

Keio University special projects for supporting emergency medical care systems

● AY 2019

- The project management committee carefully examined the medical functions and departments that should be strengthened and selected two medical departments. Clinical departments were asked to nominate candidates who for the most part would be capable of carrying out the missions of this project entrusted to them by the director general, and the appointment of two doctors was decided.
- To strengthen emergency medical care functions in order to accept more foreign patients and to expand our emergency medical care system for COVID-19 that has rapidly spread since the start of 2020, the following equipment and items have been prepared:
 - 2 air tents for first aid
 - 1 testing equipment for measuring COVID-19 (PCR); system enhanced
 - 4 monitors for remote diagnosis
 - Surgical masks for medical care



< Air tent for first aid >



< Testing equipment for measuring COVID-19 >



< Monitor for remote diagnosis >

● AY 2020

After the AY 2019 project management committee designated the departments of Gastroenterology & Hepatology and Emergency Medicine as in need of improvement, two new doctors were hired in April 2020. The doctors have primarily received missions from the hospital's Director General but are also engaged in their department's medical treatment, education, and research activities in order to maintain and further develop the hospital's healthcare functions.

Main Activities of Physicians Hired in AY2020

Gastroenterology & Hepatology

Medical Care

- Treated outpatients and inpatients with inflammatory bowel disease
- Responsible as “ward chiefs” for managing their ward and educating senior residents on medical treatments and consultations
- Conducted rounds and held conferences on nutritional therapy for inpatients struggling with nutrition management as part of a multidisciplinary Nutrition Support Team (NST) comprised of dietitians, doctors, pharmacists, and nurses

Education

- Provided guidance to early-career doctors at case conferences
- Gave presentations to junior clinical residents, senior residents, and graduate students
One doctor received the Best Abstract Award at the 8th Annual Meeting of the Asia Organization for Crohn's & Colitis (AOCC).

Research

- Provided guidance to graduate students on the topic of “Inflammatory Bowel Disease and Thrombosis” and conducted research on how to identify high-risk patients based on actual conditions at Keio University Hospital

Emergency and Critical Care Medicine

Medical Care

- Treated critically ill patients who required intensive care (in particular, patients admitted to the hospital with severe COVID-19)
- Explored specific treatments for COVID-19, including ventilators and ECMO
- Created protocols and developed a system for ECMO treatments
- Collaborated with ECMOnet and participated in the ECMO team training program of the Ministry of Health, Labor and Welfare

Education

- Organized regularly scheduled sessions for residents to read research papers and provided guidance for EBM training
- Created slides and other content for online student clinical training
- Updated information and education on basic life support (BLS) for suspected/confirmed COVID-19 cases

Research

- Reviewed developments in hospital treatment protocols and initial medical treatments based on clinical experiences with COVID-19
→ Submitted a paper to Keio Journal of Medicine, 2020, and presented at the 48th Annual Meeting of the Japanese Association for Acute Medicine
- Conducted training for paramedics; participated in, and made recommendations for, a study group sponsored by the Ministry of Health, Labour and Welfare on infection control as it relates to emergency care
- Submitted a paper on anaphylactic shock to the Journal of the American College of Emergency Physicians Open (JACEP Open, 2020)
- Conducted research on the early diagnosis of aortic dissection

● AY 2021

- Since AY2020, we have hired a total of three physicians in the Department of Gastroenterology and Hepatology and the Department of Emergency and Critical Care Medicine.

(The Department of Gastroenterology and Hepatology hired one physician in the first half of the year and one in the second.)

- We purchased surgery masks (643 boxes with 20 masks/box) as personal protective equipment (PPE) for use against COVID-19.

Main Activities of Physicians Hired in AY2021

Gastroenterology & Hepatology

Medical Care

- Exploration of basic and clinical approaches toward the eradication of gastrointestinal cancers
- Provision of appropriate anti-cancer treatment to cancer patients
- Delivery of medical care to COVID-19 care units
- Participation in a multidisciplinary Nutrition Support Team (NST) comprising dietitians, doctors, pharmacists, and nurses to support inpatient nutrition management
- Treatment of patients with neuroendocrine tumors
- Care for outpatients and inpatients with inflammatory bowel disease (specialized outpatient clinic served approximately 150 patients per month)
- Delivery of high-quality, evidence-based care to individual patients in collaboration with a group of specialists from Gastroenterology and Hepatology and related departments

Education

- Instruction of medical students
- Instruction of senior residents at the Department of Gastroenterology and Hepatology on how to present research at academic conferences
- Training for a new generation of medical professionals, including outpatient care teams and ward chiefs, and residents specializing in the lower gastrointestinal tract
- Mentoring of residents on presenting abstracts at international conferences
- Supervision of doctoral students engaged in gastrointestinal immunology research

Research

- Research to determine the cause of neuroendocrine tumors and presented these findings at the 9th Annual Meeting of the Japan Neuro Endocrine Tumor Society (JNETS)
- Academic exchange with Memorial Sloan Kettering Cancer Center in New York following international praise for the research activities noted above
- Selected for the Takao Saruta Award for Basic Research from the Keio University Internal Medicine Alumni Association
- Clinical research on inflammatory bowel disease and basic research on the mucosal immune system of the gastrointestinal tract
- Awarded Best Abstract Award for a presentation on the use of the herbal medicine 'Indigo naturalis' as a clinically effective strategy in ulcerative colitis at the 9th Annual Meeting of the Asian Organization for Crohn's and Colitis (AOCC2021)

Emergency and Critical Care Medicine

Medical Care

- Primary clinical department managing the hospitalization of severe COVID-19 patients requiring intensive care
- Emergency outpatient care and intensive care management from a central medical team position
- Medical service provider for the Tokyo 2020 Olympic and Paralympic Games

Education

- Regular conferences supporting junior and senior residents
- Bedside teaching during clinical rounds
- Study groups to share instructive cases with junior residents

Research

- Presentation of joint research findings at the 49th Annual Meeting of the Japanese Association for Acute Medicine based on a multicenter study between Keio University Hospital, Fujita Health University Hospital, and Nagoya University Hospital that collected and analyzed data on severe COVID-19
- Clinical trials addressing severe COVID-19



(Instruction of junior and senior residents)

● AY 2022

- Since AY2020, we have hired a total of two physicians in the Department of Gastroenterology and Hepatology and the Department of Emergency and Critical Care Medicine
- We have purchased materials for PCR testing for COVID-19



(PCR testing materials: UTM305C, FLOQ swabs, etc.)

Main Activities of Physicians Hired in AY 2022

Gastroenterology and Hepatology

Medical Care

- Treatment of approximately 150 outpatients and inpatients with inflammatory bowel disease (IBD) each month
- Delivery of high-quality, evidence-based care in collaboration with a group of specialists from Gastroenterology and Hepatology and related departments

Education

- Acquisition of certification to supervise clinical training
- Training of junior staff in outpatient and inpatient care and clinical conferences

- Instruction of presenters about abstracts on basic research related to the herbal drug “indigo naturalis”
- Supervision of doctoral students engaged in gastrointestinal immunology research

Research

- Clinical research (prospective interventional studies conducted within the facility and drug development research in collaboration with industry partners) and basic research on inflammatory bowel disease and the herbal drug “indigo naturalis”
- Presentation of research at academic conferences in Japan and around the world: The 10th Annual Meeting of Asian Organization for Crohn's and Colitis (AOCC 2022), The 59th Annual Meeting of The Japanese Society for Mucosal Immunology, and the 50th Annual Meeting of the Japanese Society of Clinical Immunology

Emergency and Critical Care Medicine

Medical Care

- Treatment of emergency patients and critical patients requiring intensive care
- Primary clinical department managing the hospitalization of severe COVID-19 patients
- Acceptance of 7th-wave critical COVID-19 patients, and delivery of lifesaving intensive care

Education

- Educating students via systematic lectures and clinical training
- Weekly conferences and point-of-care testing for new residents in the outpatient and inpatient wards
- Instruction and feedback on presentation slideshows for academic conferences
- Systematic educational tools through on-campus courses for working practitioners

Research

- Basic and clinical research on cardiopulmonary resuscitation (CPR)
- Participation in a multicenter, double-blind, controlled trial to evaluate the efficacy of hydrogen inhalation therapy for out-of-hospital cardiac arrest patients conducted at 15 facilities nationwide
- Presentation at the American Heart Association's Resuscitation Science Symposium
- Investigation into the relationship between immune mechanisms and post-resuscitation brain damage due to cardiac arrest using lab mice, with the aim of developing novel therapies through immune modulation

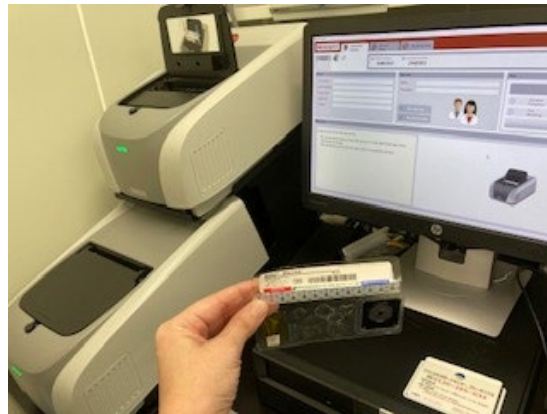


(Teaching graduate students how to generate lab mice for cardiopulmonary resuscitation)

● AY 2023

- As we have done each fiscal year since 2020, we have hired a total of two physicians in the Department of Gastroenterology and Hepatology and the Department of Emergency and Critical Care Medicine.
- We have purchased materials for PCR testing for COVID-19.

Film Array Respiratory Panel 2.1
Cepheid Xpert Xpress SARS-CoV-2



(The panel is set in the analyzer to determine a positive/negative result)

Main Activities of Physicians Hired in AY 2023

Gastroenterology and Hepatology

Medical Practice

- Treatment of approximately 200 outpatients and inpatients with inflammatory bowel disease (IBD) each month
- Delivery of high-quality, evidence-based care in collaboration with a group of specialists from Gastroenterology and Hepatology and related departments

Education and Training

- Clinical training supervision
- Training of junior staff in outpatient and inpatient care and clinical conferences
- Instruction of presenters about abstracts on basic research related to the herbal drug “indigo naturalis”
- Supervision of doctoral students engaged in gastrointestinal immunology research

Research

- Clinical research (prospective interventional studies conducted within the facility and drug development research in collaboration with industry partners) and basic research on inflammatory bowel disease and the herbal drug “indigo naturalis”
- Research grant on elucidating the causes and pathologies of adult-onset diseases, presented at the 29th The Medical Frontier Conference (TMFC) on June 24–25, 2023



In the outpatient clinic

(*Face masks worn during patient consultations)

Medical Practice

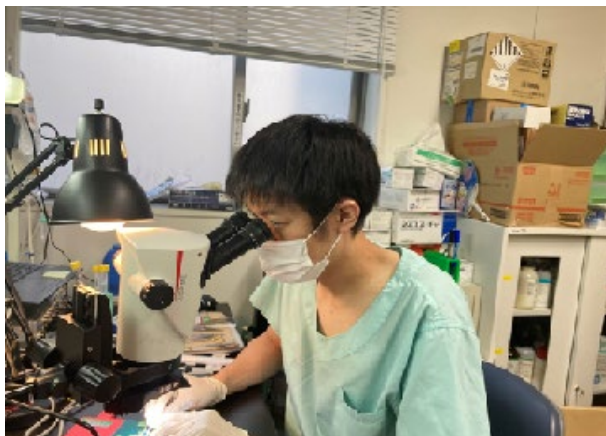
- Treatment of emergency patients and critical patients requiring intensive care
- Surgeries for severe trauma patients performed by trauma surgeons, including acute appendicitis and bowel obstruction
- Serving as the primary clinical department for managing the hospitalization of patients with severe cases of COVID-19
- Managing beds in the High Care Unit (HCU)

Education and Training

- Conducting lectures and providing guidance for medical students during their clinical training
- Hosting international students
- On-the-job training, regular conferences, and study groups for junior and senior residents
- Simulation education and guidance for academic conference presentations

Research

- Publishing case reports as well as clinical research papers in medical journals using statistical analysis
- Presentations at academic conferences (Japanese Association for Acute Medicine, The Japanese Association for The Surgery of Trauma)
- Basic research using a rat hemorrhagic shock model (investigating whether hydrogen gas inhalation during transfusion resuscitation can reduce ischemic injury and reperfusion injury, stabilize hemodynamics, reduce transfusion volume, and improve survival rates)



(Creating a rat hemorrhagic shock model)

● AY 2024

- As we have done each academic year since 2020, we have hired a total of two physicians in the Department of Gastroenterology and Hepatology and the Department of Emergency and Critical Care Medicine.
- We have purchased materials for PCR testing for COVID-19.

Film Array Respiratory Panel 2.1
Cepheid Xpert Xpress SARS-CoV-2



(The panel is set in the analyzer to determine a positive/negative result)

Main Activities of Physicians Hired in AY 2024

Gastroenterology and Hepatology

Clinical Practice

- Provided care for approximately 300 outpatients and inpatients with inflammatory bowel disease (IBD) each month
- Collaborated with a group of specialists from Gastroenterology and Hepatology and related departments to deliver high-quality, evidence-based care

Education and Training

- Oversaw student education, including exam creation and grading for third-year undergraduate students, and on-site instruction and management for fifth- and sixth-year students in internal elective clinical clerkships
- Served as an evaluator for the Post-CC OSCE for sixth-year students and delivered preparatory lectures for the national examination
- Contributed to the training of junior staff in outpatient and inpatient care, as well as clinical conferences
- Supervised doctoral students engaged in gastrointestinal immunology research

Research

- Conducted clinical research (prospective interventional studies conducted within the facility and drug development research in collaboration with industry partners) and basic research on inflammatory bowel disease and the herbal drug “indigo naturalis”
- Conducted research on adult disease pathogenesis, supported by a The Medical Frontier Conference (TMFC) grant from The Medical Frontier Conference (TMFC), and presented at the conference (June 29–30, 2024)
- Engaged in discussions on research findings with various labs at the Okinawa Institute of Science and Technology Graduate University (OIST) (October 17–19, 2024)
- Served as principal investigator for the post-marketing surveillance study (Uplift) on the efficacy of upadacitinib in Crohn’s disease patients



Fifth-year students receiving instruction on electronic health records (EHRs) during their clinical training

Emergency and Critical Care Medicine

Clinical Practice

- Provided initial treatment for emergency transport patients and critically ill patients requiring intensive care
- Managed critically ill patients in the ICU and worked to improve outcomes for post-cardiac arrest patients
- Oversaw extracorporeal membrane oxygenation (ECMO) for critical COVID-19 patients
- Provided intensive care and performed surgeries for severe burn patients

Education and Training

- Delivered lectures and provided guidance for medical students during their clinical training
- Provided instruction to international students and reviewed their written reports
- Provided on-the-job training, regular conferences, and study groups for junior and senior residents
- Simulation education and guidance for academic conference presentations

Research

- Published case reports as well as clinical research papers in medical journals using statistical analysis
- Presented research based on a Japanese burn patient database at the 22nd Congress of the International Society for Burn Injuries, held in the UK



Presenting at the 52nd Annual Meeting of the Japanese Association for Acute Medicine