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.

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.
1919 2 Kyoto Imperial University College of Medicine Hospital opened.
1947 9 Kyoto Imperial University College of Medicine Hospital renamed the Kyoto Imperial University Hospital.
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.
1965 3 MR Ward established.
1967 10 First Clinical Research Ward established.
1976 5 Nursing Department established.
1982 3 Psychiatry Ward established.
1985 3 Central Medical Facility Ward established.
1988 3 Outpatient Care Ward established.
1992 1 Central/Medical Facility Ward established.
1993 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).
1999 8 Outpatient Care Ward established.
2002 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 (CRCHED) 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.

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.

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 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 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.
The document is too large to be fully transcribed here, but it appears to be a comprehensive guide to Kyoto University Hospital, covering various aspects such as hospital executives, history, and clinical departments. It includes detailed information on the hospital's facilities, services, and departments, as well as a timeline of significant events and developments. The guide also highlights the hospital's commitment to providing safe and high-quality medical care, contributing to society through research, and collaborating with other medical institutions in the region.
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Clinical Departments

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Department of Cardiovascular Medicine
Department of Rheumatology and Clinical Immunology
Department of Respiratory Care and Sleep Control Medicine
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Department of Cardiovascular Surgery
Department of Plastic and Reconstructive Surgery
Department of Anesthesia
Department of Diagnostic Imaging and Nuclear Medicine
Department of Oral and Maxillofacial Surgery
Department of Psychiatry
Department of Otolaryngology, Head and Neck Surgery
Department of Dermatology
Department of Pediatrics
Department of Obstetrics and Gynecology
Department of Ophthalmology and Visual Sciences
Department of Hepatobiliary Pancreatic Surgery and Transplantation
Department of Breast Surgery
Department of Gastrointestinal Surgery
Department of Palliative Medicine
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Clinical Departments

Department of Trauma and Critical Care Medicine
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Department of Multidisciplinary and Clinical Nutrition
Intensive Care Unit (ICU)
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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)
Psychological Support Service for Patients and Families
Institute for Advancement of Clinical and Translational Science (ACT)
Department of NUD Alliances
Department of Experimental Therapeutics
Department of Data Science
Department of R&D Alliances

Central Clinical Center, etc.

Clinical Laboratory
Surgery Unit
Clinical Radiology Service Unit
Rehabilitation Unit
Psychiatric Day Care Unit
Department of Medical Equipment

HOSPITAL MAP
ACCESS MAP

This 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 Families.
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, 1) advanced medical care such as allogeneic hematopoietic stem cell transplantation, for patients with hematological malignancies. 4) 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 5) 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 dysfunctions, 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, 6,8 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 2013-2013, 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 footstool hospitals for AIDS in 2008, and we have a specialized clinic for HIV infection. There is 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.

Main target diseases

Diabetes: Diabetes mellitus (type 1, type 2, other types, and gestational diabetes mellitus), hypoglycemia (insulinoma, etc.), and lipodystrophy

Endocrine disorders:

1. Hypothalamic and pituitary diseases (acromegaly, Cushing’s disease, panhypopituitarism, adult growth hormone deficiency, diabetes insipidus, etc.)
2. Thyroid diseases (Graves’ disease, Hashimoto’s disease, thyroid tumor, etc.)
3. Parathyroid diseases (hyper- and hypoparathyroidism, etc.)
4. Adrenal diseases (primary aldosteronism, Cushing’s disease, phosphataseoma, adrenal incidentaloma, Addison’s disease, etc.)
5. Obesity, metabolic bone disease, hyperlipidemia, electrolyte imbalance, dyslipidemias, etc.

Nurtional 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.

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.
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, arteriosclerotic 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 (5,04 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 (CRDE-Kyoto)—This is a multicenter long-term results/prognosis surveillance after coronary angioplasty (6-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 nonblind 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.
• KRAF registry—This is a multicenter prospective implantable cardioverter-defibrillator registry that started mainly in the Kansai area. Patients are currently being recruited.

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 PNL4050EP for patients with local failure after chemoradiotherapy for esophageal cancer (investigator-initiated clinical trial).
• A randomized controlled phase II study comparing CRT versus DCF versus CRT-RT as neoadjuvant treatment for locally advanced esophageal cancer (JC001109).
• A multi-institutional study of disease-associated genes in patients with fgf24-related autoimmun lymphoproliferative disease.
• A multi-institutional prospective observational study of branch-type intraductal papillary mucinous neoplasms (IPMN).

Main target diseases

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

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 hepatitis, liver tumors, and liver failure, consultation services of 4-5 persons per team are provided.
• 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.

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:

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• A multi-institutional prospective observational study of branch-type intraductal papillary mucinous neoplasms (IPMN).
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 medications.
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, 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 Kyotou 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 inpatient care, our respiratory unit has 63 beds at the fourth floor for adult patients and five beds in the Sakei wards, while there are 15 beds for tuberculosis on the first floor of the North wing. 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 record of 2012, with the highest number in the Internal Medicine department.

We aim to provide patient-friendly medical treatment. We strive to offer the latest and best medications. 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, respiratory failure, respiratory tract infection, and lung tumors.

We provide special clinical treatment for COPD, chronic cough, interstitial lung disease, and sleep apnea, which are prevalent in Japan.

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 dosage examination study among other international facilities (Nihon Shokuhin 183 phase II study for adult patients with uncontrolled asthma, double-blind placebo control, parallel groups, and dosage examination study) (Three-arm Randomized Phase III study of the Maintenance of Pemelizab, Bevacizumab, and Bevaxizumab/Pemelizab after induction chemotherapy with Bevacizumab/Pemelizab/Carpilac in Patients with Non-squamous Non- Small-Cell Lung Cancer) (Multicenter Lymphangioleiomyomatosis Long Term Trial: MLTTS trial) (July 2012, Academic lecture meeting at Nishigoyou-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”.

Specific treatment practices for sleep disordered breathing and respiratory care

We manage the outpatient clinic for Respiratory Care and Sleep Disordered Breathing (SDB) (Sleep Apnea) from Monday to Friday and Sleep Disturbance in Neurology on Monday. Contribution to the management of SDB patients with lifestyle-related diseases (hypertension, diabetes mellitus, heart failure, etc.) in cooperation with related departments. Contribution to forefront medicine through periphereic respiratory care. Providing 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 hypoxemia, Periodic limb 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) (Sleep Apnea) from Monday to Friday and Sleep Disturbance in Neurology on Monday. 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. We perform official polysomnography (PSG) for more than 500 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 thrue 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 certified internationally (REPSIT) 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 paroxysmal, 4 cases of idiopathic, 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 Adverse Vento 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.
Main target diseases

- Rheumatoid arthritis, systemic lupus erythematosus, mixed connective tissue disease, scleroderma, dermatomyositis and polymyositis, Sjögren’s syndrome, vasculitis syndrome (Takayasu’s arteritis, granulomatosis with polyangiitis, polyarteritis nodosa, etc.), adult-onset Still’s disease, Behçet’s disease, antiphospholipid syndrome, polymyagia rheumatica, IgG4-related disease, etc.

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 advancements 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.

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 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 autoantibodies 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 progressive 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

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 (rSO2) 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

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 2,009 units
- The number of patients admitted from the department of 2,111 corresponding to about 10% of all hospitalized patients in our hospital

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 (rSO2) 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
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

Cerebrovascular disease (cerebral infection), 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 sixth floor area common between the Department of Otorhinolaryngology in the South ward, four beds in the sixth floor area common between the departments of Plastic and Reconstructive Surgery and Dermatology in the North ward, six beds in the seventh floor area common between the Department of Otorhinolaryngology in the South ward).

Clinical research activities

The following wide variety of clinical studies are being carried out:

1. Development of presurgical evaluation methods for refractory epilepsy by video EEG monitoring, and development of new methods for treating epileptic seizures by means of clinical neuropsychological techniques (neurolinguistic feedback methods, etc.)
2. Development of new methods for treating epileptic seizures by means of clinical neuropsychological techniques (neurolinguistic feedback methods, etc.)
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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 1,800 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.

Advanced medical technology

We have initiated the following collaborative studies:

1. 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.

Number of Inpatients in Department of Neurology (Annual data)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total (other diseases are included)</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>962</td>
<td>940</td>
</tr>
<tr>
<td>Endocrine/metabolic diseases</td>
<td>5</td>
<td>2</td>
<td>18</td>
</tr>
<tr>
<td>Muscular disease</td>
<td>40</td>
<td>56</td>
<td>18</td>
</tr>
<tr>
<td>Spinocerebellar degeneration</td>
<td>54</td>
<td>58</td>
<td>27</td>
</tr>
<tr>
<td>Motor neuron disease</td>
<td>40</td>
<td>56</td>
<td>46</td>
</tr>
<tr>
<td>Parkinson’s diseases/similar disorders</td>
<td>189</td>
<td>171</td>
<td>179</td>
</tr>
<tr>
<td>Cerebrovascular disease</td>
<td>202</td>
<td>154</td>
<td>145</td>
</tr>
<tr>
<td>Infections including those associated with encephalitis</td>
<td>43</td>
<td>26</td>
<td>14</td>
</tr>
<tr>
<td>Demyelinating disease including disseminated sclerosis</td>
<td>14</td>
<td>46</td>
<td>46</td>
</tr>
<tr>
<td>Other diseases</td>
<td>62</td>
<td>50</td>
<td>46</td>
</tr>
<tr>
<td>Total</td>
<td>962</td>
<td>940</td>
<td>936</td>
</tr>
</tbody>
</table>

Director
Prof. Ryosuke Takahashi

Director
Prof. Akio Ikeda
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 hyperparathyroidism, and acid-base and electrolyte disorders.

Clinical service and performance

The cumulative total number of outpatients in 2013 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, reconstructing AV fistula 14 ANCA-associated vasculitis 4 adrenal insufficiency 1

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.

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.

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 research activities

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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 Health information. We have also launched Kyoto University Hospital’s Palliative Care Program (Kyoto University Hospital’s Palliative Care Program), which includes (6) education and training, and (7) integrating and analyzing healthcare information. We have also launched Kyoto University Hospital (Kyoto University Hospital), which includes (6) offering education and training, and (7) integrating and analyzing healthcare information.

Patient-friendly and sophisticated endoscopic surgery

The Department of Gastrointestinal Surgery in Kyoto University Hospital works toward incorporating endoscopic surgery (therapeutic 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, leu)
- Others; inguinal hernia, gastrointestinal ischemic 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 490 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>
<thead>
<tr>
<th>Procedure</th>
<th>Total cases</th>
<th>Endoscopic rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total gastrectomy (including pylorus-preserving gastrectomy)</td>
<td>42</td>
<td>53.3%</td>
</tr>
<tr>
<td>Total or proximal gastrectomy</td>
<td>42</td>
<td>53.3%</td>
</tr>
<tr>
<td>Colectomy</td>
<td>99</td>
<td>70.7%</td>
</tr>
<tr>
<td>Rectal resection of the rectum</td>
<td>68</td>
<td>57.5%</td>
</tr>
<tr>
<td>Proctectomy/rectal resection of the rectum</td>
<td>68</td>
<td>57.5%</td>
</tr>
</tbody>
</table>

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.
Department of Breast Surgery

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.

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.

Advanced medical technology
Comparison of the indocyanine green fluorescence (ICG) and radiisotope 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 biophosphonates
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)

Department of Hepatobiliary Pancreatic Surgery and Transplantation

Main target diseases
Liver disease (primary liver cancer, metastatic liver tumor), biliary disease (gallstones, choledochocarcinoma), 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, alcohols 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.

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 polyaspartic acid K (PSNK) for pancreatic cancer (phase-Ⅰ)
3) Adjuvant therapy for resectable biliary cancer
4) Adjuvant selective-arterial chemotherapy (phase-Ⅰ)
5) Immuno-nutrition before and after liver transplantation
6) Adjuvant chemotherapy with gemcitabine after curative resection of biliary cancer (phase-Ⅱ)
7) Gemcitabine plus S-1 combination therapy (GS therapy) for unresectable biliary cancer (phase-Ⅰ)
8) Randomized comparative study between the efficacy of cisplatin-TACE and epirubicin-TACE for multiple liver cancer
9) Gemcitabine/cisplatin/S-1 therapy for unresectable biliary cancer (phase-Ⅱ)
**Main target diseases**

Congenital esophageal atresia, congenital duodenal atresia, congenital small intestinal atresia, anorectal malformations (anor anal atresia), malformation of the intestine, short bowel syndrome, gastroschisis, omphalocele, diaphragmatic hernia, congenital biliary atresia, congenital duodenal atresia, congenital small intestinal atresia, anorectal malformations (anal atresia), Hirschsprung disease, biliary atresia, congenital biliary dilatation, Alagille syndrome, congenital esophageal atresia, congenital duodenal atresia, congenital small intestinal atresia, anorectal malformations (anal atresia), Hirschsprung disease, biliary atresia, congenital biliary dilatation, Alagille syndrome.

**Clinical service and performance**

- **For inpatients:**
  - An outpatient clinic for first-consultation and follow-ups.
  - Coordination for liver/small intestine transplant in cooperation with the transplant coordinator at the Transplantation Information Center at the time of the first consultation and follow-up.
  - A capacity of 11 beds at the North Ward 3F.
  - Performing childhood liver and small intestine transplantations: management/investigations in the ICU immediately after surgery and the North Ward afterwards.
  - Neonatal management in the NICU for surgical specialists for congenital disorders (including congenital esophageal atresia, congenital duodenal atresia, congenital small intestinal atresia, anorectal malformations [anor anal atresia], omphalocele, gastrochisis, congenital diaphragmatic hernia, Hirschsprung disease, and malformation of the intestine).

- **Outpatients:**
  - 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**

<table>
<thead>
<tr>
<th>Number of surgeries in the Surgery Unit</th>
<th>Total 67</th>
</tr>
</thead>
<tbody>
<tr>
<td>transplant-related thoracic organ transplants</td>
<td>11</td>
</tr>
<tr>
<td>cases in the ICU, postoperative care, discharge home, etc</td>
<td>50</td>
</tr>
<tr>
<td>Total annual number of inpatients was 15,282 with a mean hospital stay of 8.04 days.</td>
<td></td>
</tr>
</tbody>
</table>

**Community healthcare services and advanced medical technology**

- Taking patients referred from the regional pediatric clinics as well as patients who need liver transplantations 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.

**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) (MyDove) NCT01249664
  2. Japanese Safety Study of VEGF Trap-Eye in DME (Diabetic Macular Edema) (VMD-2012) NCT01512968
  3. Phase II Efficacy and Safety Clinical Study of UF-021 for Treatment of Retinitis Pigmentosa (RTG-2012) NCT01512968
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 diseases, 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 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 Ⅰ study of adjuvant chemotherapy with Irinotecan (CPT-11) plus Nedaplatin (NDP) for stage IB2 or IA cervical cancer with lymph node metastasis* (JCOG1057) by Japanese Gynecologic Oncology Group (JGOG).

Sophisticated medical care for women throughout life

The Department of Obstetrics and Gynecology in Kyoto University Hospital offers medical care for women throughout life. We have three major specialized fields: gynecology, oncology, 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 conference with gynecological pathologists twice a week and imaging conference 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.

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-P13, AML-D11, CML-08, LLB-NHL03, LCH-12, TAM-10, JMMR-11, etc.

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, hematologists, oncologists, pediatricians, and child psychologists attend to both inpatients and outpatients. Specialized co-medical staff, such as social workers and transportation 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.

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, radiology, 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 young adults (AYA), who comprise one-tenth of all pediatric patients.

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-P13, AML-D11, CML-08, LLB-NHL03, LCH-12, TAM-10, JMMR-11, etc.
For the best care of skin diseases

- Specialized outpatient clinic offering a wide range of skin care services.
- Day surgeries.
- 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, varicose ven, 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 grafts are done in the afternoon on Tuesday, Thursday and Friday.

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 ven, 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 grafts 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).

Clinical research activities

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

Department of Urology

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, safety, 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 percutaneous tumor 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 all will provide 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.

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 orchidectomy 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 12,305 (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.
Main target diseases

Severe and profound sensorineural hearing loss, vestibular and facial achenomas, Meniere’s disease, facial paralysis, chronic otitis media, inflammatory neurolasticoma, cholesteatoma, otosclerosis, chronic sinusal, 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. We performed a variety of clinical trials as follows:

- Development of a customized guide tool for osteotomy and bone and soft tissue tumors.
- 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.
- Clinical trial on the safety and efficacy of cervical spinal fusion using a custom-made titanium artificial bone.
- Clinical trial on the safety and efficacy of cervical spinal fusion using a custom-made titanium artificial bone.
- Clinical trial on the safety and efficacy of cervical spinal fusion using a custom-made titanium artificial bone.
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: 1.33).
- General outpatient office for all psychiatric disorders and special clinics for developmental and eating disorders.
- 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 (Fukushimà) 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 Nagakakyo City, and the Kyoto detention center.

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.

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 necroses 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 PS 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 Zentô Prevention Cohort Project.

Main target diseases

Dentofacial deformities (maxillary protrusion, mandibular prognathism, facial asymmetry, maxillary retraction, mandibular micrognathism, etc.); jaw and oral tumors (ameloblastoma, etc.); jaw bone cysts; oral mucosal disorders; maxillofacial and oral trauma (maxillofacial fractures, etc.); jaw pain disorders (temporomandibular joint pain); temporomandibular disorders; sleep apnea syndrome; inflammatory 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 for oral disorders and organic and functional oral care.

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 provide special outpatient services with 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 for oral disorders and organic and functional oral care.

We are conducting research on oral bisphosphonate preparations and bone metabolism markers. The cohort study includes assessment of the risk of jaw bone necroses 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 PS 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 Zentô Prevention Cohort Project.

Main target diseases

Dentofacial deformities (maxillary protrusion, mandibular prognathism, facial asymmetry, maxillary retraction, mandibular micrognathism, etc.); jaw and oral tumors (ameloblastoma, etc.); jaw bone cysts; oral mucosal disorders; maxillofacial and oral trauma (maxillofacial fractures, etc.); jaw pain disorders (temporomandibular joint pain); temporomandibular disorders; sleep apnea syndrome; inflammatory 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 for oral disorders and organic and functional oral care.

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**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 1,907 (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.

**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.

**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.

**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 Radiation Oncology and Image-Applied Therapy**

Director: Prof. Masahiro Hiraoka

**Department of Diagnostic Imaging and Nuclear Medicine**

Director: Prof. Kaori Togashi
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 anesthetics, neurodestructive drugs, and radio-frequency thermocoagulation), physical therapies (near infrared radiation and low-frequency stimulating therapy), and medications (including percutaneous administration by iontophoresis).

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, supracaudal 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.

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 neuropathic pain, pain after stroke, myofascial pain, myalgia, cluster headaches, trigeminal neuralgia, occipital neuralgia, allergic rhinitis, glossopharyngeal neuralgia, 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, osteoarthrosis 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.

Advanced medical technology

We have actively performed a variety of clinical research as follows:
- Anesthetic management of thoracoscopic or laparoscopic surgery
- Anesthetic management of awake craniotomy
- Anesthetic management of liver transplantation (including segmental liver transplantation and transplantation from a brain-dead donor for severe liver disorders)

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.

Clinical service and performance

Neurosurgery Outpatient Division includes general sections and specific sections for Moyamoya disease, Cerebral carotid artery disease, Intravascular surgery (VI), Epilepsy, Brain tumor, Neuroradiology, Children brain tumor, Neuropsychiatry, DBS & Parkinson disease, Pituitary adenoma. The Division receives more than 14,000 outpatients per year and more than 1,000 first-visit outpatient per year. The Neurosurgery Inpatient Division has a capacity of 14 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.

Main target diseases

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

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.
Compatibility between beauty and function

Life provides 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 defects 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 a deep methodology in our approach to plastic surgery.

1) Systematic approach and long-term follow-up for craniomaxillofacial defects (e.g., cleft lip, cleft palate, and microcephaly)
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) Biochemical approach for congenital malformations and trauma of upper and lower extremities (e.g., syndactyly, polydactyly, aplasia, amputation, and ingrowing toenails)
5) Surgical treatment for skin tumors and reconstructive surgery after the resection of skin cancer
6) Surgical or laser therapy for melanocytic pigmentary 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 cervical area and mastopexy for breast cancer

Main target diseases

Deft lip, Alvior cleft, Cleft palate, Submucous cleft palate, Moroita, Other auricular deformations, Congenital anomalies of the hand and foot, Phocomelia, Syndactyly, Split hand, Macroctyly, Congenital constriction ring syndrome, Facial bone fracture, Facial soft tissue injury, Burn, Intractable skin ulcer, Decubitus, Diabetic foot ulcer, Cutaneous benign tumors, Cutaneous malignant tumor, Malignant tumor of the head and neck (reconstructive surgery), Hemangioma, Nevus, Scar, Hypertrophic scar, Keloid, Scar contracture, Breast cancer (reconstructive surgery), Eyelid ptosis, Axillary osmirosis, 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 lip/palate, speech therapy, 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.

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:

1) 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
2) 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
3) Developing treatment options for keloid and new materials for wound healing for application in the clinical setting (preclinical trials have been completed)
4) Research for the application of regeneration medicines (for the skin, fat tissue, bone, and cartilage)

For basic research, our department has developed novel therapeutic methods for heart failure by using iPS cell technology as well as for angiotensin-like protein expression, with a high success rate. We have also been developing new clinical trials for possible new drugs. Our team also plans clinical trials of an agent for the treatment of heart failure.

We will perform multicenter studies of coronary bypass grafting and long-term durability of artificial valve in 27 facilities in the United States, Japan, and Europe.
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. 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. Adjunct chemoradiotherapy for advanced lung cancer: We participated in the JIPANG study, a randomized phase III study of PEM + CDDP and VPN + CDDP for completely resected non-squamous NSCLC. 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. 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. 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. Ward: Our ward is on the 4th floor of the Sekitei-ward. Patients visit this ward for surgery, chemotherapy/radiotherapy, lung transplantations, and other reasons. The outpatient clinic: The outpatient 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 exams 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. 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. Ward: Our ward is on the 4th floor of the Sekitei-ward. Patients visit this ward for surgery, chemotherapy/radiotherapy, lung transplantations, and other reasons.

Clinical service and performance

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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.
“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 subsequent consultation. In addition, we have also recently opened an integrated ultrasound center.

1. We have created a fully-automated 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 Pneumonography unit. We also have improved the quality of coronary 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-automated 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 hemopathological 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 pneumonography (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 number of orders, 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 (0.9%), 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 tests, the tests themselves are very advanced. For example, quantitative assays of Epstein-Barr virus and Cytomegalovirus are essential for 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.

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

Surgery Unit

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:

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

Main target diseases

Diseases requiring surgical intervention during the hospital stay

Advanced medical technology

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

Clinical Laboratory

Directors

Prof. Satoshi Ichiyama

Director

Prof. Susumu Miyamoto

Clinical Laboratory

Director

Prof. Satoshi Ichiyama

Surgery Unit

Director

Prof. Susumu Miyamoto

The new Hybrid Operating Room

Satoshi Ichiyama

Director

Prof. Satoshi Ichiyama
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.

1) Imaging diagnosis examines approximately 800 cases using X-p, 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 3-Tesla MR machines, which provide high-quality images. 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 MDCT machines, which provide high-quality images. Last year, we performed, on an average, 55.5 MR examinations daily and 13,533 annually.

2) The radiotherapy section comprises modern three-dimensional radiotherapy, stereotactic radiotherapy, and intensity-modulated radiation therapy (IMRT). The radiotherapy section comprises modern three-dimensional radiotherapy, stereotactic radiotherapy, and intensity-modulated radiation therapy (IMRT), which enables high-precision radiation therapy was as follows: 133 cases involved stereotactic radiotherapy (97 brains, 36 bodies), 177 involved IMRT (93 prostate 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-plan DSA, and single-plan DSA. Last year, we performed a total of 5,311 interventions annually.

Service characteristics and performance

1) Imaging diagnosis examines approximately 800 cases using X-p, 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 3-Tesla MR machines, which provide high-quality images. Last year, we performed, on an average, 156 MDCT examinations daily and 38,170 annually. Based on these numbers, we were ranked first among national university hospitals. We also have four MDCT machines, which provide high-quality images. Last year, we performed, on an average, 55.5 MR examinations daily and 13,533 annually.

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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.

Service characteristics and performance

1) 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.

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.

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.

Advanced medical technology and treatment

In the PT unit, we quantitatively assess the moving capability and ability in daily living of the patients.

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.

Main target diseases

Almost all diseases

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.
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 calls programs.

Other activity

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

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.

Our services for management/supply of medical materials:

- Staff in the sterilization center consists of one nurse director, one nurse, and contract supplier.

- We perform cleaning service of cleaning sterilization 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.

- We introduce 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-lang 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.
Main target diseases

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

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.

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

Advanced care activities

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 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 RhD) tests (15,040/y), indirect antibody screening (3,288/y), indirect antibody identification (355/y), HLA typing (363/y), HLA antibodies (711/y), and lymphocyte cross-match (121/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 (75x/y), processing and storage of PBSCs (76x/y), and removal of plasma from bone marrow graft (7x/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.

Disorders treated with the following: pancreatic islet transplants, cell immunity therapy using dendritic cells for acute myeloid leukemias and for progressive melanomas, 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 regenerative 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 1 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 autologous 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 cell”, 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.
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

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 intravascular balloon placement or arterial embolization. No patients required hysterectomy. (Placement of transcranial intravascular 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 pregnancies 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.

Department of Maternal and Perinatal Care

Director
Prof. Ikuo Konishi

Providing medical services for all blood purifying therapies

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 care as well as dialysis therapy in Kyoto University Hospital.

1. Blood purification facilities
- We have 22 beds. 15 dialysis consoles, 5 hemofiltration consoles including 3 on-line systems, and 2 consoles for apheresis therapy. The therapeutic sessions are scheduled to take place once a day, 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 3,441 dialysis patients in 2012, which has increased from 2,856 patients in 2011. However, the total dialysis number decreased from 4,360 to 4,119, indicating a reduction in initiation of dialysis therapy and patients who require tests, treatments, and surgical operations for patients with kidney failure.

2. Service characteristics and performance
- Nineteen patients were treated in 2012. Among them, we treated 83 patients whose modalities were hemodialysis in 2012, which has increased from 82 patients in 2011. However, the total dialysis number decreased from 4,360 to 4,119, indicating a reduction in initiation of dialysis therapy and patients who require tests, treatments, and surgical operations for patients with kidney failure.

- The artificial kidney unit of Kyoto University Hospital was established in 1962 and has supported patients with kidney damage with medical care as well as dialysis therapy in Kyoto University Hospital.

- Initiating chronic dialysis therapy

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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. 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 ephography. 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

Main target diseases

- Diabetes mellitus, dyslipidemia, obesity, cardiac disease, kidney disease, inflammatory bowel disease, and anemia, among others

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 enteral nutrition 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 dietitian, or health exercise instructor to practice nutrition therapy on the basis of advanced evidence and develop the human resources staff of the department.

Intensive Care Unit (ICU)

Service characteristics and performance

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, 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

- Postoperative care
  - Major operations (cardiac, esophageal, hepatobiliary, and pancreatic surgeries)
  - Transplantation (liver and lung)
- Special operations (neurological, orthopedic, urological, and pediatric surgeries)

- 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 Anesthesiology 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, ~860 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.
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 angiectasis, cholelithiasis (choledocholithiasis, choledochotomy), intrapancreatic 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 colonic polyp

- Malignant disorders:

  Laryngopharyngeal 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)

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 esophageogastroduodenoscopy (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.

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.

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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.

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.
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.

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, otorhinolaryngology, 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.

Service characteristics and performance

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/nosocomial control, preventing exposure to blood/body fluids, vaccination, educational training of staff, creation/review 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:

Expert team to address all events related to infections

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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’ progression and analysis of the mechanisms of antimicrobial resistance of microorganisms

Main target diseases

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

Consultation Room for Women’s Mental and Physical Health

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 manage 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 Nurse” 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).
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.

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 expanded the NICU floor and GCU 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 supervised 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.

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, as well 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 study on neonatal endocrinology. We are also working as the center of a nationwide research on “neonatal endocrinology.” We are trying to clarify the endocrine function of preterm infants, as well as thyroid and adrenal functions. We are also working as the center of a nationwide research organization called “Japan Neonatal Endocrine Study Group.”

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Supporting inpatients and their family members psychologically

We offer psychological support 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.

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)

(As of April 2013)

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 Clinical Research Center, Center for Clinical Pharmacology and Therapeutics, EBMR 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.
Promotion to seamless technology transfers and intellectual property management

Based on the results of research in 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-academic 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.

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 and 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.

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 environments to perform simulations for developing new therapies in Kyoto University. Additionally, our department provides medical researchers with research environments to perform simulations for developing new therapies.

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 academic-initiated clinical trials and epidemiological studies.

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, stem cell therapies, and to enhancing quality and safety throughout exploratory studies; it thus contributes to the creation of new therapies.

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 (GCP) and the Japan Society of Clinical Research and Education, 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 practices with high-quality and patient’s safety that meets the GCP.

Department of R&D Alliances

Promotion to seamless technology transfers and intellectual property management

Department of Experimental Therapeutics

Aiming at clinical application by both fixed and fluid projects

Department of Data Science

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

Department of EBM Research

Planning and performance of academia-leading clinical/epidemiological

Department of Clinical Innovative Medicine

Support to exploratory clinical studies from a team of multidisciplinary professionals

Department of Clinical Trial Management

Contribution to clinical trials with high-quality while ensuring patient safety
**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 system development of artificial intelligence in medicine 6) Research and development of VR-based surgical simulators

**Service characteristics and performance**

The Department 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 administration makes 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 practicing. We make a virtual human body in computer. 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.

**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 2003. 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 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 leaves 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.

**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

**Main target diseases**

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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; Hirono 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, “Knowledges on safety management of intravenous injection and transfusion” in the monthly Japanese journal of clinical nursing- 2012; 38:859

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: We made a stronger connection between four 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.

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.

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, orthopaedics, etc.). In total, 1,387 people took part in the seminars and courses last year. We plan to make them more satisfying 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 from the Kyoto Medical Career Support Center.

Community health activities

Associate Professor Matsumura has attended the following symposium as a symposiumat: 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.

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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. Autocoding of DPC and Bed-checker operations are promising future topics that have been developed mainly by the medical informatics and nursing departments.

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-disciplinary 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-to-date research 4) intensive education for medical doctors and medical staffs specialized to cancer therapy.

System of Kyoto University Cancer Center

(As of October 2014)
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 patient. 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.

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 has 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 trial.

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.

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

Division of Palliative Care Center was established in July 2014. The division consists of the Palliative Care Center and Palliative Care Unit, both of which are located in the Shiga Building of the Hospital. The division has a role in improving quality of clinical trail in Kyoto University Hospital. Palliative Care Unit is one of the national centers recognized by the Ministry of Health, Labour and Welfare, Japan. With the mission to provide patients and families with the best possible care and quality of life, the division is committed to providing compassionate and expert care for patients and families facing the challenges of a serious or life-limiting illness.}

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

Division of Innovation for Cancer Medicine was established in July 2011. This division has the following missions: (1) to perform specialized consultations, (2) to promote fundamental scientific research, (3) to develop new diagnostic and therapeutic strategies for cancer, (4) to integrate the clinical trials of new drugs and therapeutic regimens into the treatment of cancer patients, and (5) to lead the development of new cancer drugs.

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, truly facilitates the spread of these professionals. As for the education of the students of graduate school of medicine, we set up the specialized course of loco-regional 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 MD course of medical oncology to promote the translational research of basic science for cancer. For the practical education for team oncology, we make the teams consisted of medical oncologist, pharmacist and nurse from more than 20 hospitals every year, and broaden the team oncology through the chemotherapy for colorectal cancer.

For specialized consultations, (5) assisting in regional collaborations, (6) education and training, and (7) integrating and analyzing palliative care beds (establishing an emergency hospitalization setup), (3) providing counseling for cancer patients, (4) providing assistance for specialized consultations, (6) assisting in regional collaborations, (7) education and training, and (8) integrating and analyzing healthcare information. In fiscal 2014, Kyoto University Society for Palliative Medicine was launched. We held five lectures and case conferences on palliative care, and created a forum for sharing views on education, training, and research. As for the education of the students of graduate school of medicine, we set up the special course for practical training and for the strategy of early cancer diagnosis and effective treatment.
Clinical Research Center for Medical Equipment Development

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 4,935 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 Advanced 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

Promoting innovative medical equipment development through academia and industry collaboration

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.

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.

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.

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 Advanced 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.
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 committees 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.

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.

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, renal artery obstruction, and sudden death
- 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, sequel of CO poisoning, spinal nerve disease, and radionecrosis

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**

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". This includes the management of medical records, the Diagnosis Procedure Combination (DPC) codes, and patient information data. The unit comprises 11 members: two department directors, five specialists, one medical doctor of the MAD, and three other medical staff members. It hosts twice-monthly meetings to address various kinds of routine tasks, and a working group for CRMU operations was constituted under the information committee.

**Service characteristics and performance**

1. **Medical record service**: Medical records are stored as electronic and paper charts. Electronic charts were introduced in 2005, and the charts that had been issued before 2005 have been stored for 20 years. Paper examination sheets written by physicians 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, it will strive to ensure that all diagnostic records can be identified on electronic charts.

2. **DPC service**: Seven health information managers offer daily services to manage medical care records and other patient-related 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.

**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) Directors, Department of Medical Affairs of the MAD; and one chief of the Management Division. The unit actively makes efforts to discuss important matters from diverse perspectives.

**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 special preparations**: 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.

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 concentrations 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.

**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 the standard 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 scientists (i.e., ward pharmacists) and cooperation with various healthcare professionals.

**Dispensing activities**

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 periodic review of drugs adopted within the hospital and evaluations for generic drugs.

Therapeutic drug monitoring activities: The blood concentrations of antibiotics 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.

Clinical trial management activities: For the harmonious and sustainable 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.

**Dispensing activities**

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Therapeutic drug monitoring activities: The blood concentrations of 40 varieties of drugs, including immunosuppressants, anti-epileptics, 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 sustainable 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.
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 assure safe nursing care. To fulfill these, 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 generational capabilities 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 onco 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.
- Infusion control
  - As dedicated control infection 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 consultation to encourage patients to make their own decisions.
- Bedsore measures
  - As dedicated bed sore 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 draw 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 contrast 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 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 present 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 personal 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 voluntarily 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 reviews 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.

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
   - OHSP works to make the best use of hospital beds, promoting the acquisition of patient information, and controlling and forecasting beds.

3) Planning/management of conferences with each department to evaluate departmental needs as well as to notify them of requests from the hospital executives.
From Kyoto Station (JR/Kintetsu/Subway)

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Published in July, 2015

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