscopic training (Simbionix, USA) sponsored by Kyoto Prefecture was set up in our unit. The simulator is a virtual reality training tool that enables resident physicians or medical students to experience several endoscopic procedures through a three-dimensional image. Because this system also has simulation programs for EUS and ERCP, it is expected to improve the skill of not only beginners but also experts.

Organ Transplant Medical Care Unit

Director
Associate Professor
Toshimi Kaido

Organ transplantation medical care unit that leads Japanese organ transplantation treatment

1) Perioperative management, registration, and long-term follow-up of patients undergoing living and deceased donor liver transplantations, deceased donor pancreas and islet transplantations, and living and deceased donor small intestine transplantations
2) Experimental and clinical implication of islet transplantation
3) Pathological examination related to transplantation
4) Transplantation coordinator works

Main target diseases

1) Liver transplantation: Biliary atresia, metabolic disease, acute liver failure, hepatocellular diseases such as hepatitis B or C virus-associated liver cirrhosis, progressive intrahepatic cholestasis including primary biliary cirrhosis and primary sclerosing cholangitis, hepatocellular carcinoma, etc. 2) Pancreas and islet transplantation: Severe diabetes mellitus (DM), DM-induced kidney failure (simultaneous pancreas-kidney transplantation) 3) Small intestine transplantation: Short bowel syndrome, small intestinal failure

Service characteristics and performance

Adjustment of immunosuppressive therapy, organized patient management mainly for infectious disease, use and management of medical equipment for transplantation, quick histologic diagnosis for rejection, transplantation coordinators who perform long-term adjustment of these duties, and the general organization including mental care of the patient and family are necessary to promote a smooth organ transplantation treatment. An organ transplantation medical care unit was established in April 1999 to promote organ transplantation treatment.
The unit comprises several doctors who belong to the hepato-biliary-pancreatic and transplant surgery, respiratory surgery, gastroenterology, and pathological diagnosis departments, along with some coordinators who perform preparations for evaluations, brain death transplant registration, perioperative care, and long-term management. "The transplantation information room" is located at the crossing of the fourth floor hospital street and the central medical treatment ridge elevator hall. As of June 2013, we have performed approximately 1,650 liver transplants, the maximum number of cases in Japan. Especially, we have led the world in terms of operative technique as well as the perioperative care of living donor liver transplantation.

Advanced medical technology

Living donor liver transplantation became a medical service under health insurance coverage after highly advanced medical technology was developed (except for progressive liver cancer). Additionally, preventive immunoglobulin administration became an insurance measure by application of the data obtained at our hospital after hepatitis B transplantation as of March 2008. Deceased donor liver transplantation became a medical service under health insurance coverage after highly advanced medical technology was developed as of April 2006. As a system to assess the new medical technology using a drug that did not receive approval by the Drugs, Cosmetics, and Medical Instruments Act from 2008, a medical service under health insurance, i.e., a high medical evaluation system, was founded to substitute the highly advanced medical technology system. Pancreatic islet transplantation was approved by the high medical evaluation system in October 2010.

Clinical Genetics Unit

Director
Prof. Toshio Heike

The genetic counseling services are located close to you

The Clinical Genetics Unit has clinical geneticists and genetic counselors who provide genetic counseling for all issues related to genes or heredity. They give appropriate information to each client based on the most up-to-date information about genes and diseases. For each genetic test, we not only explain the medical and technical information about the test but also discuss the necessity of the test for the client. The goal of counseling is to provide enough information for the client's autonomous decision. The genetic issues should be shared among the family as well as the clients; therefore, our counseling services are also provided for related persons. The genetic counseling services are located close to you.

Main target diseases

We provide consultations about overall hereditary problems and genetic disorders (for example, congenital abnormalities due to gene mutation, familial tumor syndromes, chromosomal aberrations, hereditary hearing loss).
Please note, we do not accept parentage testing.

Service characteristics and performance

Clinical genetic counseling at the Kyoto University Hospital has started since 1996. In order to respond to increasing requests for genetic counseling, the "clinical genetics unit" was established in March 2001. There are five clinical geneticists and two certified genetic counselors with each specialty in our unit. The clinical geneticists and certified genetic counselors are approved by the Japan Society of Human Genetics and the Japanese Society for Genetic Counseling. Under the consideration for privacy, information about all the cases is shared to ensure the quality of genetic counseling. In some cases, we also collaborate with clinical psychologists. Our counseling aims to provide help for overall hereditary problems and genetic disorders. For this purpose, we cooperate with all the departments of our hospital handling hereditary and genetic problems, i.e., the departments of internal medicine, surgery, urology, otolaryngology, gynecology and obstetrics, pediatrics, and ophthalmology.

Research activities

Since the designation as a "Clinical Trials Core Hospital" by the Ministry of Health, Labour and Welfare, our clinical genetics unit has obtained a new mission for personal information protection/genetic counseling accompanied by clinical trials and/or human genome analyses under the direction of the Ethics Committee. Due to this change, new staff have joined our unit since April 2013, and our genetic counseling room is now open throughout the day. In addition to the clinical trials mission, we continue to provide genetic counseling for all cases; please feel free to contact us.

Department of Infection Control and Prevention

Director
Prof. Satoshi Ichiyama

Expert team to address all events related to infections

The Department of Infection Control and Prevention in the Central Clinical Center is one of the few facilities in Japan that provides comprehensive care for infection control and its diagnosis. In close collaboration with infection control nurses (ICNs), clinical technologists, and pharmacists, our infection control doctors (ICDs) provide the following medical care:

1) Diagnosis and intervention for infection (optimizing infection diagnosis/treatment and addressing emerging infectious diseases/resistant bacterial infections)
2) Infection control in the hospital (infection surveillance, promoting infection control/outbreak control, preventing exposure to blood/body fluids, vaccination, educational training of staff, creation/revision of guidelines for prevention and control of nosocomial infections, and disposal of infectious medical waste)

In order to practice in clinical settings, our team offers such services in multiple and comprehensive ways.

Main target diseases

Ⅰ. Bloodstream infections, bacteremia (all in-hospital blood culture-positive cases), infectious diseases caused by resistant bacteria
Ⅱ. Opportunistic infections related to organ transplantation or immunosuppressive therapy (e.g., fungal infections, tuberculosis, and viral infections)
Ⅲ. Intractable infections (based on consultation with doctors from the departments or results of microbiological tests), and severe infections needing specialized management

Service characteristics and performance

The Department of Infection Control and Prevention was established in October 2002. Since then, we have provided preventive programs for all infectious diseases that may occur in the hospital. Our team consists of ICDs, ICNs, clinical technologists, pharmacists, and office staffs. We offer two main services as follows:

1) Support/intervention for infection control
To optimize infection control and improve patient outcome by reducing infection by resistant bacteria and medical costs, we have applied this system in our clinical setting from the time of establishment. Detailed services include the following:
- Consultation from other departments
- Prompt control of severe and intractable infections (based on the result of microbiological tests and information from the pharmacy)

The annual number of treated patients was over 1000. With adequate care and comprehensive control for infection, the rate of collection of 2 samples for blood culture and outcomes of patients with *Staphylococcus aureus* or *Candida* bloodstream infections have improved.

2) Prevention measures in clinical settings are as follows:
- Detection and control of infection outbreaks
- Addressing health control for medical staffs (e.g., prevention of needle punctures/fluid exposure, required vaccination)
- Conducting infection surveillance and educational seminars
- Warnings/instructions to prevent in-hospital outbreaks during noticeable detection of resistant bacteria such as methicillin-resistant *Staphylococcus aureus* (MRSA) or multidrug-resistant *Pseudomonas aeruginosa*
- Evaluation of hospital infections to improve staff awareness to prevent contacting the infectious source

Advanced care activities

Infection control is essential for cutting-edge and advanced medical care in Kyoto University Hospital. For the success of infection control programs, we strive to provide early diagnosis and treatment to patients receiving immunosuppressive therapy after organ transplantation by conducting regular conferences and routine rounds in inpatient wards and creating prevention guidelines in collaboration with the other departments. In addition to these, we mainly address clinical research themes for infection as follows:

- Infection surveillance and prevention measures
- Diagnosis and prevention of various opportunistic infections in immunosuppressed individuals
- Active surveillance of resistant bacteria (e.g., multidrug-resistant *Pseudomonas aeruginosa*, vancomycin-resistant enterococci, MRSA, and extended spectrum beta-lactamase producing gram-negative bacilli)
- Impact on patients' prognosis and analysis of the mechanisms of antimicrobial resistance of microorganisms

Cardiovascular Care Unit (CCU)

Director
Prof. Takeshi Kimura

The best and most thoughtful medical care for all patients

The CCU is located on the 1st floor in the south ward, which is designed functionally with easy access to both the Emergency Department and the cardiac catheterization room. All six beds are equipped with monitors for vital signs. Moreover, special care for severely ill patients is taken with assisted circulation apparatuses such as percutaneous cardiopulmonary support (PCPS) and intra-aortic balloon pumping (IABP). Blood purification is also possible with dialysis CHDF (continuous filtration dialysis apparatus).
The CCU was founded in 2006. The number of emergency patients has increased, and it has had fairly good medical facilities during the past 7 years.
We will make an effort to fulfill requirements for home doctors and emergency teams quickly, with a high level of medical care.

Main target diseases

Acute myocardial infarction, unstable angina, acute aortic dissection, heart failure, chronic heart failure, acute pulmonary embolism, severe arrhythmia, cardiopulmonary arrest, acute myocarditis, post cardiovascular surgery, etc.

Service characteristics and performance

For the medical treatment of severe cardiovascular diseases, a CCU (6 beds) was founded in Kyoto University Hospital on 1st June 2006, after it had been earnestly requested by physicians in the Department of Cardiology. Since then quick medical care has been possible for patients with cardiovascular diseases requiring emergency treatment, such as acute myocardial infarction, acute heart failure, severe arrhythmia, and acute aortic dissection. It also means that Kyoto University Hospital plays a further important role in the cooperation between hospital-clinic and hospital-hospital.
It should be noted that the CCU has generally been considered to stand for Coronary Care Unit, which means an Intensive Care Unit for patients with coronary artery diseases such as acute myocardial infarction. However, recently, the facilities have been changing in that besides coronary artery diseases, various cardiac diseases including severe heart failure, acute aortic dissection, severe arrhythmia, and post cardiovascular surgery are widely treated. Therefore, although the CCU of Kyoto University Hospital uses the same abbreviation, we aim at a meaning of Cardiovascular Care Unit, which shows care for an extensive range of cardiovascular diseases.

Advanced medical technology

Recently, intravascular care for structural heart disease (SHD) has attracted attention, and since 2012, we have also conducted percutaneous atrial septal defect (ASD) procedures (Fig. 1). After 2013, we plan to introduce a percutaneous aortic valve replacement procedure (TAVI) (Fig. 2) for aortic valve stenosis. Both procedures are characteristically minimally invasive, and thereby more gentle for patients. We will continuously make a daily effort to develop novel intravascular procedures for patients.

Fig. 1

Fig. 2

Consultation Room for Women's Mental and Physical Health

Director
Prof. Ikuo Konishi

Best consulting service for individual women and their families

The Consultation Room for Women's Mental and Physical Health of the Central Clinical Center offers a variety of consulting services for female conditions: mental problems in adolescence, adulthood, climacteric age, and senile age, development disability, and problems in pregnancy, infertility, sterility, breastfeeding and child-care. The purpose of this consulting room is to provide consultation opportunities to pregnant or puerperal women who face obstetrical and gynecological having problems that cannot be solved by themselves. Our room staff members include a midwife nurse, a physical therapist as well as a certified clinical psychologist of the human health science, Kyoto University school of medicine. We also receive consulting requests form patient's families.

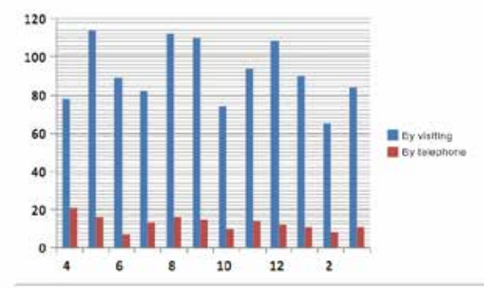
Main target diseases

All physical and psychosocial problems among females, including menopausal disorders, menstrual disorders, infertility, trouble with breastfeeding, stopping nursing, child care, self-care for lymphedema, sleep disturbance and health enhancement in middle or advanced age

Service characteristics and performance

The aim of our consultation room is to comprehensively address both aspects of mental and body experienced in the women's life cycle. We have two consulting service sections: "consulting room" and "mama-baby consultation." The former section offers consultation services for various matters from child care to postoperative drainage, and patient's request for consultation telephonically (Tue and Thurs, 1 pm to 3 pm). Certified specialists manege our consultation services on a rotating basis. The latter section offers services related to breast care, child care and life health guidance to pregnant or puerperal women visited in the obstetrics and gynecology (on weekdays). In recent years, we have started a "Care Outpatient Unit by Midwife Nurses" that offers counseling services for a wide range of matters related to maternity (e.g. infertility and weaning food).

The total number of consultations with certified clinical psychologists of the human health science was 96 in 2012. The total number of mama-baby consultation was 1,254 in the same year (see Table).



Number of patients using Mama-baby Consultation

Neonatal Intensive Care Unit (NICU)

Director
Prof. Toshio Heike

More advanced neonatal care based on evidence

The neonatal intensive care unit (NICU) and growing care unit (GCU), in cooperation with the perinatal maternal medical care unit (delivery unit), are providing a clinic with 24-hour service. Since we obtained an approval of social insurance as NICU in 2003, we now became one of the core facilities in Kyoto Prefecture. We are actively engaged in the treatment of low-birth-weight infants. In addition, we are engaged in the treatment of infants with surgical and heart diseases. Treatment of these infants requires cooperation with the other departments.
Having extended the NICU9 floor and GCU12 floor in 2010, we have become even more important in the regional medical facility. Our hospital has been designated as a key training facility for neonatal specialists. We have presided over the “Japan Neonatal Endocrine Study Group” and the premature neonatal care study group, and have gained a reputation as a cornerstone of education and research.

Main target diseases

Admitted subjects have abnormal perinatal conditions (such as asphyxia, meconium aspiration syndrome), bleeding disorders (such as melena, DIC), and congenital malformations (such as a surgical disease, heart disease) in addition to being low-birth-weight infants. In particular, as the core facility, we have been more aggressively accepting hospitalization of infants with surgical and heart diseases that require cooperation from other departments, and infants born from mothers with complications of pregnancy.

Service characteristics and performance

Annual hospital admissions have reached 150 to 160 cases, and hospitalization of critically ill patients has been increasing. About 75% of the NICU hospitalized patients were born in our hospital. They were born from mothers treated at the Department of Obstetrics and Gynecology in the Kyoto University Hospital; most of them were transported urgently. In addition, as we are participating in the Kyoto perinatal medical information network, the number of neonatal transports from other hospitals is rapidly increasing. Currently the number of very-low-birth-weight infants and extremely-low-birth-weight infants (ELBW) is about 40 per year, and it has progressively increased in the last few years. The survival rate of very-low-birth-weight infants has been more than 95% in the last few years. The survival rate of ELBW infants has also been more than 90%. The survival rate of ELBW infants who do not have heart disease or severe chromosomal abnormality is almost 100%. In addition, the frequency of periventricular leukomalacia or intracranial hemorrhage is very low, and many of the infants who survived have no sequelae. Severe surgical diseases, such as congenital diaphragmatic hernia, esophageal atresia, small intestinal atresia,, Hirschsprung's disease, and congenital tracheal stenosis, is are also actively treated in our NICU. We are always collaborating with pediatric surgeons. By the enhancement of the pediatric cardiology department and the pediatric cardiovascular surgery department, the number of hospital admissions for congenital heart disease has also been increasing in the past few years. The number of patients with congenital heart disease has reached about 40 cases per year. In addition, nearly 10 preterm infants undergo surgical treatment for ductus arteriosus every year; some of them are transferred from other NICUs. We are also able to perform hypothermia therapy for severe neonatal asphyxia. We are conducting follow-up of patients after discharge in our hospital pediatric department.

Research activities

Besides clinical medicine, we are mainly engaged in clinical research on “neonatal endocrinology.” We are trying to clarify the endocrine function of preterm infants, such as thyroid and adrenal functions. We are also working as the center of a nationwide research organization called "Japan Neonatal Endocrine Study Group." We conducted a national survey on adrenal insufficiency and thyroid hormone preparations in 2009, and conducted a national survey on hyperinsulinemic hypoglycemia in 2011. On the basis of these findings , we have published several new findings in top endocrine journals.
In addition, we are performing clinical research in collaboration with the Kyoto University Faculty of Education (Myowa Masako Associate Professor) in order to clarify the emotional growth of newborns.

Stroke Care Unit (SCU)

Director
Prof. Susumu Miyamoto

First-Rate Medical Care for Even Familiar Emergency Diseases is Delivered Faster Through the Power of Teamwork

A Stroke Care Unit (SCU) is a medical system in which a team comprising doctors, nurses, physical therapists, caseworkers, etc. with expertise in strokes comprehensively treat stroke patients from the acute treatment phase through to the support provided after they are discharged from hospital. The therapeutic management of acute stroke patients at SCUs has been proven to significantly improve long-term prognoses, and medical care provided by multi-departmental and multi-disciplinary teams is becoming essential for the modern medical treatment of strokes.
The SCU at Kyoto University Hospital aims to achieve the following goals:
(1) A twenty-four hour system for the acute treatment of strokes
(2) Medical care provided by a multi-departmental and multi-disciplinary team
(3) Integrated medical care for the purpose of providing seamless care
(4) Fostering of doctors and certified nurses who specialize in strokes
(5) Work towards the highly advanced medical treatment of cerebrovascular accidents

Main target diseases

Ⅰ. Hemorrhagic cerebrovascular accidents
1) Subarachnoid hemorrhage: cerebral aneurysm
2) Brain hemorrhage: hypertensive intracranial hemorrhage, cerebral arteriovenous malformation, moyamoya disease, dural arteriovenous fistula, sinus thrombosis, amyloid angiopathy, etc.

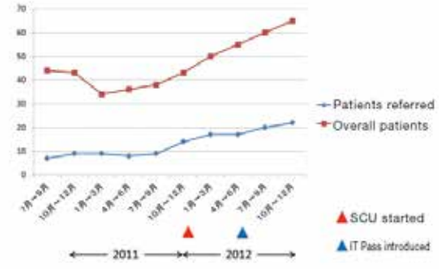
Ⅱ. Ischemic cerebrovascular accidents
Cerebral infarction: cardiogenic embolism (atrial fibrillation, infective endocarditis, patent foramen ovale, pulmonary arteriovenous fistula, etc.), atherothrombosis (cerebrovascular stenosis and occlusion, carotid stenosis and occlusion, etc.), lacunar infarction, moyamoya disease, etc.

Service characteristics and performance

The Department of Stroke Treatment at Kyoto University Hospital was established as a formal organization in September 2011 through the close cooperation of the Department of Primary Care and Emergency Medicine, the Department of Neurology, and the Department of Neurosurgery. The SCU became fully operational in December 2011. Since March 2012, the SCU has been recognized as the medical institution responsible for the acute treatment of strokes in Kyoto Prefecture. In July 2012, a regional cooperation clinical pathway for strokes utilizing the Internet was launched as part of Kyoto Prefecture’s plan to promote cooperation for rehabilitation across the region, facilitating seamless care.
Six SCU beds were installed on the third floor of the South Ward, and a total of 12 doctors from 3 departments with at least 5 years’ experience treating strokes, including Assistant Directors Kazumichi Yoshida (Department of Neurosurgery), Youhei Takenobu (Department of Primary Care and Emergency Medicine) and Akihiro Kitamura (Department of Neurology), provide regular care and serve as on-duty doctors under the supervision of Susumu Miyamoto, Director of the Department of Neurosurgery. As for nursing, a patient-to-nurse ratio of 3:1 is maintained in which 20 nurses work in three shifts under the guidance of Chief Nurse Yuki Adachi. For rehabilitation, a dedicated physical therapist is assigned to each patient in order to enable early initiation of rehabilitation from the bedside.

In fiscal year 2012, the SCU treated 298 patients (109 men and 159 women), and these patients were hospitalized for a mean of 7.4 days. Although ongoing effort is required to achieve the 5 major goals mentioned above, the efforts of the Department of Stroke Treatment, which began with the establishment of the SCU, have produced solid results, including an increase in the number of hospitalized stroke patients and a reduction in the number of days spent in hospital.

Change in number of patients

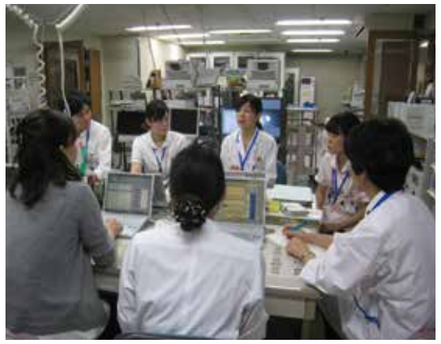


Advanced medical technology

The SCU actively provides highly advanced, round-the-clock medical treatment, such as acute revascularization for ischemic disease by using the latest devices, cerebral aneurysm embolization for subarachnoid hemorrhage, and intracerebral hematoma removal by using neuroendoscopy. The SCU is also working on advanced medical treatments based on new concepts for treating giant cerebral aneurysms and thrombosed aneurysms, which cannot be treated by standard craniotomy and clipping or coil embolization and for which an effective treatment protocol has yet to be established. It has had some success with these treatments, which include stereotactic radiation therapy of the aneurysm wall and combination therapy in which hemodynamics are modified by combining direct surgery with endovascular treatment, for example, and either reducing the aneurysm itself or inducing thrombogenesis in areas other than the vascular lumen by reducing stress from blood flow to the aneurysm.

Psychological Support Service for Patients and Famillies

Director
Prof. Satoshi Ichiyama



Supporting inpatients and their family members psychologically

We offer psychological supports to inpatients undergoing treatment for various diseases at clinical departments, and to their family members.

Service characteristics and performance

The Office was established in April 2014. In the Office two clinical psychologists support inpatients and their family members psychologically.
While hospitalized, inpatients and their family members may feel confused and anxious, and think about medical examinations or treatments, thus they sometimes need psychological supports. We, clinical psychologists, listen to the inpatients and family members as they talk about what they may feel and think. From a psychological point of view, we help inpatients and their family members find better approaches to solving their problems. If necessary, we collaborate with the department of Psychiatry. Additionally, through participation in ward conferences and meetings, we collaborate with ward staffs to offer better supports to each inpatient.

This fiscal year, we are involved mainly with Department of Obstetrics, NICU, Department of Rheumatology and Clinical Immunology, and the Department of Pediatrics; we plan to work at more wards. In February 2013, Kyoto university hospital was certified as a Pediatric Cancer Core Hospital. If necessary, we collaborate with the Palliative Care Team and support inpatients and their family members in the Department of Pediatrics.

Other activities

Medical institutions' measures to prevent suicide
We work with Patient Safety Unit, and are engaged in the activities to prevent suicide at medical institutions

Institute for Advancement of Clinical and Translational Science (iACT)

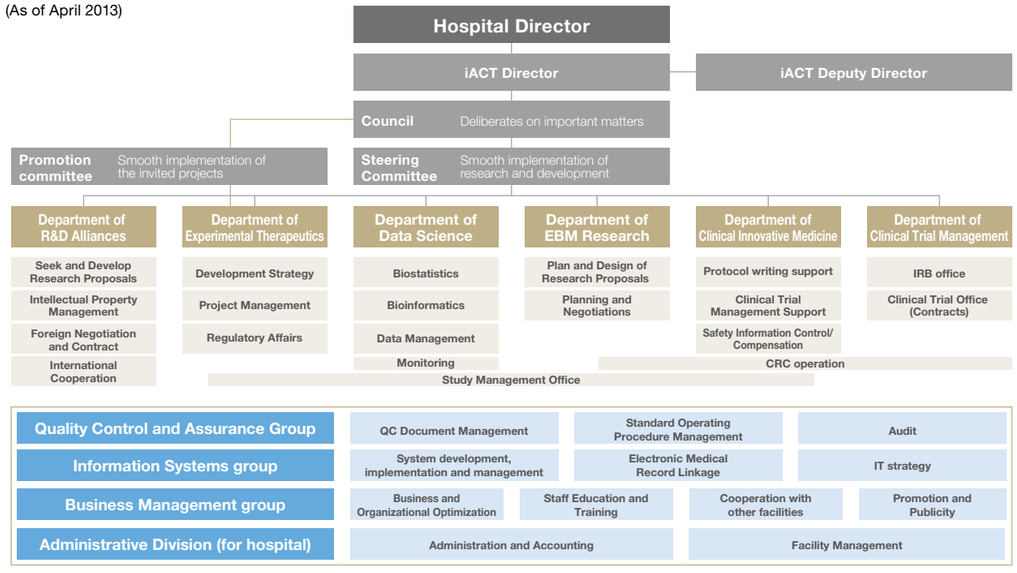
Director
Prof. Ryosuke Takahashi

Best global support groups of clinical research

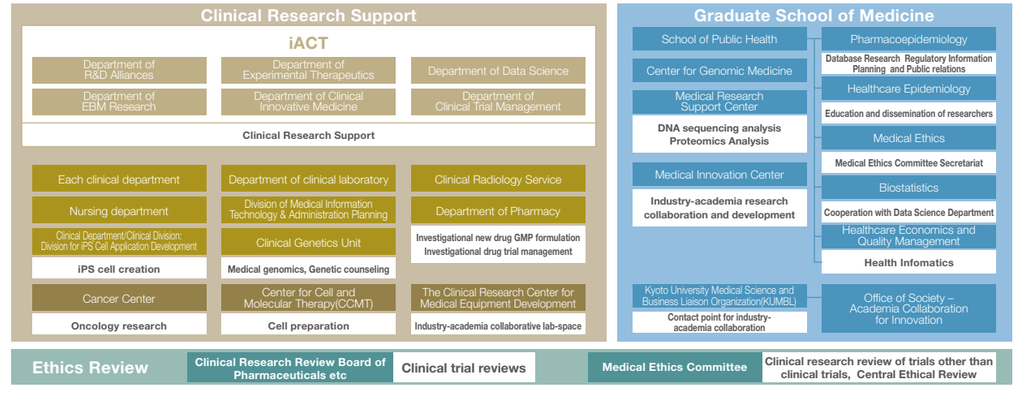
In June 2012, Kyoto University Hospital was selected as one of the five designated "Core Clinical Research Hospital" by the Ministry of Health, Labour and Welfare in order to develop innovative medical drugs and devices of high international standards through investigator-initiated IND/IDE trials as well involvement in post marketing research of clinical drugs. In response to this designation, departments such as the Translational Research Center, Center for Clinical Pharmacology and Therapeutics, EBM Research Center and the Department of R&D and Corporate Integration were unified into one organization and made a fresh start from April 2013 as the "Institute for Advancement of Clinical and Translational Science (iACT)". Thus it aims to extend support in all matters related to investigator-initiated IND/IDE trials, monitoring and execution of clinical trials through collaboration, information exchange, personnel support training so as to carry out high quality clinical research.

Institute for Advancement of Clinical and Translational Science (iACT) System

(As of April 2013)



Clinical research support system at Kyoto University



Department of R&D Alliances

Director
Prof. Muneo Takatani

Promotion to seamless technology transfers and intellectual property management

Based on the results of research on life science fields at Kyoto University, the R&D Alliances at Kyoto University actively seeks to perform a seamless approach for technology transfer including identifying clinical research proposals, patent filing, negotiations, contract and industrialization, and supports to get funding through alliance activities. In addition to these activities, we actively support global activities for clinical research proposals in collaboration with university hospitals and research laboratories in Japan and foreign countries. Moreover, in close cooperation with the office of society-academia collaboration for innovation (SACI) and the medical science and business liaison (KUMBL), R&D alliances promote activities including management of intellectual property related to clinical research and technologies transfer to domestic and overseas pharmaceutical companies in a more unified way.

Department of EBM Research

Director
Prof. Kenji Ueshima

Planning and performance of academia-leading clinical/epidemiological

To practice clinical evidence in Japan and transmit it worldwide through academia-initiated clinical trials, the Evidence Based Medicine (EBM) Collaborative Research Center at Kyoto University was established in February 2001. This institute represents the first collaborative effort for clinical research at national universities in Japan. This center has performed various clinical trials such as the CASE-J study and epidemiology studies over the past 10 years.
The EBM Research Department at the EBM Collaborative Research Center aims to create protocols for clinical study, recruit patients, manage data, perform bio-statistical analyses, and promote collaboration amongst physicians. This department also subjects newly approved drugs and medical devices to academia-initiated clinical trials and epidemiological studies.

Department of Experimental Therapeutics

Director
Prof. Akira Shimizu

Aiming at clinical application by both fixed and fluid projects

For new therapies that are developed through basic research proposals to be applied to clinical use, a wide variety of operations is required from the planning of research proposals to the completion of clinical trials. The Department of Experimental Therapeutics organizes and conducts these comprehensive activities. The activities are composed of the following three actions. First, in response to consultations with researchers and industry experts, “Strategy and Planning” promotes the supporting of patent applications with a focus on “commercialization” and obtaining of fast track regulatory approval. Second, “Project Management” promotes the execution and completion of the project by organizing teams of experts. Furthermore, “Regulatory Negotiation” ensures that the development of medicines and medical devices proceeds efficiently as per regulations. In this way and through these operations, we have established a support system that can be implemented smoothly and quickly for investigator-initiated IND/IDE trials.

Department of Clinical Innovative Medicine

Director
Prof. Masayuki Yokode

Support to exploratory clinical studies from a team of multidisciplinary professionals

The Department of Clinical Innovative Medicine is responsible for providing operational support to investigator-initiated IND/IDE exploratory trials by organizing a full-time multidisciplinary team consisting of nurses and pharmacists, clinical laboratory technicians, clinical psychologists, and physicians. Our current operations range from protocol creation and support (planning, integrating, and reviewing study protocol), coordination and organization of clinical research including multi-center trials, management of safety information, and consultation about compensation for health damage related to adverse events.
Hereafter, the Department of Clinical Innovative Medicine is committed to supporting the implementation of investigator-initiated clinical trials of new drugs, medical devices, and stem cell therapies, and to enhancing quality and safety throughout exploratory studies; it thus contributes to the creation of new therapies.

Department of Data Science

Director
Prof. Satoshi Morita

Cooperative support of clinical research through biostatistics/bioinformatics and data-management/monitoring

In recent years, big and complicated data such as biomarkers of genome information have been increasingly applied to the development of new therapy. Department of Data Science offers supportive services to clinical trials through our biostatistics/bioinformatics and data-management/monitoring. We also provide research circumstances where data can be analyzed in a multipurpose and multidirectional manner based on comprehensive data mixing epidemiological information and electrical patient's records. Our main purpose is to contribute to development of new effective therapies in Kyoto University. Additionally, our department provides medical researchers with research environments to perform simulations for developing new therapies.

Department of Clinical Trial Management

Director
Prof. Kazuo Matsubara

Contribution to clinical trials with high-quality while ensuring patient safety

The Department of Clinical Trial Management is an in-hospital cross-sectional organization comprised of pharmacy, nursing, laboratory and office. Based on the Good Clinical Practice of ministerial ordinance by Ministry of Health, Labour and Welfare, we offer services of preparing Standard Operating Procedure for Clinical Trial, restoring trial records and supporting (coordinating) clinical trial practices among physicians, patients and sponsors (companies). In recent years, a range of our activities has been expanded with complicated global clinical trials and increased investigator Initiated trials. Our team thus will make a contribution to the clinical trial practice with high-quality and patient's safety that meets the GCP.

Department of Medical Information Technology and Administration Planning

Director
Prof. Tomohiro Kuroda

Support for advanced medicine using the latest information technologies

In the Department of Medical Information Technology & Administration Planning, we are trying to improve the current information environment in our hospital, and research about how the medical information environment should be in 30 years.
Our main themes are as follows: 1) Planning and management of hospital information systems 2) Support for the planning of hospital administration 3) Research and development of business analysis systems and end-result simulation of administrative decisions 4) Regional medical collaboration 5) Research and development of telemedicine systems 6) Research and system development of artificial intelligence in medicine 7) Research and development of VR-based surgical simulators

Service characteristics and performance

The Departmant of Medical Information Technology & Administration Planning was founded in 1970, being the first of its kind, for the purpose of making all medical information available electronically. In addition, it manages the information.
We manage hospital information systems including electronic clinical records. Though the management is directly related to the clinic, we also perform the following tasks that are not directly related to the clinic: support the other departments and divisions in our hospital, lectures on information technologies for medical students, guidance for graduate students in medicine on information processing study, guidance for graduate students in informatics on adjustment of information technology in medicine, and planning and management of systems to distribute digital content, which include videos of operations and educational content in our hospital.
We manage the Office for Hospital Strategic Planning, which supports administrative decisions of the executives of our hospital by making data and plans. Related to this, we develop and manage business analysis systems that can calculate income and expenses for each department, each disease, and every staff in our hospital. Based on the results of the business analysis, we also predict end-result income and expenses of our hospital when the hospital chooses an administrative strategy. We also develop systems to simulate end-results of administrative decisions. Furthermore, to reduce medical accidents, we analyze the influence of accidents on hospital administration.
Beyond the hospital business, we promote sharing of clinical information with related hospitals and patients by providing clinical information to the Kyoto Association for Cooperative Medicine Maiko-net. Additionally, we collaborate with clinical departments and promote the utilization of clinical information secondarily by considering methods to deal with the information securely. We also use the clinical information secondarily by studying and developing clinical support systems, such as similar case retrieval systems using natural language processing.
In 2012, we renamed our department to “the Department of Medical Information Technology & Administration Planning” because we had been working on business related to hospital management, such as cost analysis, since 2003.

Advanced medical technology

In the Department of Medical Information Technology & Administration Planning, we study and develop VR (Virtual Reality) operation-simulation systems and telemedicine environments as advanced medicine technologies. Recently, safety in medicine has attracted people’s attention, and it has been difficult for doctors to practice operation techniques in a clinical field. Therefore, we adapt VR technologies for operating practice. We make a virtual human body in computers. Doctors can practice and experience operating techniques using visual and tactile sensations. We also take future telemedicine using robots into consideration and have developed a Surgical Cockpit System that supports operations using comprehensive information. Moreover, we study application level QoS communication, which is required in telemedicine.

Department of Community Network and Collaborative Medicine (DCNCM) and the Regional Medical Liaison Office (RMLO)

Director
Prof. Masayuki Yokode

Support patients by cherishing their thoughts, values, and ideas

Based on the necessity to provide services to patients and their families to optimize recuperation, our predecessor started its activity in August 2000. Our department was officially established in April 2003, and the Regional Medical Liaison Office (RMLO) was attached in May 2004.
We aim to provide support to patients and their families so they can spend their recuperation time as peacefully and happily as possible and to establish a comfortable living environment where they can receive appropriate medical treatment and care from Kyoto University Hospital and/or other medical and nursing facilities.
The RMLO liaises with other clinics and hospitals.
Our main activities are to:
1. Provide support to patients at the time of discharge
2. Provide support to outpatients, including for financial problems
3. Promote collaborative interactions and cooperation with other medical, nursing, or welfare facilities
4. Educate people to be experts in this field, and spread and share knowledge and ideas about collaborative medicine

Main target diseases

We are not limited to dealing with particular diseases. We provide support to whoever needs our help. Currently, we have formed relationships with people of all age groups, ranging from babies to people aged over 90.

Service characteristics and performance

Six medical social workers (MSWs), three nurses, a clerk, and two doctors work together to plan patient services and help patients (April 2015). The RMLO also has six clerical staffs.
We start patient support in response to requests from their doctors or ward nursing staffs. Medical information is taken directly from the patients’ doctors and ward nurses and shared by related staffs. We have a daily morning staff meeting before making patient plans, which involves doctors and nurses helping other staff members to interpret the medical information. Face-to-face counseling sessions or interviews are highly valuable for us to support the patients so we know their thoughts, values, and situations. We also have a weekly meeting with the medical staffs of every ward. Our MSWs and nurses keep close contact with each other, and this interaction makes it easy to provide the appropriate support to patients and their families. The RMLO is also available to develop a partnership with other facilities.
We supported and helped with the recuperation of 1,389 cases (42% for discharge, 28% for transferring to other hospitals, and 28% for outpatients and others) in 2012. The number of cases referred to Kyoto University Hospital via the RMLO was 10,094.

Other activities

We also participate in a number of other activities, including:
1. Attending or hosting meetings and seminars and workshops on collaborative medicine and medical networks
2. Educating and training students, MSWs, and nurses from other facilities
3. Collecting information requested by Kyoto University Hospital and spreading it to all the medical staffs

Patient Safety Unit

Director
Associate Professor Yumi Matsumura

Providing supportive activities to our patients and clinical staffs for convincing medical care

The Patient Safety Unit at Kyoto University Hospital emphasizes the reporting, analysis, and prevention of medical errors that often lead to adverse healthcare events. We provide safe care services as follows:

1) Risk management such as identifying and managing patient-related risks, reporting and analyzing incidents, learning from and following-up on incidents, and educating students and employees on patient safety
2) Conflict management such as mediating open and honest communication between patients and staff, especially after adverse events
3) Crisis management such as prompt communication with patients or families after serious adverse events, finding out the causes of the events, and apologizing when an obvious error has occurred

Service characteristics and performance

The Patient Safety Unit was founded in Apr 2001. Associate Prof. Yumi Matsumura has served as the Patient Safety Director since Apr 2011; Maiko Tsujita, a nurse, has been working as the General Risk Manager since Apr 2011; Hiromi Fukumura, a nurse, became a member since Apr 2013. Seven office staff are also working for patient safety. Yumiko Kawai supports our activities as Vice-director.
Our activities from Apr 2012 to Mar 2013 include 9,915 incident reports including 483 from physicians, 19 manuals or guides published or revised, 28 seminars on patient safety at Kyoto University Hospital, 19 times of patient safety information, six times of information to prevent patient falls, five times of investigating committee to find out the cause of the adverse events, six investigative reports, six lectures at the International Association of Risk Management Japan Head Office (in June), the Kyoto Nursing Association (in June and August), the Kyoto Organization of Dermatologist (in January), the Uji-Tokushukai Medical center (in February) (Lecturer, Matsumura), and at the Kyoto Nursing Association (Lecturer, Tsujita), two presentations at meetings of the Japan society of Quality and Safety in healthcare (in November) and the Japan society for Healthcare Conflict Management (in January) (Speaker, Matsumura). Also, we had the following publication: Tsujita M: "Knowledge on safety management of intravenous injection and transfusion" in the monthly Japanese journal of clinical nursing- 2012; 38:839

Number of reports by job descriptions (Apr. 2013-Mar. 2014

Nurse	7,918	(85.1%)
Doctor	454	(4.9%)
Pharmacist	332	(3.6%)
Nutritionist	213	(2.3%)
Radiological technician	128	(1.4%)
Physical therapist	74	(0.8%)
Office staff	48	(0.5%)
Laboratory technician	91	(1.0%)
Cinical engineer	19	(0.2%)
Others	19	(0.2%)
Total	9,296	

Change in number of incident reports in 2002-2013

Community health activities

Associate Professor Matsumura has attended the following symposium as a symposiast: Medical malpractice information center symposium (May 2012, Nagoya), Medical Safety Symposium hosted by Kyoto Nursing Association (Nov. 2012, Kyoto), and the 10th Medical Safety Symposium hosted by Kyoto Medical Association (Feb. 2013, Kyoto). Our unit co-hosted the 16th Kyoto-Shiga Medical Safety Meeting with Shiga University of Medical Science.

Integrated Clinical Education Center

Director
Prof. Shuichi Matsuda

"Encourage sophisticated technologies, and cultivate a tender heart"

Our hospital was established to provide an outstanding medical education to medical doctors, dental doctors, nurses, and the other co-medical staffs in a standardized manner and with consistency through the pre- and post-graduate periods.
Our main missions are as follows:

1. Management of clinical educational programs for medical and dental doctors
2. Planning seminars regarding clinical education, including those for students, young doctors, and mentors
3. Training for advanced hospital-based medical practice
4. Management of training courses for medical staffs
5. Planning educational courses for terminal care, ELNEC-J, etc.
6. Renting and management of simulators for medical education

Service characteristics and performance

The Post Graduate Clinical Education Center was established in January 2004 as an organization corresponding to a newly designed system regarding clinical training courses (April 2004). The center was reorganized and renamed to its present name, "Integrated Clinical Education Center," in April 2005 and started executing training courses for post-graduate dental doctors and other medical staffs at the same time. The center plays an important role in medical education at Kyoto University Hospital, because formerly each department did their own education individually that is not efficient. We can give integrated and effective medical educational service to each department. As our main policy, we are encouraging our medical staffs to have tender-heart, generous minds, and rich sense of humanity.

1. Management of clinical educational programs for medical and dental doctors (2012): Six types of clinical education programs are offered at our hospital for post-graduate young doctors. Furthermore, there is an option of choosing a clinical course in emergency medicine at collaborating hospitals from 2013; therefore, the program is getting more satisfactory. Eighty-one young doctors completed the program in March 2013. A one-year mandatory residency program was also launched for dental doctors from April 2006. They have their training course at Kyoto University Hospital or collaborating ones. Five doctors of the seventh batch of graduating members completed the program in March 2013.

2. Planning for seminars regarding clinical education, including those for students, young doctors, and mentors: The seminars for mentors were held twice a year (September 2012 and February 2013), and 69 members completed the program. The aim of the seminars is to raise the ability of coaching, with sophisticated knowledge and skills of clinical training. We also conducted seminars for non-medical staffs to help them provide medical services with safer and higher quality. Additionally, symposiums regarding community health care and seminars for medical staffs were held; these were supported by a Kyoto University Branch Fund from the Kyoto Medical Career Support Center.

3. Training for advanced medical care with university hospital-linked manner: We made a stronger connection between four Magnet hospitals and five collaborating university hospitals (that have achieved a good reputation for coaching young doctors). As a result, practical professional education courses at Magnet hospitals and highly advanced courses at university hospitals have been more seamless, and this has led to the development of sophisticated professional doctors and clinical researchers.

4. Management of training courses for medical staffs: We deal with many seminars and training courses for co-medical staffs and students (nurses, medical laboratory technicians, radiological technicians, physiotherapists, occupational therapists, dieticians, clinical engineers, psychosocial workers, social workers, orthoptists, etc.). In total, 1,367 people took part in the seminars and courses last year. We plan to make them more satisfactory in the future.

5. Planning for educational courses for terminal care, ELNEC-J, etc.: We also focus on education related to cancer therapy to standardize the quality of medical services provided, because one of Kyoto University Hospital's chief functions is to provide cancer therapy. Seminars regarding so-called "terminal care" were held for doctors in Kyoto and for nurses specializing in cancer therapy, in collaboration with Kyoto Prefecture and University Hospital, Kyoto Prefectural University of Medicine (ELNEC-J: End-of-Life Nursing Education Consortium-Japan).

6. Renting and management of simulators for medical education: Simulators for medical training are available for rent to everyone in our university, and training with simulators is held with the purpose of providing continuous pre- and post-graduate medical education, medical safety, and high-quality medical care. The number of training opportunities is larger than that in the previous years and finally reached 306 in 2012. The maintenance of the simulators is supported by Kyoto Medical Career Support Center Kyoto University Branch Fund by the Kyoto Prefectural Regional Medicine Support Center.

Solutions Center for Health Insurance Claims

Director
Prof. Toshio Heike

Revenue maximization through concerted efforts of all staff members

In the Solutions Center for Health Insurance Claims, staff members from various departments focus on efficient processing of health insurance claims to realize our mission: To maximize revenue through concerted efforts of all staff members.

Service characteristics and performance

In April 2006, the Solutions Center for Health Insurance Claims was established with the goal of improving efficiency and expertise in processing health insurance claims, an essential part of hospital management. The Solutions Center for Health Insurance Claims at Kyoto University Hospital is directed by the vice-president in charge of financial management and consists of faculty and administrative staff members, including health information managers. Staff members from a variety of departments collaborate on the shared goal of revenue maximization.

All staff members are supposed to meet at least once a month to discuss how best to improve operations, based on a broad range of data that reflects the claims being processed. Special meetings are held to deal with and resolve specific issues in a timely manner.

Since the Japanese health insurance system is updated every two years, the Solutions Center sets up special task forces that fit new categories, so that we can increase revenue by adjusting for human resources as well as legal and facility requirements. The center also arranges educational opportunities for hospital staff members, both inside and outside the hospital, to clarify compliance and adherence details and to prepare for inspections by authorities.

Communication with medical staff members is facilitated using a two-fold approach that is both individual and comprehensive. The Committee for Health Insurance Claims is a major channel of the comprehensive approach, along with the hospital council, meeting with the directors of ward, directors of outpatients, and head nurses. Annually held individual interviews with each department are also significant opportunities for learning and problem solving. Although the interviews are carried out by the Office for Hospital Strategic Planning, the Solutions Center also presents information on various indicators and collects important data from clinical sites.

Development of innovative systems

In collaboration with private companies, the Solutions Center also participates in the development of innovative systems that aim to enhance hospital operations and management, based on the findings and challenges detected and encountered during our activities. Auto-coding of DPC and Bed-checker operations are promising future topics that have been developed mainly by the medical informatics and nursing departments.

Kyoto University Cancer Center

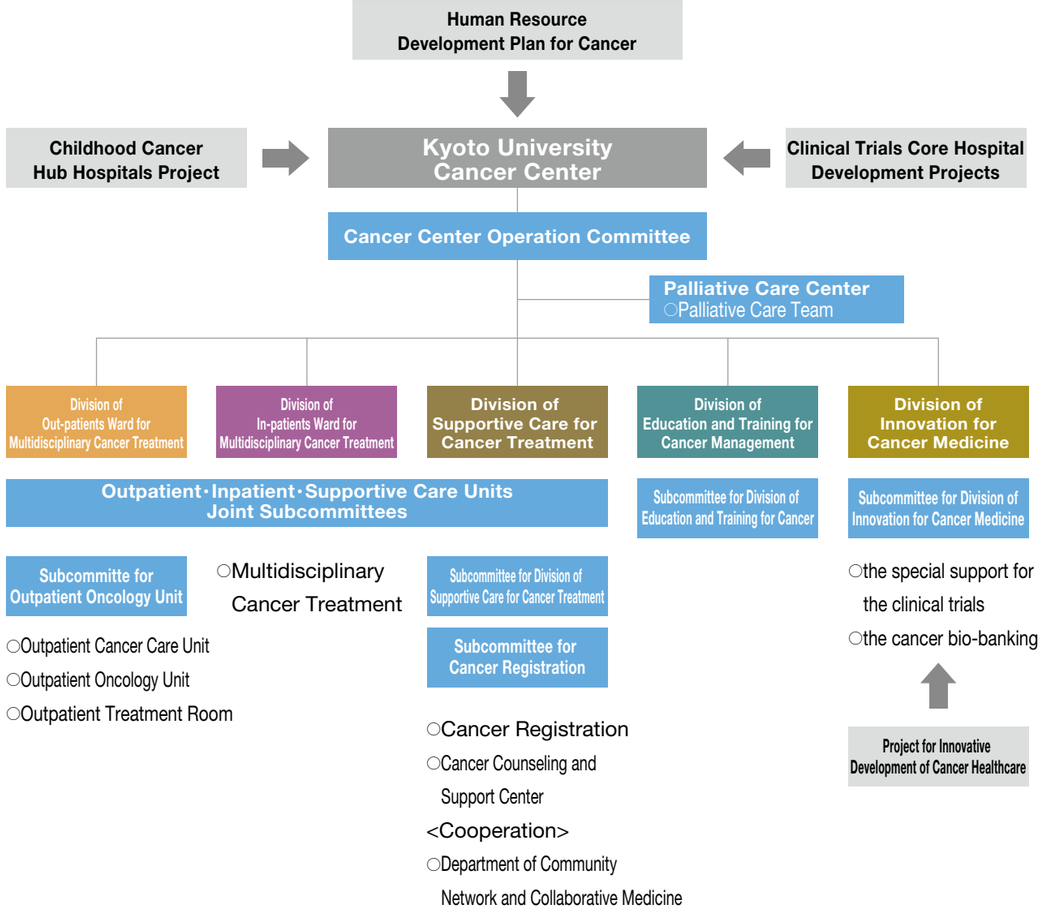
Director
Prof. Akifumi Takaori

Striving to beat cancer by our wisdom and persistent efforts

Kyoto University Cancer Center was established as the first National University Cancer Center in Japan. Kyoto University Cancer Center consists of In-patient Unit, Out-patient Unit, Supportive Care Unit, Education and Training Unit, and Medical Innovation Unit. Each unit consists of staffs from different departments and sections, and performs multi-diciplinary cancer treatment. Characteristic features of Kyoto University Cancer Center are as follows: 1) patients care by medical team consisting of different specialties; ex. oncologists, surgeons and radiologists 2) treating patients with various concomitant diseases and those with side effects by many different doctors with different specialties 3) developing new medicines and medical devices through most up-dated research 4) intensive education for medical doctors and medical staffs specialized to cancer therapy

System of Kyoto University Cancer Center

(As of October 2014)



Division of Out-patients Ward for Multidisciplinary Cancer Treatment

Director
Associate Professor
Shigemi Matsumoto

Care for individual patients by multidisciplinary team

Division of Out-patients Ward for Multidisciplinary Cancer Treatment consists of multidisciplinary tumor boards for various types of cancer. At the tumor board, physicians, surgeons, radiologists, medical oncologists, pathologists, palliative care team and healthcare professionals discuss to determine the most optimal therapeutic strategy for each patients. The division has tumor boards for prostate cancer, brain tumors, lung cancer and mesothelioma, breast cancer, esophageal cancer, pancreatic cancer, colorectal cancer, gastric cancer and GIST, head & neck cancer, pediatric cancer, and cancer of unknown primary.

Division of In-patients Ward for Multidisciplinary Cancer Treatment

Director
Prof. Manabu Muto

Multidisciplinary cancer treatment with many private rooms

Division of In-patients ward for multidisciplinary cancer treatment provides a total of 36 beds (16 for sharing a room, 20 for private room). One for the books, this is the ward specializing in cancer chemotherapy and radiotherapy. We provide many private rooms to respond to the patient's request of putting their attention on the treatment. Furthermore, this ward collaborates with Out-patients ward closely and then, we can provide the seamless support between these wards. If the patient have severe adverse event during chemotherapy and radiotherapy in an ambulatory setting, we can do an immediate intervention in this division. For the progress of cancer medicine, this ward has a special function for the clinical trail.

Division of Supportive Care for Cancer Treatment

Director
Prof. Satoru Tsuneto

To relieve various sufferings of cancer patients and their families

Division of Supportive Care for Cancer Treatment aims to help cancer patients and families to relieve their suffering and enhance quality of life. It consists of palliative care team and cancer liaison office.
The palliative care team provides interdisciplinary care to patients and their families for pain and other symptom relief throughout the course of illness. The cancer liaison office provides information about cancer, organizes patient education classes and offers advice on various concerns about cancer treatment.

Division of Education and Training for Cancer Management

Director
Prof. Masakazu Toi

Cultivating medical specialists to practice the cutting-edge cancer treatments

Division of Education and Training for Cancer Management is created for cultivating the professionals of advanced treatment for cancer and innovation of new medicine by intensive, efficient collaboration between Hospital and University. For the education of medical students, this division takes in those for practical training of clinical oncology and its fundamental education, finally facilitates the spread of these professionals. As for the education of the students of graduate school of medicine, we set up the special course of faculty development for several medical fields based on the national projects supported by the Ministry of Education, Culture, Sports, Science and Technology. Especially, we established the original FD course of medical oncology to promote the translational research of basic science for cancer. For the practical education for team oncology, we take in the team consisted of medical oncologist, pharmaceutist and nurse from more than 20 hospitals every year, and trained the team oncology thorough the chemotherapy for colorectal cancer.

Division of Innovation for Cancer Medicine

Director
Prof. Yoshiharu Sakai

For improving quality of clinical studies and developing cutting-edge cancer therapy

Division of Innovation for Cancer Medicine was established for the two missions. One is for the improvement of quality of clinical trail in Kyoto University Hospital. This mission is mainly focused on the special support for the clinical trials, especially for the studies by the cooperative clinical trial group selected and sponsored by the Ministry of Health, Labour and Welfare, Japan. Another mission is to establish and to run the cancer bio-banking and its bioinformatics system to innovate a new biomarker for effectiveness, resistance and adverse event for chemotherapy or radiotherapy. In future, these bio-information will be very useful for a new drug discovery for cancer treatment and for the strategy of early cancer diagnosis and effective treatment.

Palliative Care Center

Director
Prof. Satoru Tsuneto

Aiming at improving patients' QOL and integrating regional palliative care through interdisciplinary team

As the Kyoto Prefecture's Designated Cancer Center Hospital, the Kyoto University Cancer Center aims to provide high-quality cancer treatment and to expand palliative care. Established on July 3, 2014, the Palliative Care Center aims not only to provide palliative care at our hospital, but also to organize integration of regional palliative care teams, outpatient palliative care, and palliative care wards in Kyoto.
Activities carried out by the Palliative Care Center include (1) screening patients' physical and psychosocial pain, (2) securing emergency palliative care beds (establishing an emergency hospitalization setup), (3) providing counseling for cancer patients, (4) providing assistance for specialized consultations, (5) assisting in regional collaborations, (6) education and training, and (7) integrating and analyzing healthcare information. In fiscal 2014, Kyoto University Society for Palliative Medicine was launched. We held five lectures and case conference meetings on palliative care, and created a forum for sharing views on education, training, and research.
At present, seven medical institutions in Kyoto Prefecture operate palliative care wards. Kyoto Prefecture also contains seven Regional Designated Cancer Center Hospitals, five Designated Cancer Hospitals, and seven Designated Cancer Treatment Hospitals. We plan to promote regional collaboration with these medical institutions in the future.

Clinical Research Center for Medical Equipment Development

Director
Prof. Shuichi Matsuda

Promoting innovative medical equipment development through academia and industry collaboration

The Clinical Research Center for Medical Equipment Development has been established as a research base to promptly deploy innovative medical equipment and educate specialists about developing medical equipment. In particular, our center has a system that focuses on clinical researches on medical devices development to address the application of technology in clinical fields based on the following four missions:
1) Contribution to anti-cancer control
2) Development of the medical-device industry
3) Promotion of human resource
4) Contribution to community

Service characteristics and performance

In order to achieve medical innovation, it is essential to develop infrastructure that creates innovative medical equipment and improves our social returns. Our center was established in April 2011 under the aegis of the “project of advanced innovation base development” by Japan’s Ministry of Economy, Trade and Industry (METI). We have a new building, with five floors above ground and one below with a capacity of 44-rental labs and a total floor area of 4,635 m². We have now realized an environment of open innovation where academic teams and private companies can communicate with each other. The center has three divisions (research project, education for highly skilled professionals, and municipal office of science and business liaison) under the director, deputy director, and support office.

The research project division has executed the following projects that may continue for 5 years (standard period):
1) Collaborative research projects between Kyoto University staff and company or entrusted research
2) Grant-based projects with Kyoto University staff
3) Projects that meets the purposes of the center

As of August 2013, we have 10 ongoing research projects, such as the large national project that is intended to develop the latest imaging technology based diagnostic devices and highly accurate treatment devices.

The division providing education for highly skilled professionals has conference rooms for seminars and promotes practical training through research projects. The municipal office of science and business liaison provides a variety of support services to the community. Currently, the Advanced Scientific Technology and Management Research Institute of Kyoto (ASTEM) serves as an office of science and business liaison in the Kyoto City area.

Clinical research activities

There are various types of medical equipment that are improved or revised in a short interval. These differ from pharmaceutical products. Clinical research of medical equipment includes exploratory or verification studies in different development phases (preclinical and clinical studies for regulatory approval and post-marketing surveillance). Therefore, it is necessary to collaborate with Kyoto University’s needs-seeds-infrastructure and the company’s technologies. Our center plans to improve clinical studies on the properties of medical equipment, such as exploratory research using unapproved products, in collaboration with the Institute for Advancement of Clinical and Translational Science (iACT). Additionally, we will strive to improve the medical devices industry, and strengthen our global competitiveness and improve as a first-class hub of academia and industry collaboration that offers prompt clinical studies.

Rheumatic Disease Center

Director
Prof. Tsuneyo Mimori

Tight control of rheumatic diseases by interdisciplinary approaches

The Rheumatic Disease Center at Kyoto University Hospital is the first full-scale center of multidisciplinary medical care for rheumatic disease in western Japan. We have created a comprehensive rheumatoid arthritis (RA) patient database called KURAMA cohort, which aims to help patients and advance clinical research for better treatments in close cooperation with the departments of rheumatology and clinical rheumatology and orthopaedic surgery. Furthermore, we provide a bio bank of patients’ samples associated with clinical data in order to perform collaborative research between us and institutes inside and outside Kyoto University.

Main target diseases

Rheumatoid arthritis and undifferentiated long-standing arthralgia
In particular, we make every effort to achieve remission or cure in patients with early RA.

Service characteristics and performance

The center has two medical physicians and two orthopedic surgeons to provide comprehensive care by taking interdisciplinary approaches using newly developed diagnostic modalities and more effective anti-rheumatic agents. The KURAMA cohort has been utilized for better treatments in RA and for the advancement of clinical and translational research in recent years.
We provide many activities for communication with patients, health professionals, and doctors within our hospital and in affiliated hospitals, including seminars of "Rheumatology Network Forum in Kyoto" and "Infliximab Seminar at Kyoto" as well as periodical publications of "Rheumatic Disease Communication" and "Your Rheumatic Disease Report." Moreover, we actively conduct a number of basic and translational research programs, and join cooperative studies with other research institutes and companies.

Clinical research activities

The KURAMA database facilitates a variety of clinical research projects related to rheumatic diseases. Our RA survey includes yearly check-up of symptoms, physical findings, functional status, and laboratory and radiological data. We actively conduct specific investigations for pathophysiology, current status, and effects of present treatment on RA. Our team has presented 10 studies of the KURAMA cohort and RA in the 59th Annual General Assembly and Scientific Meeting of the Japan College of Rheumatology.

Furthermore, our center is in progress of performing more than 30 clinical trials.

Division for iPS Cell Application Development

Director
Prof. Toshio Heike

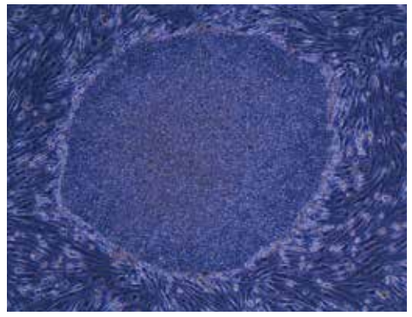
Striving to apply iPS cell technology in medical science/care

In 2007, human induced pluripotent stem (iPS) cells were established by a team under the direction of Professor Shinya Yamanaka. This new iPS technology is expected to be especially useful for application in medical research and medical care. For this reason, Kyoto University Hospital founded the Division for iPS Cell Application Development in December in 2011, in cooperation with the Center of iPS Cell Research and Application (CiRA), in order to develop infrastructure for the application of iPS cells in regenerative medicine in the future. This division consists of two sections: "iPS cell outpatient," where we obtain informed consent from collaborators (donors) and collect their tissue samples, and "Section of developing quality control technology" where we develop technologies for iPS cell examination.

Service characteristics and performance

1) Section of iPS cell outpatient:
This outpatient clinic is open on Tuesday and Thursday afternoons by advanced reservation only. The services include obtaining informed consent from donors and collecting skin/blood samples. Each donor is a kind of collaborator for generating disease-specific iPS cell models and has attending physicians who participate in "Disease-specific iPS cell research" (research protocols no. 824 and G259) approved by the ethics committee at the university. Offering such services has advantages such as possible personal decisions by donors, reduced burden for doctors, and unification of the contact information for iPS cell research. As of 2012, we have practiced these medical cares for 34 cases (only in the outpatient unit).

2) Section of developing quality control technology:
This section, which is located in the CRCMeD, comprises two units: the laboratories and cell culture rooms. The laboratories offer the HLA typing and STR analysis required for the construction of iPS cell stocks.



Advanced medical technology

To realize the potential of iPS cells in regenerative medicine, our division at the Kyoto University Hospital, in collaboration with the CiRA, addresses two primary works: drug development/disease research using specific cells and regenerative medicine using therapeutic cell lines. In addition to Kyoto University, other institutions have begun studying a variety of disease-specific iPS cells. Such iPS cells are recommended to be stored in official cell banks. Our standardized procedures for creating iPS cells allow us to efficiently transfer samples to official cell banks, thus providing the research community with better access to samples available in our country. Through collaboration with the CiRA, our team actively strives to advance regenerative medicine in the future.

Hyperbaric Oxygen Therapy Unit

Director
Associate Professor
Toshimi Kaido

Providing safe and effective hyperbaric oxygen therapy in liaison with medical departments

The Hyperbaric Oxygen Therapy Unit of the Central Clinical Center conducts safe and effective hyperbaric oxygen treatments after determining indications in close association cooperation with other medical departments. Indications for this therapy include decompression illness, carbon monoxide (CO) intoxication, and gas gangrene, needing emergency care. As there are no other nearby facilities offering this therapy, our unit actively accepts patients referred from other facilities.

Main target diseases

Decompression illness, sudden deafness, osteomyelitis, CO poisoning

Service characteristics and performance

In order to treat patients with peripheral blood vessel, our unit was found at Kyoto University Hospital in 1967 with a large type hyperbaric chamber made in the U.S. Since then, we have also introduced one resin chamber made in the U.K. and one steel chamber made in Japan. Detailed target diseases are as follows:

- Diseases requiring emergency care including acute CO poisoning, other gas poisoning, osteomyelitis, air embolism, decompression illness, acute peripheral vascular disorder, severe burn, severe frostbite, extensive contusion, shock, myocardial infarction, cerebral embolism, severe head injury, brain edema, hypoxia-related brain functional disorder, ileus, severe acute myelopathy, retinal artery obstruction, and sudden deafness
- Diseases not requiring emergency care including peripheral circulatory disturbance with intractable ulcer, skin graft, subacute myelo-optic neuropathy (SMON), exercise paralysis secondary to cerebrovascular disorder, sequela of CO poisoning, spinal nerves disease, and radionecroses
- Radical therapy in the chamber for gastric cancer or breast cancer by using topical intra-arterial injection of anticancer agents

In 1991, our unit was transferred to the central clinical center. Currently, we mainly use a computer-based automatic hyperbaric chamber made in Japan. Since 2006, the department of surgery, which is integrated with three departments of the first and second surgeries and implantation surgery, has been associated with the unit.

Advanced medical technology

In the Kyoto Prefecture, only two facilities—Kyoto University Hospital and the Self-Defense Forces Maizuru Hospital—have large type hyperbaric chambers. The outpatient unit plays an important role in the emergency care in Kyoto area. This hyperbaric therapy should be performed under a doctor's supervision, because it has not been confirmed whether ventilators are used safely in severely ill patients treated in the chamber.

Clinical Record Management Unit

Director
Prof. Tomohiro Kuroda

For optimal clinical record management

The Clinical Record Management Unit (CRMU) of the Central Clinical Center is focused on providing daily services under the motto "For optimal clinical record management," to properly and securely manage both paper and electronic medical records in the hospital information system and to effectively use them in diagnosis and treatment as well as research and education at Kyoto University Hospital. We also provide special services as follows:

- Inspection of the Diagnosis Procedure Combination/Per-Diem Payment System (DPC/PDPS) by health information managers
- Creation of anonymized information by the patient to be submitted to the Ministry of Health, Labour and Welfare
- Management of discharge summaries
- Suggestion for strategic hospitalization patterns on the basis of DPC data
- Accumulation of patient information on diagnosis, treatment, and prognosis for the hospital-based cancer registry

Service characteristics and performance

The CRMU was founded in November 2006, consisting of a director (the director of the Division of Medical Information Technology & Administration Planning [DMITAP]), two vice-directors (a teaching faculty and the Director of the Medical Affairs Division [MAD]), and several specialists from the MAD. Of these, seven are health information managers who provide a variety of services such as management of medical records, the DPC, the in-hospital cancer registry, and summaries.

1) Medical record service: Medical records are stored as electronic and paper charts. Electronic charts were introduced in 2005, and the paper charts that had been issued before 2005 have been stored for 20 years. Paper examination sheets/written informed consents have been and are being incorporated and stored in electronic charts as scanned copies (approx. 4,000 copies per day) with an electronic seal. Imaging films have been converted into electronic (filmless) form data since April 2013. In the future, we will strive to ensure that all diagnostic records can be identified on electronic charts.
2) DPC service: Seven health information managers offer daily services of managing medical fee receipts and patients' medical history data. They closely check whether adequate DPC codes have been selected, after patients' medical care was finished. They also suggest an optimal duration of hospital stay to each medical department, using a benchmark system with accumulated DPC data.
3) In-hospital cancer registration: This service staff consists of six health information managers who completed the learning course of the in-hospital cancer registry program (sponsored by the National Cancer Center). Their services include managing the hospital-based cancer registry by using the standard form stipulated by the Ministry of Health, Labour and Welfare, and providing information to the National Cancer Center and the Kyoto Medical Association. In 2012, they reported 3,669 and 7,728 cancer cases to the former and the latter, respectively.
4) Summary service: The CRMU ensures it by examining for patients with no discharge summary every day that attending physicians can prepare discharge summary. Other services include development of special software for summary management as well as effective and reasonable maintenance of the managing system.

Other activities

To address various kinds of routine tasks, a working group for CRMU operations was constituted under the information committee. It hosts twice-monthly meetings. The group comprises 11 members: two unit vice-directors; five specialists; one medical doctor of the Solutions Center for Health Insurance Claims; two Deputy (Assistant) Director, Department of Medical Affairs of the MAD; and one chief of the Management Division. They actively make efforts to discuss important matters from diverse perspectives.

Department of Clinical Pharmacology and Therapeutics (Pharmacy)

Director
Prof. Kazuo Matsubara

Drug specialists who support pharmacotherapy management

In the department of pharmacy, through the appropriate use of drugs and risk management, we support the implementation of "safe and effective pharmacotherapy." In addition to traditional pharmacy services (formulary management and supply of drugs), the pharmacist's responsibilities include explaining these drugs at the bedside and checking for any adverse reactions and interactions; thus, the opportunities to bring their work closer to patients are increasing. Moreover, as a member of the healthcare team, the scope of the pharmacist's activities has widened and has reduced the burden of work on other medical staff members that accompanies the increasing level and complexity of medical care and advances in the efficacy and safety of pharmacotherapy. Daily work is performed to provide superior treatment outcomes for patients that result from interventions by pharmaceutical specialists (i.e., ward pharmacists) and cooperation with various healthcare professionals.

Service characteristics and performance

Dispensing activities: With the provision of appropriate drugs to the patient, accurate and efficient work is pursued using information technology (IT) products such as electronic medical records and drug ordering systems. In principle, the outpatient department issues prescriptions outside of the institution; however, outpatients typically visit the hospital's pharmacy counter for matters such as explanations of oral anti-cancer drugs, and we promote coordination with community pharmacies to ensure the appropriate implementation of pharmacotherapy. Additionally, the operating room has a clinical pharmacist who deals with the management of issues such as anesthetic sets and narcotics.

Ward activities: Confirmation of drugs brought into the hospital by patients, explanations of how to take medicines, management of medication histories, provision of drug information to physicians and nurses, management of the ward's drug stocks, and other drug-related work are performed in each ward. Since October 2012, all wards have begun to include ward clinical pharmacists. Based on protocols previously prepared and agreed upon by the pharmacist and physician, confirmation of drugs brought into the hospital by patients, proposals for temporary orders, plans for drug use and administration schedules, and orders for the measurement of the concentration of immunosuppressants and antibiotics in blood have been established. Furthermore, activities are underway to capitalize on the abilities of the pharmacists by involving them in planning with other teams such as the infection control team, nutrition support team, and palliative care team.

In-house special preparations and sterile preparation activities: Drugs that are not marketed, despite their necessity in medical treatment and dispensation, are produced individually for each patient in the formulation room. In addition to the sterile preparation of total parenteral nutrition fluids, pharmacists perform hospitalization tasks as well as detailed prescriptions checks and sterile preparation of outpatient anti-cancer drug injections. In March 2013, a preparation inspection system was adopted, which contributes to the provision of safer medical treatment.

Drug information activities: We are striving to promote the appropriate use of drugs with regard to inquiries from various medical staff members, particularly physicians, nurses, and clinical pharmacists. We perform a periodical review of drugs adopted within the hospital and evaluations for generic drugs.

Therapeutic drug monitoring activities: The blood concentrations of 40 varieties of drugs, including immunosuppressants, antiepileptic drugs, and antibiotics, are measured. When necessary, individual dosage regimens and pharmacokinetic interventions are coordinated by the clinical pharmacist.

Clinical trial management activities: For the harmonious and suitable implementation of clinical trials, management of the drug on trial, clinical trial office duties, and clinical research coordinator duties are performed. Recently, the scope of support for investigator-initiated clinical trials and clinical research has been expanded.

Advanced medical technology

The main activities in the department are as follows:

1) Individualized dosage adjustments: With regard to immunosuppressants and anti-cancer drugs, in addition to blood drug concentration monitoring, optimum dosage regimens that are matched individually to each patient are being developed by measuring the expression levels of genes related to pharmacokinetics and performing polymorphism analysis.
2) In-house formulations for clinical trials: To support translational research, investigational agents used in clinical trials are being manufactured in-house through the use of advanced medical technology.
3) Collaborative research: Although it is beyond the scope of the medical services payment system, by performing pharmacokinetic analysis of clinically important drugs and genetic polymorphism analysis of drug transporters and drug-metabolizing enzymes, collaborative research with medical examinations and treatments of each department is being developed with the goal of developing new medical treatments and individualized dosage regimens.

Nursing Department

Director
Tomoya Akiyama

We respect a person's unique individuality and emphasize coordinated team medicine to offer meticulous nursing care to each patient

The basic responsibilities of the Nursing Department are to promote people's health, prevent illnesses, help them recover health after an illness, and alleviate pain. To fulfill them, we regard people in a holistic manner and spontaneously approach them with the professional skills and techniques of nursing. To give concrete shape to these goals, we set forth the following as our activity policies: patient-centered care, safety, effectiveness, timeliness, efficiency, and equity.

Goals of the Nursing Department in 2012

"Confront the patients as a professional and fulfill nursing responsibilities."

1. Practice evidence-based nursing (EBN) and make the specialty of nursing more visible
2. Practice the Partnership Nursing System (PNS) and share nursing responsibilities and challenges/rewards
3. Envision one's own career path and realize it

Service characteristics and performance

Enhancing the quality of nursing

The Department strives to standardize nursing care with the aim of achieving continuous and consistent nursing care. At the same time, we work to train and foster generalists capable of playing the basic roles of nursing care in any situation. To offer safe and high-quality nursing care, moreover, we secure and foster specialists who promote specialized activities. For areas requiring highly advanced expertise, we assign dedicated nurses equipped with the techniques and knowledge specializing in those areas. At present, these nurses are working actively in the following areas.

●Oncology nursing

Together with the onsite expert nurses, these nurses engage in consultation activities for palliative care as members of the Cancer Support Team, and provide nursing for cancer treatment focusing on chemotherapy and radiation therapy.

●Infection control

As dedicated infection control personnel and as members of the hospital's Infection Control Team (ICT), the nurses carry out infection countermeasures in a cross-departmental fashion.

●Discharge planning and assistance

The nurses consider the type of medical management and nursing care that is needed to enable patients to continue their recuperation processes with peace of mind even after hospital discharge. They offer necessary education and consultations to encourage patients to make their own decisions.

●Bedsore measures

As dedicated bedsore control personnel, the nurses play a central role in the Bedsore Management Team and carry out cross-departmental activities transcending departmental barriers.

●Clinical research coordinators

The nurses drew up a critical path for use with clinical trial patients, and worked to ensure the smooth implementation of nursing care and clinical trials. As a result of these efforts, the number of contract clinical trials is showing a rising trend.

●Nursing informatics

The nurses utilize the electronic medical chart system to gather and sort out information necessary for supporting patients' recuperation process. They share information among the team in a timely manner and promote the enhancement of medical safety such as standardizing nursing operations, increasing operational efficiency, and preventing patient misidentifications.

In addition, the Department assigns four certified nurse specialists and twenty-two certified nurses who have extensive experience and advanced knowledge on specific nursing fields.

Training of nurses

The Department has constructed a mangrove-style career path to encourage individuals to continue growing as a nurse for life, and offers a 3-year, postgraduate, step-by-step training program to fortify basic skills as a generalist, as well as upgrading and expert training sessions. The Department also has a unique clinical ladder certification program, which is used in supporting a nurse's career.

Creating a workplace where nurses find it easy to work

The Department is working to prevent the nurses from leaving their jobs. This is done by building an environment where they find it easy to work, for example, by creating a bottom-up organization, reducing overtime work, promoting the acquisition of paid leaves and summer vacation, and examining the shift system.

Other activities

Exchange of personnel between the Nursing Department and the Human Health Science Courses

We have launched a working group to encourage personnel exchanges between the Nursing Department and the Nursing Science Course. It is divided into three subgroups, namely, Practical Training, Development of Nursing Practice, and Drills/Lectures, and is working to create a mechanism of personnel exchanges. In the Practical Training subgroup, training of practical training instructors is carried out jointly to establish a support system with the aim of enhancing the level of practical training instructors. In the Development of Nursing Practice subgroup, members of the Nursing Department and the Nursing Science Course vigorously interact with each other and create an environment for enabling joint research; by doing so, they strive to tackle high-quality nursing research whose benefits can be returned to the sites of nursing practice. In addition, the subgroup jointly develops and renews the nursing operational procedure while confirming the latest sets of evidence. In the Drills/Lectures subgroup, nurses take part as facilitators and lecturers in the drills and lectures offered at the Human Health Science Course so that the students can visualize the sites of clinical practice, beginning with the undergraduate education level.

Office for Hospital Strategic Planning (OHSP)

Director
Prof. Tomohiro Kuroda

A think tank for actualizing the university hospital's mission

With the recent changes in the health care environment, citizen's expectations about medical care have become more diverse than in the past. OHSP plays an important role as an in-hospital think tank that aims to offer advanced health care and education, as well as conduct high-level medical research, via stabilization of management foundation.

Service characteristics and performance

OHSP is a standing advisory board to the Hospital Director, consisting of a vice-director (responsible for hospital management), faculty staff, and administrative staff from the Management Division and Medical Affairs Division. Through weekly meetings, we plan programs that contribute to the improvement of hospital functions.

Services in our office are as follows:

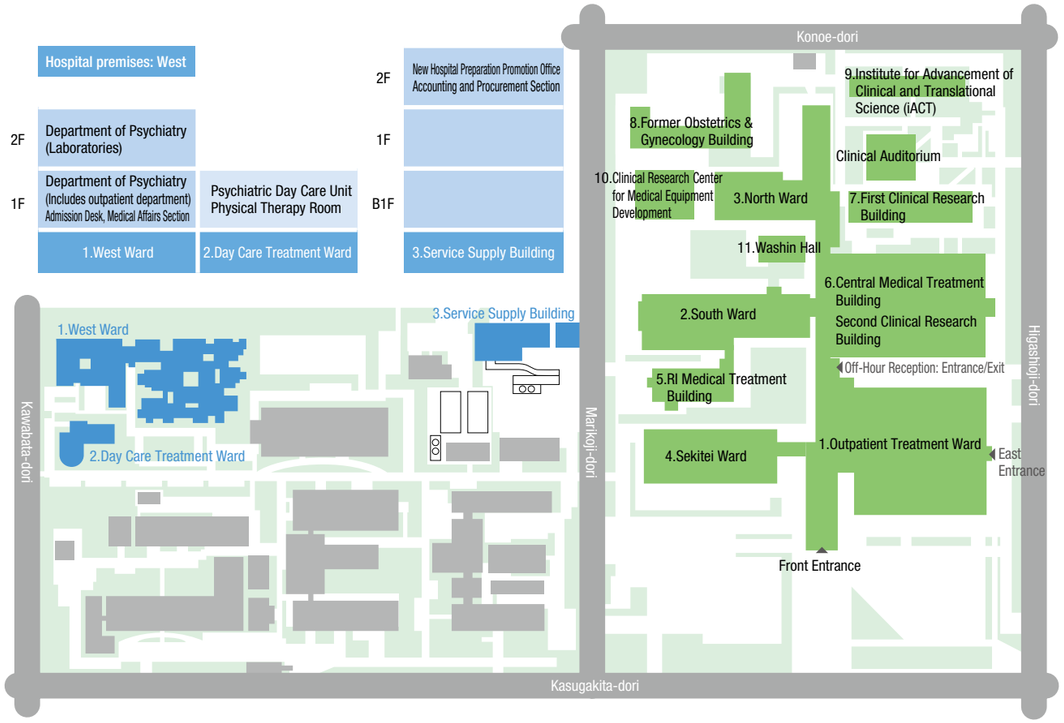
1) Forecasting management issues based on financial and service/market analyses
   We formulate management plans by consulting with the Hospital Director, and conducting the required research and surveys for the analyses and forecasts. Our team also plans programs for hospital management after investigating various management parameters.

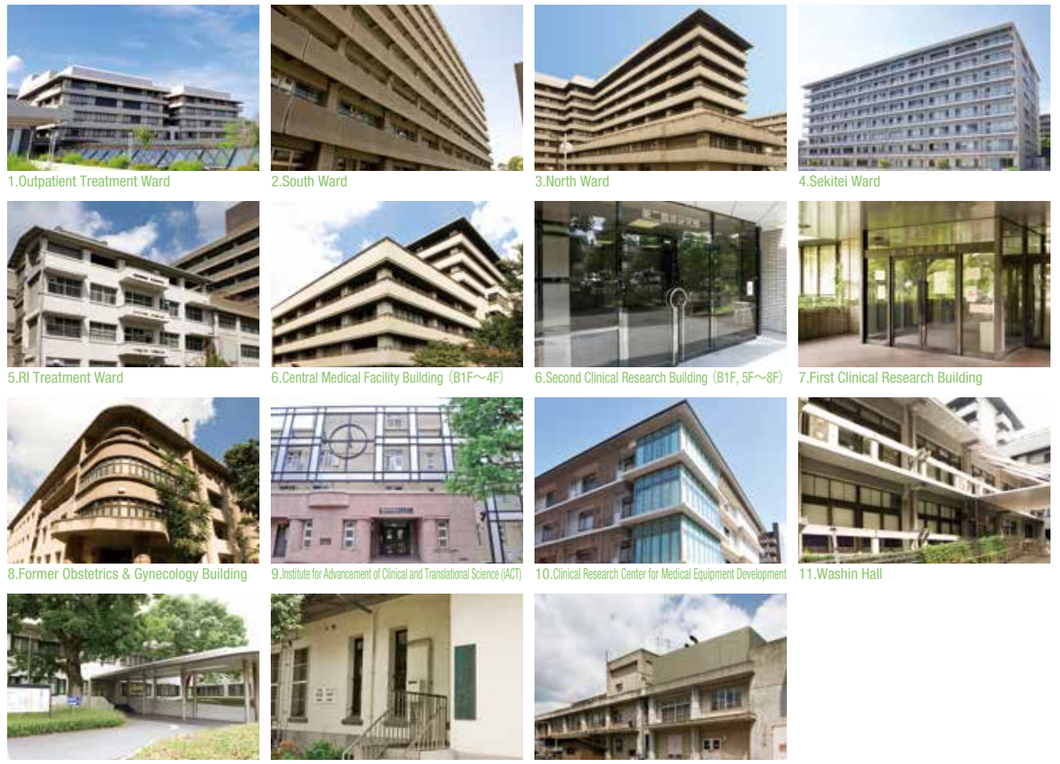
2) Supporting the activities of the Bed Control Center, founded by OHSP for maximizing bed utilization to attain stable management

3) Planning/management of conferences with each department to evaluate departmental needs as well as to notify them of requests from the hospital executives

HOSPITAL MAP

Layout of the hospital premises





Hospital premises: East

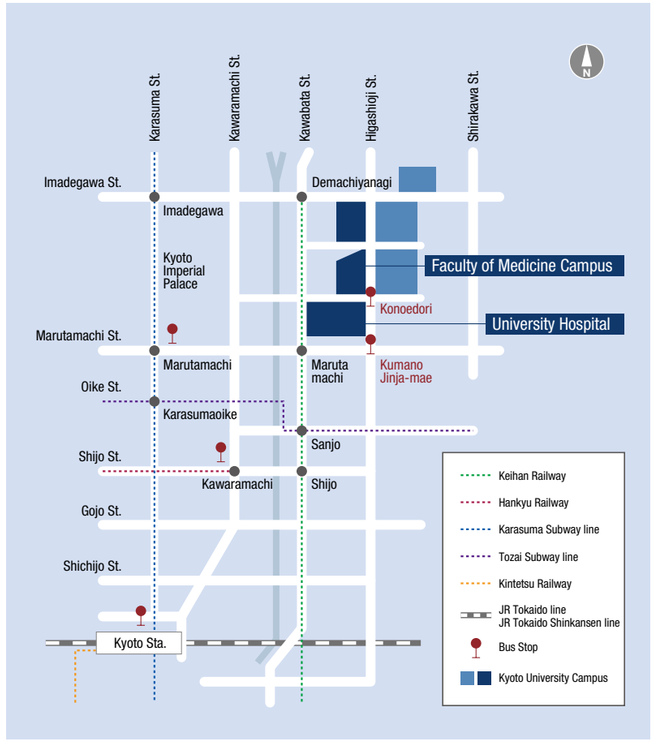
	1.Outpatient Treatment Ward	2.South Ward	3.North Ward	4.Sekitei Ward	5.RI Treatment Ward
8F		Department of Ophthalmology and Visual Sciences Department of Primary Care and Emergency Medicine Department of Hematology and Oncology	Department of Diabetes, Endocrinology and Nutrition Department of Thoracic Surgery Department of Epilepsy, Movement Disorders and Physiology	Department of Urology	
7F		Department of Otolaryngology, Head and Neck Surgery Department of Hepatobiliary Pancreatic Surgery and Transplantation Department of Neurology	Rheumatology and Clinical Immunology Department of Respiratory Medicine	Department of Gastroenterology and Hepatology	
6F		Department of Neurology Department of Gynecology	Department of Diabetes, Endocrinology and Nutrition Department of Cardiovascular Medicine Department of Nephrology	Department of Gastrointestinal Surgery Department of Breast Surgery	
5F	Director's Office / Secretary-General's Office / General Affairs Section / Business Management Section / Accounting and Procurement Section / Safety and Hygiene Management Office / Head Nurse's Office / Nursing Department Management Office / Conference Rooms / E-Teleconference Room / Training Room	Department of Hepatobiliary Pancreatic Surgery and Transplantation Department of Oral and Maxillofacial Surgery	Department of Cardiovascular Medicine Department of Dermatology	Department of Respiratory Medicine	
4F	Department of Gastrointestinal Surgery / Department of Breast Surgery / Department of Hepetobiliary Pancreatic Surgery and Transplantation / Department of Pediatric Surgery / Department of Thoracic Surgery / Department of Anesthesia/ Department of Cardiovascular Surgery / Department of Plastic and Reconstructive Surgery / Endoscopy Unit / Day Surgery Unit / Transplant Information Room / Cardiac Rehabilitation Room	Department of Hepatobiliary Pancreatic Surgery and Transplantation Department of Cardiovascular Surgery High Care Unit (HCU)	Department of Neurology Department of Dermatology Department of Plastic and Reconstructive Surgery Epilepsy & Movement Disorders	Department of Thoracic Surgery Department of Respiratory Care and Sleep Control	
3F	Department of Ophthalmology and Visual Sciences / Department of Obstetrics and Gynecology / Department of Urology / Department of Pediatrics / Department of Dermatology/ Department of Otolaryngology, Head and Neck Surgery / Ultrasound Examination Center / Cochlear Implant Rehabilitation Center / Consultation Room for Women's Mental and Physical Health /Macular Disease Treatment Center / Hospital School / Book Plaza "Hokkori" / Group Instruction Room	Department of Neurosurgery Stroke Care Unit (SCU) Department of Anesthesia	Department of Pediatrics Department of Pediatric Surgery Department of Cardiovascular Surgery (Pediatric) Department of Plastic and Reconstructive Surgery (Pediatric)	Department of Hematology and Oncology	Clinical Radiology Service Unit (RI Examination Room)
2F	Department of Hematology and Oncology / Department of Diabetes, Endocrinology and Nutrition / Department of Rheumatology and Clinical Immunology / Department of Neurology / Department of Gastroenterology and Hepatology / Department of Respiratory Medicine / Department of Nephrology / Department of Cardiovascular Medicine / Department of Neurosurgery / Department of Oral and Maxillofacial Surgery / Clinical Genetics Unit / Central Blood Collection Room / Urine Testing Room / Geriatric Medicine Unit / Nutritional Guidance Room	Department of Orthopaedic Surgery Rheumatic Disease Center	Department of Obstetrics Department of Maternal and Perinatal Care Neonatal Intensive Care Unit (NICU)	Kyoto University Cancer Center Department of Radiation Oncology and Image-Applied Therapy Multidisciplinary Cancer Treatment Ward	Clinical Radiology Service Unit (RI Examination Room)
1F	Department of Primary Care and Emergency Medicine / Department of Orthopaedic Surgery / Rheumatic Disease Center / Department of Diagnostic Imaging and Nuclear Medicine / Department of Outpatient Cancer Treatment / Palliative Care Center / Division for iPS Cell Application Development / Department of Community Network and Collaborative Medicine (DCNCM) and the Regional Medical Liaison Office (RMLO) / General Reception Desk / Admissions Desk / Off-Hour Reception Medical Services Section / Medical Affairs Section / Document Management Office /Janitor's Room / Disaster Prevention Center / General Information / Dispensary / External Prescription Corner / Nutritional Guidance Room / Post Office / Restaurant / Doutor Coffee	Department of Diabetes, Endocrinology and Nutrition / Department of Cardiovascular Medicine / Department of Rheumatology and Clinical Immunology / Department of Nephrology / Cardiovascular Care Unit (CCU) / Rheumatic Disease Center	Department of Diabetes, Endocrinology and Nutrition Department of Respiratory Medicine Department of Radiation Oncology and Image-Applied Therapy	Kyoto University Cancer Center / Outpatient Chemotherapy Room Department of Radiation Oncology and Image-Applied Therapy / Department of Palliative Medicine / Department of Outpatient Cancer Treatment / Department of Clinical Pharmacology and Therapeutics (Pharmacy) / Cancer Consultation Support Center	Clinical Radiology Service Unit (RI Examination Room and Reception Desk)
B1F	Clinical Radiology Service Unit (MR / Bone Density Measurement and Testing Room) / Department of Clinical Pharmacology and Therapeutics (Pharmacy) / Department of Clinical Trial Management / Department of Medical Equipment (ME Center) / Medical Affairs Section / Clinical Record Management Unit / Ward Pharmacy / Lawson / Drugstore / Barber Shop	Medical Information Technology and Administration Planning / Business Management Section	Rehabilitation Unit Shops Bookstore (medical books)	Department of Metabolism and Clinical Nutrition	Clinical Radiology Service Unit (Cyclotron Room)

Hospital premises: West

	1.West Ward	2.Day Care Treatment Ward	3.Service Supply Building
2F	Department of Psychiatry (Laboratories)		New Hospital Preparation Promotion Office Accounting and Procurement Section
1F	Department of Psychiatry (Includes outpatient department) Admission Desk, Medical Affairs Section	Psychiatric Day Care Unit Physical Therapy Room	
B1F			

	6.Central Medical Facility Building（B1F～4F） Second Clinical Research Building（B1F, 5F～8F）	7.First Clinical Research Building	8.Former Obstetrics & Gynecology Building	9.Institute for Advancement of Clinical and Translational Science (iACT)	10.Clinical Research Center for Medical Equipment Development	11.Washin Hall
8F		Department of Dermatology Department of Plastic and Reconstructive Surgery	Department of Ophthalmology and Visual Sciences Department of Pediatric Surgery Department of Breast Surgery Department of Hepatobiliary Pancreatic Surgery and Transplantation			
7F		Department of Hematology and Oncology Department of Gastroenterology and Hepatology	Department of Gastrointestinal Surgery Department of Hepatobiliary Pancreatic Surgery and Transplantation Department of Orthopaedic Surgery Department of Breast Surgery			
6F		Department of Diabetes, Endocrinology and Nutrition Department of Gastroenterology and Hepatology	Department of Cardiovascular Surgery Department of Obstetrics and Gynecology Department of Otolaryngology, Head and Neck Surgery			
5F		Department of Cardiovascular Medicine Department of Gastroenterology and Hepatology	Department of Cardiovascular Surgery Department of Urology Department of Neurosurgery	Department of Medical Information Technology and Administration Planning	Medical Equipment Development Assistance Room Conference Room Industry-Academia Collaboration Office Research Projects	
4F		Department of Geriatric Medicine Department of Neurology	Surgery Unit	Department of Gastroenterology and Hepatology / Endoscopy Unit / Department of Primary Care and Emergency Medicine / Department of Obstetrics and Gynecology/ Department of Diagnostic Pathology Clinical Oncology and Pharmacology	Research Projects	
3F		Department of Pediatrics Department of Anesthesia	Surgery Unit / Intensive Care Unit (ICU) Artificial Kidney Unit Department of Transfusion Medicine and Cell Therapy Molecular and Cellular Treatment Center	Human Brain Research Center Translational Clinical Oncology / Target Therapy Oncology (Contributed Chairs) / Pharmacotherapeutic Oncology / Respiratory Care and Sleep Control The Control for Rheumatic Diseases (Contributed Chairs)	Department of R&D Alliances Department of Experimental Therapeutics Department of EBM Research	Research Projects	
2F		Department of Oral and Maxillofacial Surgery Clinical Laboratory	Clinical Laboratory / Department of Infection Control and Prevention Department of Diagnostic Pathology Patient Safety Unit Clinical Psychology Office	Department of Clinical Pharmacology and Therapeutics (Pharmacy) Department of Transfusion Medicine and Cell Therapy	Department of Data Science Department of EBM Research	Research Projects	Integrated Clinical Education Center
1F		Department of Radiation Oncology and Image-Applied Therapy Department of Diagnostic Imaging and Nuclear Medicine	Emergency Outpatient Clinic / Clinical Radiology Service Unit Clinical Radiology Service Unit Information X-Ray and Rehabilitation Reception Desk	Human Brain Research Center RI Experimental Facilities	Department of Experimental Therapeutics (Document Management Room) Department of Data Science Department of Clinial Innovative Medicine Conference Room	Management and Administration Office Research Projects	Integrated Clinical Education Center
B1F		Seminar Room	Clinical Radiology Service Unit / Department of Metabolism and Clinical Nutrition Hyperbaric Oxygen Therapy Unit / Department of Medical Equipment Accounting and Procurement Section / Auditorium	Human Brain Research Center		Research Projects	

ACCESS MAP



From Kyoto Station (JR/Kintetsu/Subway)

Station	Bus number	Destination	Bus stop
Kyoto Station (JR/Kintetsu/Subway)	Bus #206 (D2 bus stop)	Higashiojidori Kitaoji bus terminal (30minutes)	Kumano Jinja-mae (5minutes on foot)

From Kawaramachi Station (Hankyu)

Station	Bus number	Destination	Bus stop
Kawaramachi Station (Hankyu)	Bus #201 (D6 bus stop)	Bound for Gion/Hyakumanben (10minutes)	Kumano Jinja-mae (5minutes on foot)
	Bus #31 (D6 bus stop)	Bound for Higashiyama-dori Takano/Iwakura (10minutes)	
	Bus #203 (D6 bus stop)	Bound for Gion/Kinrinshako (10minutes)	

From Higashiyama Station (Subway Tozai Line)

Station	Bus number	Destination	Bus stop
Higashiyama Station (Subway Tozai Line)	Bus #201	Bound for Hyakumanben/ Senbonimadegawa (5minutes)	Kumano Jinja-mae (5minutes on foot)
	Bus #31	Bound for Higashiyama-dori Takano/Iwakura (5minutes)	
	Bus #202	Bound for Kumano Jinja/ Nishinokyoenmachi (5minutes)	
	Bus #203	Bound for Higashitennocho/ Kinrinshako (5minutes)	
	Bus #206	Bound for Takano Kitaoji bus terminal (5minutes)	

Kyoto University Hospital
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