



Shizuoka Cancer Center

Hospital & Research Institute

Facility Guide 2024



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About the Shizuoka Cancer Center



For Patients, Their Families, and the Future

The Shizuoka Cancer Center administers cancer treatment under the banner of 'emphasizing the patients' perspectives', being based on three promises to patients and their families; we will skillfully cure cancer, support patients and their families, and our staff will continue to grow and evolve. Construction started in 1998, based on the original plans drawn up in 1995, and March 2002 saw the completion of the Shizuoka Cancer Center, consisting of the main hospital building, the Proton Therapy Facility, the Annex for Palliative Care Ward and the Energy Center. Situated on a hilltop, we aim to form a reassuring landmark for local people. Almost half of the hospital rooms are for single occupancy, with the remainder serving two people.

Established

Established in the Name of the Governor of the Shizuoka Prefecture	
Shizuoka Cancer Center Hospital	September 6, 2002
Shizuoka Cancer Center Research Institute Building	November 1, 2005

Qualified by

- The Japanese Association of Clinical Cancer Centers (Oct. 31, 2003)
- The Ministry of Health, Labor and Welfare as an Advanced Treatment Hospital (Apr. 1, 2013) and as a Core Cancer Hospital (Aug. 24, 2006)
- The Japan Council for Quality Health Care (certification renewed on Dec. 7, 2018)
- The Japanese Nursing Association as Certified Nurse Educational Institution (Jan., 2013 for Breast Cancer Nursing, Nov., 2011 for Radiation Therapy Nursing, Nov. 6, 2009 for Palliative Care and Nov. 1, 2008 for Wound, Ostomy and Continence Nursing)
- The Ministry of Health, Labor and Welfare as a Special Functioning Hospital (August, 2013)

Awards

- The Japan Cancer Society Special Award (Asahi Award) for “Patient Support and Inquiries,” Sep. 14, 2012

Factual Summary about the Shizuoka Cancer Center

1. Location: 1007 Shimonagakubo, Nagaizumi-cho, Sunto-gun, Shizuoka Pref.
2. Total Site Area: 131,047.95m²
3. Facilities
Main Hospital Building, Palliative Care Unit (annex), Proton Therapy Facility, Radiation Therapy Wing (construction completed in June, 2015, and launched the operation in Nov., 2015), Energy Supply Center, Research Institute (opened in Nov., 2005), Administration Building (construction completed in 2009, and launched the operation in Dec., 2009), Staff Quarters, Nursery, Accommodations for the Pediatric Patients’ Families
4. Facility Outlines

	Main Hospital Building	Palliative Care Unit (annex)	Proton Therapy Facility	Radiation Therapy Wing (including waiting room)
Site Area	14,180m ²	1,961m ²	2,687m ²	701m ²
Total Floor Area	66,492m ²	2,036m ²	4,792m ²	701m ²
Number of Stories	11 above grade, 1 in the basement	2 above grade	4 above grade	1 above grade
Architectural Structure	steel-framed reinforced concrete	reinforced concrete	reinforced concrete	reinforced concrete

	Research Institute	Energy Supply Center	Admin. Bldg. (incl. corridor)	Total
Site Area	2,264m ²	1,646m ²	2,124m ²	25,563m ²
Total Floor Area	8,289m ²	2,757m ²	9,712m ²	94,779m ²
Number of Stories	4 above grade	3 above grade	5 above grade, 1 in the basement	—
Architectural Structure	steel-framed reinforced concrete	steel-framed reinforced concrete	reinforced concrete	—

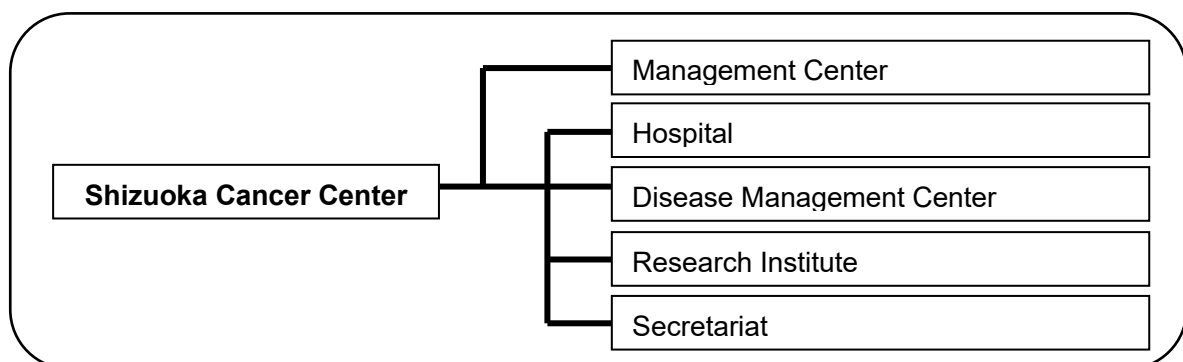
- *1 Total floor area of the main hospital building includes the parking with 7,564m² in the basement.
 2 The architectural structure of the waiting room building in the radiation therapy wing is steel construction.

Project Cost

(unit: thousand yen)

		projection for FY2021	projection for FY2022	projection for FY2023	total
Site Acquisition	SCC (122,512.08), off-campus parking areas, emergency heliport	0	0	0	4,236,222
Architecture Constructions		532,362	210,672	84,469	53,051,107
Hospital Facilities	main hospital bldg., palliative care unit, energy supply center, admin. bldg. radiation therapy wing, parking areas, etc.	213,362	72,402	84,469	41,010,346
Proton Therapy Facility	proton therapy equipment (synchrotron, rotating gantries, etc.) , facility building	319,000	138,270	0	7,360,592
Research Institute	Opened in Nov., 2005	0	0	0	3,499,389
Nursery & others	staff quarters (60 homes), nursery, accommodations for patients' families	0	0	0	1,180,780
Instruments & Apparatuses		681,820	521,351	3,395,090	38,102,276
Medical Instruments & Apparatuses	medical instruments incl. PET, MRI, linac accelerators, etc. and furniture & fixtures incl. beds, etc.	611,765	411,776	1,043,516	26,492,555
Installing Medical Information System	structuring electronic health record system, and cancer treatment facility network	35,350	59,285	2,317,575	9,416,596
Laboratory Instruments	laboratory instruments, furniture & fittings	34,705	50,290	33,999	2,193,125
Total of Project Costs		1,214,182	732,023	3,479,559	95,389,605

Organization Chart



Board of Directors

President		Katsuhiko Uesaka, M.D., Ph.D.
Managing Director		Akihiro Uchida
	Director, Management Center	Mitsugu Suzuki
	Director	Hiroyuki Ono, M.D., Ph.D.
	Deputy Directors	Hirofumi Yasui, M.D. Masashi Niwakawa, M.D., Ph.D. Masanori Terashima, M.D., Ph.D. Yasuhiro Tsubosa, M.D., Ph.D. Yuji Ishida, M.D., Ph.D. Toshiaki Takahashi, M.D., Ph.D. Idumi Suishu, R.N.
	Director of Nursing	Kumi Endo, R.N.
	Director, Disease Management Center	Mitsuru Takahashi, M.D., Ph.D.
	Director, Research Institute	Yasuto Akiyama, M.D. Ph.D.
	Secretary General, Secretariat	Suguru Horikawa

President Emeritus		Ken Yamaguchi, M.D., Ph.D.
Honorary Director		Kenichi Tobisu, M.D., Ph.D.
		Sunao Tamai, M.D., Ph.D.
		Mitsuru Takahashi, M.D., Ph.D.

Our Basic Principles and Policy for Respecting Patients' Rights

Basic Principles

Emphasizing the patients' perspectives

Promises to Patients (Principles)

1. We cure and care cancer patients with skills.
2. We support patients and their families thoroughly.
3. We continue to grow and evolve.

Basic policies

1. We provide safety and the highest level of medicine as a highly-specialized medical

institution for cancer.

2. We practice holistic medicine through thriving for dialogues with patients and their families.
3. We support each patient in a multidisciplinary team so that they can have the best and optimal medical care.
4. We provide fulfilling palliative medicine.
5. We firmly retain an attitude to learn from the patients and their families.
6. We enhance cooperation with the local communities and support the patients together with them.
7. We, as the Shizuoka Cancer Center, all work together to promote the advancement and research for newly-developed cancer medicine.
8. We comprehensively promote the cancer control program developed by Shizuoka Prefecture as a designated cancer hospital.
9. We foster human resources who can be contributing to the advancement of cancer medicine.
10. We constantly make management efforts for the ongoing growth.
11. We promote the Pharma Valley Project, aiming at the vitalization of the medical and healthcare industry of the region.

FACILITY INFORMATION

Wards and Beds

Wards		Number of Beds									No. of Total Beds
		2002 Sep.9~	2003	2004	2005	2006~ 2008	2009~ 2011	2012~ 2014	2015	2016	2017~
Total wards and beds	16	313	403	465	509	569	569	589	606	611	615
General wards	12	240	324	384	420	480	480	492	528	533	504
Palliative Care Units	2	34	34	34	42	42	42	50	50	50	50
GICU (General ICU/High Care Unit)	1	14	14	14	14	14	14	14	28	28	28

Hospital

Number of Divisions: 41 Clinical Departments

Neurosurgery, Head and Neck Surgery, Thoracic Surgery, Esophageal Surgery, Gastric Surgery, Colon and Rectal Surgery, Hepato-Biliary-Pancreatic Surgery, Breast Surgery, Multidisciplinary Therapy for Breast Cancer, Breast Oncology, Gynecology, Urology, Ophthalmology, Dermatology, Plastic and Reconstructive Surgery, Orthopedic Oncology, Dentistry and Oral Surgery, Gastrointestinal Oncology, Thoracic Oncology, Clinical Oncology, Stem Cell Transplantation, Pediatrics, Nephrology, Endocrinology and metabolism, Palliative Medicine, Cardiology, Infectious Diseases, Rehabilitation Medicine, Psycho-oncology, Neurology, Anesthesiology, Critical-Intensive Care (CIC), Endoscopy, Diagnostic Radiology, Interventional Radiology, Clinical Physiology, Radiation Oncology, Proton Therapy, Pathology etc.

Major Medical Facilities

- ◆ Proton-beam Treatment Facility
- ◆ Four Robotic Surgical Systems “da Vinci” and “Hinotori”
- ◆ Four Linac Radiotherapy Systems Including Three “True Beam”
- ◆ 320-Row Multi-detector Computed Tomography Scanners
- ◆ Two 3.0 Tesla Magnetic Resonance Imaging System
- ◆ Two PET-CT Diagnosis Equipment
- ◆ IVR-CT Equipment (320 Rows)
- ◆ Palliative Care Unit (50 Beds in 2 Wards)
- ◆ Chemotherapy Center (54 Beds), Supportive Care Center

- ♦ Division of Endoscopy (10 Examination and Treatment Rooms, 2 X-TV Rooms and 30 Beds in the Recovery Room)

Number of Staff (as of April 1, 2024) 2,300

- doctor/dentist : 251
- nurse : 750 assistant nurse : 67
- pharmacist : 67 assistant pharmacist : 14
- clinical laboratory technician : 58 assistant technician : 16
- clinical radiologist : 55 medical physicist : 4 assistant radiologist : 2
- physical therapist, occupational therapist, and speech therapist : 21
- medical engineering technologist : 10 managerial dietitian : 9 dental hygienist : 10
- health information manager : 6 assistant health information manager : 21
- medical social worker : 9 psycho-examiner : 3 child life specialist : 2
- genetic counselor : 4
- biostatist,etc. : 6
- other medical staff : 4
- administrative staff : 206
- researcher at the Research Institute : 31 (including hospital staff)
- outsourced medical processor, supply & distribution service, security guard, receptionist, etc. : 624

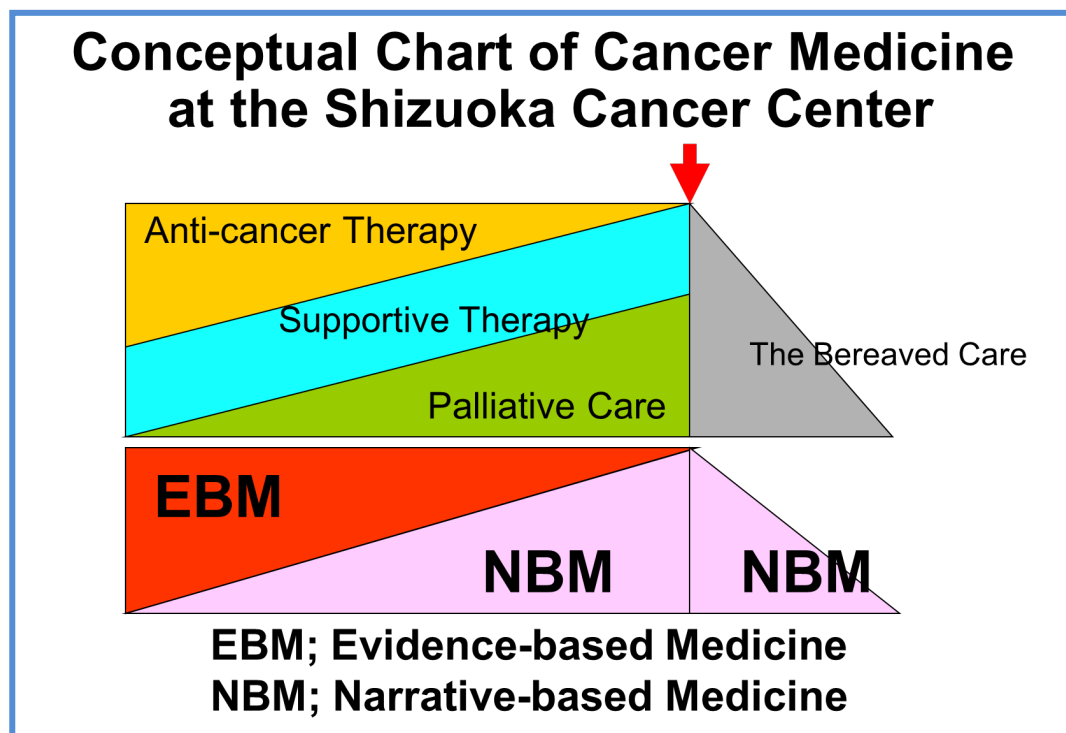
Cancer Medicine Principles at the Shizuoka Cancer Center

1) What we do to fulfil one of the promises to patients, “We cure and care cancer patients with skills

At the Shizuoka Cancer Center, we aim to practice medicine emphasizing patients’ and their families’ perspectives. When it comes to cancer medicine, what often happens is that only a pathological abnormality called cancer is focused on. However, a cancer patient is indeed a person with body and soul who has happened to have a disease called cancer. At the SCC, holistic medicine, which is to focus on a patient as an emotional being, is pursued.

Cancer medicine offered at the SCC can be divided into four categories; “anti-cancer therapy,” “supportive therapy,” “palliative care” and “the bereaved care.” Anti-cancer therapy consists of three mainstays, that is, surgery, radiotherapy and chemotherapy. Multidisciplinary medical team tackle cases for complete cure of the disease, as well as cases for living with cancers when distant metastases are developed. At the same time, we offer supportive therapy to improve quality of life (QOL) of a patient by easing side effects, complications and aftereffects of cancer treatment. Palliative care covers controlling cancer pains and making the last moment of life as peaceful as possible. The bereaved care is given when necessary after the passing of a patient.

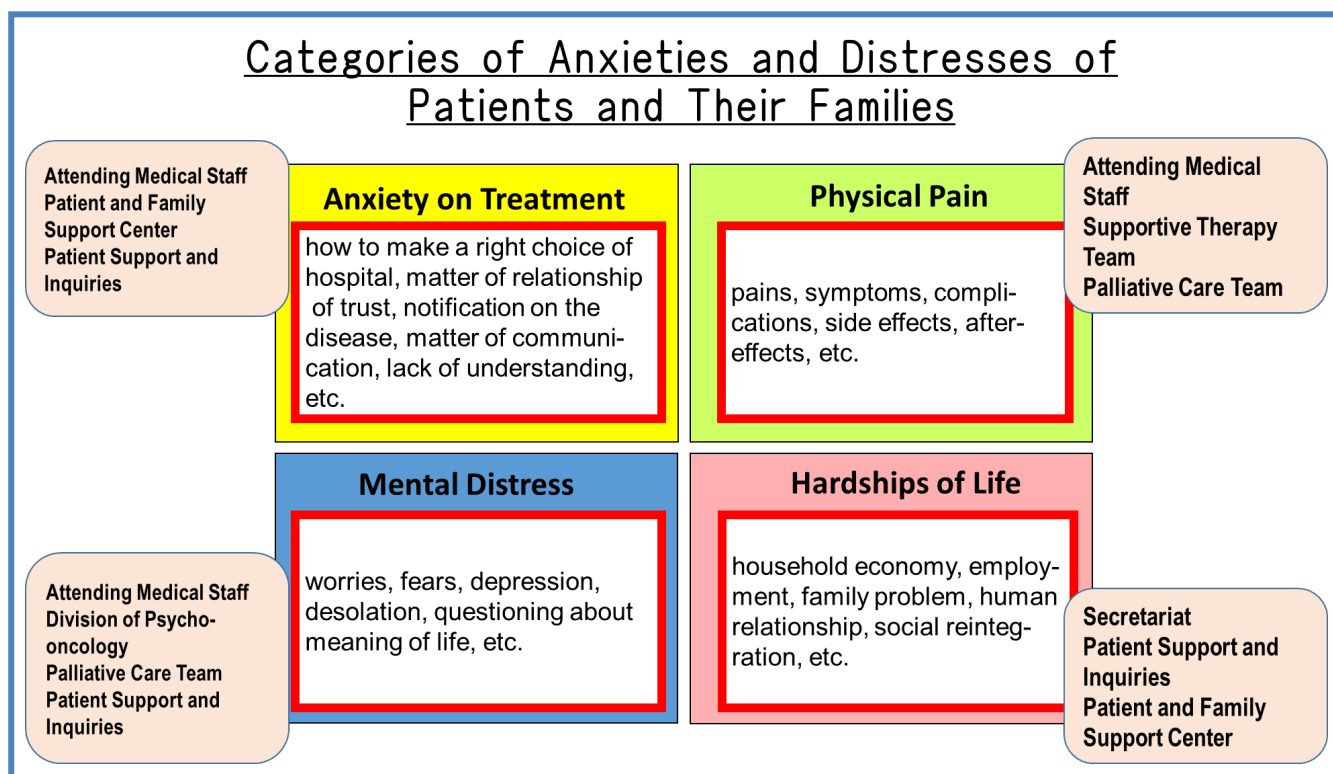
For cancer medicine, basically the evidence-based medicine (EBM), which is to practice medicine based on medical and scientific evidences, is what is given the priority. However, from a certain moment on through the course of cancer treatment, a medical care to focus on conversations with a patient and his/her family and their feelings will be needed. We call it the narrative-based medicine (NBM).



2) What we do to fulfil one of the promises to patients, “We support patients and their families thoroughly.”

Cancer patients and their families often encounter various anxieties and distresses through the course of treatments. At the SCC, we have learned from various surveys and our experiences at the “Patient Support & Inquiries” office to come to categorize the anxieties and distresses into four groups; “anxiety on treatment,” “physical pain,” “mental distress” and “hardships of life.” For each category, there is an eligible department ready to support them without hesitation.

For any anxieties about cancer treatment, you can go to the attending doctor and nurses, the Patient Support and Inquiries and the Patient and Family Support Center. If you are not happy about their supports, there is an office specialized in dealing with criticism. For physical pains, the attending doctors and nurses will basically take care of them, but a team of specialists will join when necessary. For outpatients, the Patient and Family Support Center will help them with pains. For mental distresses, the Division of Psycho-oncology and the psychotherapists will be in charge, in addition to the attending medical staff. For hardships of life, you can go to the administrative staff as well as the certified social workers at the Patient Support and Inquiries.



FACILITY GUIDE & FEATURES

Patient Support & Inquiries

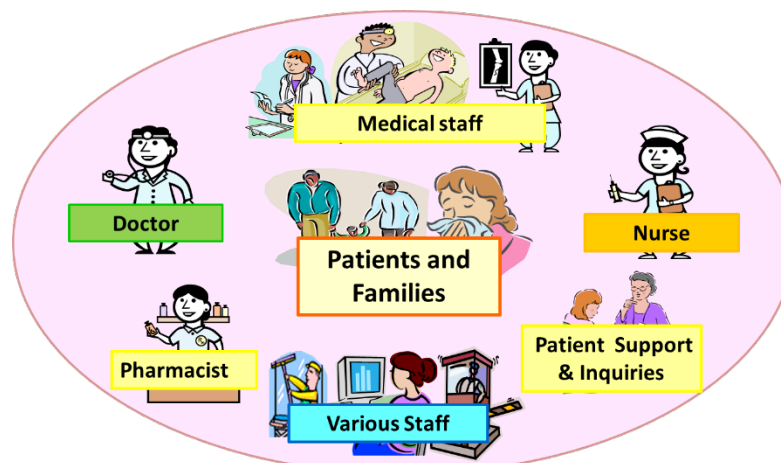


At the Shizuoka Cancer Center, we established the Patient Support & Inquiries to respond to the fears and anxieties of patients and their families. Dedicated medical social workers and nurses listen to the patients, think with them, and help resolve their difficulties. Please speak to Patient Support & Inquiries if there is anything unclear about the course of treatment or cancer checkups. Those who cannot speak Japanese are requested to bring their interpreters.

The Shizuoka Cancer Center provides a library for patients, their families and the local people of Shizuoka called the Asunaro Library. Those who are registered at the library can borrow books. Patient ID card will be needed in order to register, and your library card will be issued straight away. It carries about 7,900 books, 1170 videos & DVDs and other audiovisual materials, magazines about cancer and other titles, and 17 newspapers as well.



Multi-disciplinary Team Approach



We provide multidisciplinary medical team care.
The team is comprised of doctors and nurses and other medical professionals.
We provide the best services with each job responsibility.

Proton Beam Therapy

Proton beam therapy is a form of corpuscular radiation therapy in which the diseased area is irradiated with protons (hydrogen atoms having had their electrons removed).

I Appraisals of disease and indications

Patients who can undergo proton therapy are those with cranial (ear or nose cancer), non-small-cell lung cancer, prostate gland cancer or other solid cancers.

The consultant group examines whether there are any indications or not. Prerequisites for treatment are a clinical significance in localized treatment and the fulfilling of certain medical technology conditions. A decision as to whether the case is applicable or not will be made based upon the criteria of each disease and the patient's clinical history.



II Treatment cost

Our proton therapy was officially certified as an advanced treatment by the Ministry of Health, Labor and Welfare of Japan in January 2006.

The basic charge for proton therapy is 2,400,000 yen.

The ceiling cost for proton beam therapy (basic cost plus radiation fee) is 2,800,000 yen.

(Any treatments required other than proton beam therapy will be covered by the Japanese public health insurances.)



Palliative Care Unit

Palliative care improves the quality of life for patients and their families who face the life-threatening disease, by providing pain and symptom relief, spiritual and psychosocial support from diagnosis throughout the course of disease.

The Child Life Specialists provide supports for children whose parents are cancer patients with serious conditions.





We have 50 private patient rooms in Palliative Care Unit including 25 in the annex. They are designed to provide a suitable environment in line with the wishes of families.

The Annex, with wooden floor and walls, has a warm atmosphere, and includes a multi-purpose hall, a Japanese-style room and a garden. Each patient can access to the terrace.

Hospital with Art & Gardens

Surrounded by trees and plants forming a natural garden, we seek to create space where people can relax. Patients can listen to the sound of water trickling down from the little waterfall in the central garden, or the trees rustling in the wind, and can also enjoy sunlight as they stroll around.



Shizuoka Cancer Center Research Institute

In the fall of 2005, a new building of the Research Institute was established adjacent to the Hospital to achieve the Research Institute's three missions: development of new medical technology for cancer treatment, development of new tools to support patients and their families, and promotion of the Mt. Fuji Pharma Valley Project. The Pharma Valley Center, which is affiliated with the Shizuoka Organization for Creation of Industries, also sets up in the Research Institute to play an important role for the project.



All staff members at the Shizuoka Cancer Center, not only those in the Research Institute, actively engage in R&D. The abilities and experiences of the Center's hundreds of healthcare professionals are an important intellectual asset. Patients' comments and requests are actively incorporated, and ethical standards are strictly maintained.

CLINICAL PROFILE 1

	FY2019	FY2020	FY2021	FY2022	FY2023
Outpatient Hospital Visits	331,011	327,780	338,426	347,641	332,010
New Patients	7,517	7,010	8,044	8,299	7,323
Cancer Registries	6,872	6,537	6,820	6,781	-
Admissions	15,202	15,105	15,536	15,542	15,350
Rate of unit operation	83.2%	74.9%	79.2%	81.7%	81.4%
Average Length of Stay	12.3	11.1	11.5	11.8	11.9
Patient support & Inquiries	13,502	12,510	13,584	14,263	12,653
Therapy					
Operation(Number of Patients)	4,786	4,595	4,690	4,458	4,492
general	2,229	2,208	2,378	2,222	2,323
general + epidural	1,531	1,429	1,387	1,350	1,273
	524	482	476	465	466
spinal	367	356	339	335	311
epidural	98	81	75	51	82
others	51	39	35	35	37
Chemotherapy (※Actual Number of Patients)	3,851	4,042	4,171	4,216	4,194
Radiotherapy(Linac) ※	1,896	1,792	1,795	1,824	1,742
Brachytherapy ※	58	46	44	50	43
Proton Beam Therapy※	165	156	135	148	226
Brachytherapy (Number of Patients)	191	156	150	169	122
Interventional Radiology	2,093	2,109	1,992	2,119	2,333
Diagnostic					
X-ray	53,033	48,740	49,363	49,901	49,625
CAT scan	37,492	37,002	37,792	38,841	38,910
MRI	11,646	11,383	11,506	11,460	11,400
PET	4,238	4,157	4,249	4,346	4,139
angiography/IVR	1,178	1,723	2,143	2,390	2,636
nuclear medicine	1,136	959	927	853	996
mammography	4,519	4,655	4,802	4,835	5,000
Intraoperative rapid diagnosis	1,516	1,418	1,362	1,288	1,241
Biopsy	12,573	11,866	12,101	12,147	12,260
Pathological diagnosis of surgical materials	4,768	4,541	4,680	4,508	4,698
Autopsy	6	4	3	6	3
Cytodiagnosis	12,619	12,075	11,997	11,808	11,794

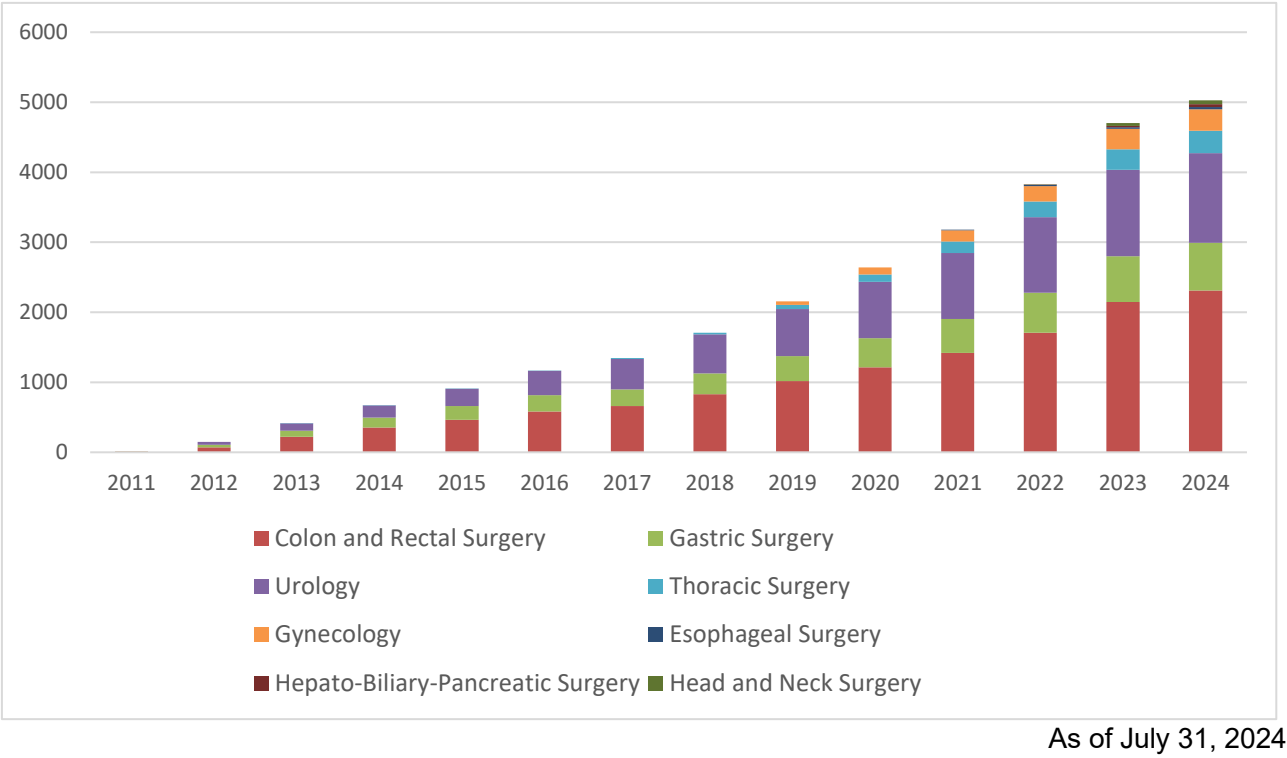
CLINICAL PROFILE 2

●Number of patients who received surgery or treatment in the operating room by each division

	FY2019	FY2020	FY2021	FY2022	FY2023
Neurosurgery	127	151	170	161	116
Head and Neck Surgery	420	421	485	443	512
Thoracic Surgery	466	437	427	426	388
Esophageal Surgery	104	74	71	63	36
Gastric Surgery	383	323	315	323	299
Colon and Rectal Surgery	725	645	708	659	678
Hepato-Biliary-Pancreatic Surgery	380	414	416	399	400
Breast Surgery	435	438	437	361	388
Gynecology	437	415	434	351	419
Urology	544	581	552	565	574
Ophthalmology	71	49	56	64	36
Dermatology	192	190	184	220	224
Plastic and Reconstructive Surgery	140	116	113	140	117
Orthopedic Oncology	271	239	266	264	288
Oral Surgery	24	29	29	12	7
Stem Cell Transplantation	10	14	4	6	7
Pediatrics	1	0	0	0	0
Palliative Care Medicine	0	0	0	0	0
Anesthesiology	0	0	0	0	0
Endoscopy and Gastrointestinal Oncology	0	3	0	1	3
Diagnostic Radiology	0	0	0	0	0
Radiation & Proton Therapy Center	56	56	23	0	0
Breast Cancer Multidisciplinary Treatment	0	0	0	0	0
Total	4,786	4,595	4,690	4,458	4,492

CLINICAL PROFILE 3

●The cumulative total numbers of surgical procedures with the robotic surgical system “da Vinci” and “hinotori”.



Topics

(The dates mentioned in the following topics stand for when the press releases were originally issued. Please note that the names and the titles included in the articles are of those times.)

Tateaki Naito, M.D., Ph.D. takes up a post as a board member for the Multinational Association of Supportive Care in Cancer (MASCC) (July, 2024)

Dr. Tateaki Naito, the Manager of the Supportive Care Center at the Shizuoka Cancer Center, assumed the position of a board member for the Multinational Association of Supportive Care in Cancer (MASCC) at the annual meeting for 2024 held in Lille, France, in June. At this annual meeting, 13 board members were newly appointed, among whom 2 Japanese doctors (including Dr. Naito) represent Asia. The MASCC was established in 1990 aiming at continuously improving supportive care in cancer from the diagnosis to the terminal phase of the disease. It is an international academic organization consisting of more than 2,100 members from about 70 countries. Dr. Naito was also appointed as a board member for the Japanese Association of Supportive Care in Cancer (JASCC) in May, 2024, and accepted another responsibility as a chairman, the International Committee, at the same time. He is now working hard to promote alignments between the JASCC and the MASCC, and to enhance cooperation involving the Korean Academy for Supportive Care in Cancer (KASCC), which was established in 2024, among these organizations.

Shizuoka Cancer Center Receives the Best Quality Leadership Award (July, 2024)

The European Society for Quality Research (ESQR) Honored the Shizuoka Cancer Center with the Best Quality Leadership Award 2024. This award is for a selected organization or person to recognize the exceptional leadership in quality management initiatives. Dr. Katsuhiko Uesaka, the president of the Shizuoka Cancer Center, participated in the award presentation ceremony that took place in Brussels, Belgium, on June 30, 2024 to receive the trophy together with the award certificate.

The ESQR is a Swiss-based organization which promotes quality awareness, recognizes the best practices, excellence, leadership, technological innovation, quality achievements in organizations worldwide, and publicizes these organizations' successful performance strategies. Although their judging system for winner selection is not open, it is understood that it is based on their own public opinion poll, the consumer opinion survey, and the recommendations by the past winners.

Ken Yamaguchi, M.D., Ph.D., the President Emeritus of the Shizuoka Cancer Center, assumes a post of Chairman of the Board of Directors for the Princess Takamatsu Cancer Research Fund (July, 2024)

Dr. Ken Yamaguchi, the President Emeritus of the Shizuoka Cancer Center assumed the position of the 9th Chairman of the Board of Directors for the Princess Takamatsu Cancer Research Fund on June 21, 2024. Her Imperial Highness the Princess Takamatsu was a grandchild of the Prince Yoshinobu Tokugawa, the 15th shogun of the Tokugawa shogunate, who lived in Shizuoka for decades after the retirement. That may have made Her Imperial Highness feel close to Shizuoka. The Princess Takamatsu Cancer Research Fund was established by Her Imperial Highness jointly with the alumni from the Gakushuin Girls' School in 1968, aiming at supporting cancer researches in Japan, and is the only one public interest incorporated foundation bearing the name of the Imperial Family. His Imperial Highness the Prince Hitachi is currently serving as the president of the organization. For more than 50 years, the Fund has been actively supporting Japanese cancer researches including hosting international symposia, presenting academic awards and prizes, and granting research subsidies, which has made it the most internationally-acknowledged cancer research support organization in Japan. The major reasons for Dr. Yamaguchi's appointment may have included his long-time contributions to cancer medicine, as well as his devoted medical services as the healthcare supervisor for Their Imperial Highnesses the Prince and the Princess Takamatsu since 1987, which later led him to taking up an appointment by the Imperial Household Agency to serve as the healthcare practitioner for the Imperial Family, while running the Shizuoka Cancer Center at the same time.

Renovation Done in the Pediatrics and AYA Ward: "The AYA Room Circle" Completed (March, 2024)

Part of the day room located in between the east and the west wings on the 6th floor at the Shizuoka Cancer Center Hospital was renovated for the pediatrics and AYA patients. The new room is designed to let them forget about the treatment temporarily and focus on studying or working, or just be relaxed, even in the hospital environment. The renovated room is named "The AYA Room Circle," which is based on the children's wishes to be connected with various people, get motivated for future study, and make friends with others even while living in the hospital. The room with a floor space of 8.38m² has the sound shielding walls papered with flower motifs, and the big window commanding a great view of Suruga Bay. It is equipped with a computer which enables the patients to connect to the outer world online. Also equipped with is a height-adjustable desk for a wheel-chaired patient, and a clear acrylic board. The renovation as well as all these new equipment are funded by the donation from a woman in her 70s living in the eastern Shizuoka.

The SCC Launches the Division of Early Clinical Development (March, 2024)

The newly established clinical division called “the Division of Early Clinical Development” has just been launched (April 1, 2024) at the Shizuoka Cancer Center. This is a cross-organ division involving multiple clinical divisions for developing early phase cancer treatments.

Early phase development of a new drug including anti-cancer drugs (i.e., Phase I Clinical Trial) is critical as the initial step in the development and has been carried out only at the facilities where specialized knowledge and experiences can be applied. However, the number of such facilities remains small and insufficient in Japan. The development needs the world-class speed in order to overcome what they call “a drug lag” and provide patients with new drugs having proven efficacies.

Phase I Clinical Trial, which is the very first step of an early clinical development, is carried out by administering a small portion of a drug to start with, and the dose is gradually increased along with the safety confirmation each time. The information including side effects, efficacy, absorption, metabolism, and evacuation is constantly collected before deciding on the most suitable dose. Among the phase I clinical trials, a trial to apply a drug to human for the first time is called the First in Human (FIH) trial. It is done as an “all-comer test,” which involves any types of cancer or organ in most cases, not focusing on a particular type of either. Therefore, it needs to be subject to a variety of malignancy types including cancer in the head and neck region, lung cancer, breast cancer, gastrointestinal cancer, hepato-biliary-pancreatic cancer, gynecologic cancer, urinary cancer, and sarcoma. Naturally it requires a systematic management in a cross-organ manner, not completing it with a management within a certain clinical division. Also required is a performance by a multidisciplinary team consisting of doctors from each clinical division, nurses, clinical research coordinator (CRC), pharmacists, and lab technicians. They are supposed to share the information constantly to provide a treatment. This new division is to integrate all the cross-organ early phase treatments, thanks to the participations by 14 doctors from 10 clinical divisions including Thoracic Oncology, Gastrointestinal Oncology, Gynecology, Dermatology, etc., and CRC. In addition, the staff from the Department of Pharmacy, Division of Pathology, Division of Diagnostic Radiology, and Department of Nursing are also participating and contributing. Other than these participating members, several certified nurses for drug treatment will be stationed at a ward allocated for the trials. Meanwhile, the phase I clinical trials for specific cancer types will continue to be carried out at each relevant clinical division just as it has been done before.

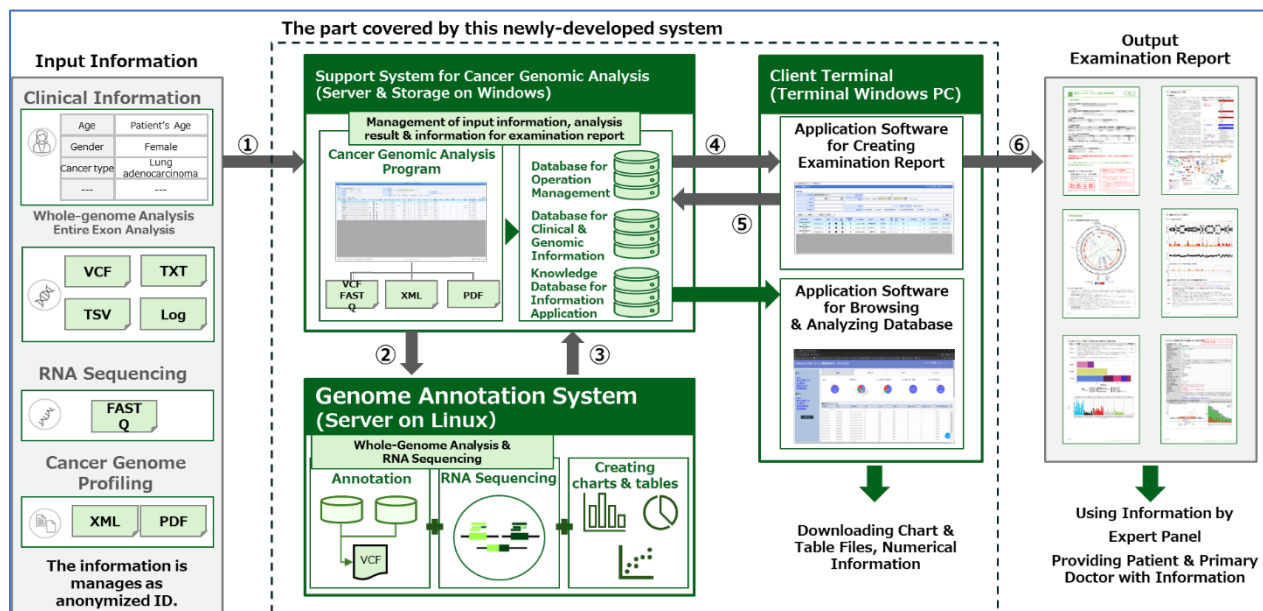
Japan’s First “Integrated Management System for Cancer Genomic Medicine” Built Out, Accommodating the Genomic Test Using Whole Genome Analysis in Combination with RNA Sequencing (March, 2024)

The Shizuoka Cancer Center has completed building out the “Integrated Management System for Cancer

Genomic Medicine” (the support system for inspection work and report writing for cancer genomic test). After the test trials carried out from April, the full-scale operation of the system is scheduled to launch in July, 2024. The system is supposed to secure the quantity and quality of the information required for implementing the clinical inspection for whole genome analysis. With this system, time required for the test result assessment will be greatly saved.

This system has been developed by Dr. Masakuni Serizawa, the researcher at the Drug Discovery and Development Division, the Shizuoka Cancer Center Research Institute, in collaboration with Fujitsu Japan, Ltd. It enables the result integration of whole genome analysis of cancer patients and RNA sequencing, which is effective in narrowing the critical genes, and the semi-automatic report writing. The report written in this system comprises as much information as possible with simple and comprehensive description of it, all of which is based on the prevision that it will be useful for the years to come when the patient has a recurrence. In addition, through using enormous genomic information accumulated in the database of the system, it will make it possible to utilize it for developing a new treatment method. Dr. Serizawa and his collaborators are aiming at taking the system one step further toward a more user-friendly one than what it is now, utilizing generative AI (artificial intelligence) in the future.

The development of this system has been supported by the Japan Agency for Medical Research and Development (AMED) as one of the national research projects for clinical implementation of whole-genome analysis in which the Shizuoka Cancer Center has participated since 2021.



The SCC Launches on the World's First Clinical Study for Autonomous Surgery with "hinotori™," a Surgical Robot Made in Japan (December, 2023)

As the number of surgeries assisted by the surgical robot systems has been increasing, the SCC entered into a contract for a joint comprehensive study with Medicaoid Corporation (production & sales) and Sysmex Corporation (sole distribution). This enables several clinical divisions including Div.

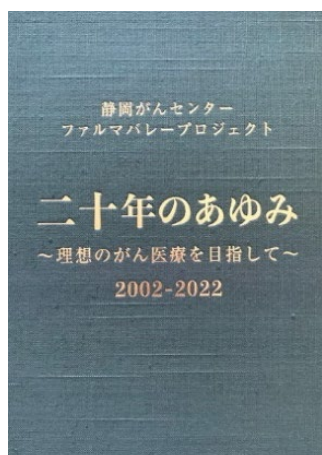


of Colon and Rectal Surgery to launch on the clinical study developing practical functions of the surgical robot “hinotori™” They are studying to see whether it will be practically possible to make a surgery autonomous (i.e., sectionally automated) by analyzing the image data obtained from endoscopy and the operational log of the robot during the surgeries. Study on the possibility of making a surgery autonomous with “hinotori™” has not been done before, which makes this clinical study the world’s first one. It is highly expected that once the movements of “hinotori™” are safely fixed through this clinical study, a big step forward will be made toward a practical use of the surgical robot system for supporting surgeons during surgeries and making a robotic telesurgery possible in the future.

Window for Consultation on “Appearance Care” Opens (December, 2023)

“Changes in appearance” due to the progression of cancer or cancer treatments can be quite distressing psychologically and socially for cancer patients, as they often feel uncomfortable at work or school worrying about how they look in the eyes of others and not being able to talk to them just as before. Supporting patients for their “changes in appearance” has been already handled as a part of the supportive therapy (i.e., therapy for side effect from a cancer treatment) at various clinical sites including the outpatient clinics, the Chemotherapy/Supportive Therapy Center, and the Radiation and Proton Therapy Center. They have been making efforts to support the patients to retain their own selves and live their lives connecting with the society, but the need for a department specializing in “appearance care” was increasing. This time, a consultation window for it has opened at the Disease Management Center, which is expected to be even more helpful for the patients.

Released the 20th Anniversary Commemorative Book (March, 2023)

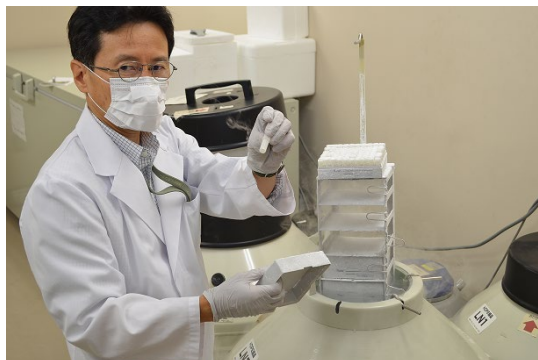


As a part of celebration for the 20th anniversary of the Shizuoka Cancer Center, “the Commemorative Book for the 20th Anniversary of the Shizuoka Cancer Center and the Pharma Valley Project: The Challenge Toward Ideal Medicine” (in Japanese only) was published at the end of FY2022. This comprises the history of the SCC and the PVP from the preparatory stage to today. In 1994, only 3 people including officers of the Shizuoka prefectural government started the project from scratch, and now the SCC has grown to be one of the 3 major cancer hospitals in Japan. The book contains articles written by Dr. Ken Yamaguchi, the President (currently President Emeritus) of the SCC who has been leading the SCC and the PVP since the very beginning, as well as 156 staff including doctors, nurses, other healthcare professionals, researchers, officers from the prefectural government and others, many photos, the history chart, and

valuable documents. It took 6 months for the preparation. The book is in size A4, color, and consisting of 384 pages.

The SCC Participates in the Research Project for Whole Genome Analysis by the Japan Agency for Medical Research and Development (AMED); Knowledge Acquired from the Project HOPE Makes a Major Contribution to Japan's "Action Plan for Whole Genome Analysis" (October, 2021)

Over the past 8 years, about 9,000 cancer cases have been analyzed for entire exon in the Project HOPE, which has led to the development of the Pharma Valley Project as well as the SRL-Shizuoka Cancer Center Collaborative Research Organization. In addition, it has contributed to building out the cancer genome database for the Japanese, and the development of the "Fuji-no-kuni HOPE Onco-Panel[®]." As such, the clinical application of the research results for each patient is now getting very close. Based on the whole accumulation of knowledge and insights from the Project HOPE for years, the major 3



cancer centers in Japan, namely the National Cancer Center Hospital, the Cancer Institute Hospital and the Shizuoka Cancer Center have decided to participate in the research project for the whole genome analysis, which is a national project applied by the Japan Agency for Medical Research and Development (AMED). This participation means nothing other than the contribution to Japan's "Action Plan for Whole Genome Analysis." This research project is to analyze entire exon of cancer patients and to give them back the research results for utilizing them for their cancer treatments. This 2-year-long research project is supposed to extract agendas before the actual implementation for the health insurance-covered medicine. Although it is assumed that only 1 % of all the patients participating in this research project have gene mutations positive for hereditary cancers, it will be beneficial for the patients and their families to take the genomic tests as they can be effective for early detection and treatments.

Working Conditions for "Chief Resident" (Specialist Trainee) Improved for Enhancing Doctor Recruitment and Continuously Providing Highly Specialized Medicine (September, 2021)

The training course for a doctor at the SCC consists of the following 2 programs: 1. the 3-year resident course for learning comprehensive cancer medicine, and 2. the 2-year chief-resident course for learning advanced and highly specialized cancer medicine at a specific clinical division. Chief resident is a trainee in accordance with the new specialist system established in 2018, with which the trainees have tended to choose the hospitals in big cities for their trainings and their number has been decreasing recently. On the other hand, it has been a critical issue for the SCC to secure enough number of chief residents for fostering the bearers of the hospital's future, due to the need for continuously providing advanced and highly specialized medicine for ever-growing cancer patients. Therefore, the SCC have established new regulations for chief residents to improve their working conditions to let them go parallel with full-time doctors, although they are on the 2-year fixed-term employment. The improvement includes the yearly salary raise (around 8 or 900,000 yen) and the provisions of allowance for dependent and housing allowance. It is expected to secure a stable number of doctors, which contributes to the cancer control measures of Shizuoka prefecture with the SCC as a core hospital in terms of maintaining the quality of medicine as a leading cancer hospital in Japan and strengthening the system for cancer genomic medicine.

Extending the Use of Surgical Robot Systems for Less Invasive Surgeries, from 2 to 3 Installations (the 1st in Shizuoka Pref.) for Additional Clinical Divisions (April, 2021)

The SCC had the da Vinci surgical robot system installed in December, 2011, as one of the first hospitals in Japan, and has been promoting the use of it for less invasiveness, safety, and performance for functional preservation and complete cure. So far 2,600 surgeries, which counts one of the biggest numbers in Japan, have been performed with the system at the Divisions of Colon and Rectal Surgery, Gastric Surgery, Thoracic Surgery, Urology, and Gynecology. In addition, the SCC has been designated as one of a few training institutions for doctors who wish to observe colon and rectal surgeries or gastric surgeries performed on the system. As it is

expected to have the increase of patients wishing to have their surgeries done with the system in the future, the SCC has extended the application of it to Division of Esophageal Surgery, and installed another one to make it 3 which has made the SCC the first hospital having that many systems in Shizuoka prefecture. The surgical robot system has some issues to be cleared, including the high cost and the difficulty in training the surgeons. Yet, the merit is tremendous as it can overcome the deficiency of laparoscopic or thoracoscopic surgeries. It is becoming rapidly popular, because the procedure with the system is safer, more advanced, and much less invasive than the conventional ones.



The Database of the Japanese Version of the Cancer Genome Atlas (JCGA), the Achievement of the “Project HOPE,” Is Made Public (March, 2021)

At the SCC, the research named the “Project HOPE” has been conducted since 2014. It is to analyze the tumor cells resected at the surgeries and acquire genomic information. The purposes of the analyses include finding out gene mutations causing cancers,

and learning more about what cancer is so that the information can be used for cancer treatments. So far, genomic information from various types of cancers has been collected from about 8,000 cases, which have been analyzed for entire exon. With the researches in this field conducted over many years, it is now made clear that there is a difference in cancer genomes between the westerners and the Japanese even for the same cancer type, and therefore, it is essential to use the genomic information of the Japanese for evaluating their cancer gene mutations. In these circumstances, the “Japanese Cancer Genome Atlas (JCGA),” the cross-cancer-type database, has been built out based on the entire exon analysis results from 5,000 cases with 134 types of cancer. This is supposed to be used for evaluating gene mutations detected at the onco-panel tests, as well as for the expert panel involving the specialist in cancer genomic medicine, which is being established at many medical institutions in Japan. In addition, as the database is published in Japanese, it is expected that the use of it will help the public have better understanding about cancer.



Looking Ahead to the Era with a 100-Year-Long Lifetime: The Pharma Valley Project Comes Up with an Idea for a Dream Housing for the Elderly (February, 2021)

The Pharma Valley Center opens a model room to show their conceptual approach to an idealistic housing for the elderly focused on a theme “the 3-Step-Access Home for an Autonomous Life.”

The Pharma Valley Center is to open their conceptual model room as their first step for projecting “the housing for the elderly in the era with a 100-year-long lifetime” on the 1st floor of their headquarters on March 5, 2021. The model room is designed with a theme “the 3-step-Access Home



for an Autonomous Life,” and is scheduled to be open to introduce the basic concepts and the design details that day, when the “Shizuoka Cancer Congress 2020” is opening. It is going to be open for public including all the citizens of Shizuoka prefecture as well as the professionals in health care, caregiving to the elderly and welfare, the public administrative officials, the industries, the researchers and the banking institutions. The purpose for opening it for public is based on their wish to invite all the people to raise better ideas for building ideal homes for the elderly preparing for the super-aging society.

The Linac Radiation System Specialized for Intensity-Modulated Radiation Therapy (IMRT) Equipped with Motion Tracking Functions Installed as the First One in Shizuoka (November, 2020)



Radiation therapy is one of the essential cancer treatments, along with surgery and chemotherapy, called “a localized treatment provided without excision.” The number of patients who are provided with this therapy has been increasing, as it is suitable for those who can’t take surgeries and for aged patients who can’t take invasive treatments. At the Radiation and Proton Therapy Center, optimal therapy is provided per patient selected from linac radiation (X-ray), proton beam, and brachytherapy for the features of each system with much consideration taken for quality and size of the tumor as well as possible impact on

surrounding healthy tissues. For the increasing number of cancer patients and the need to update the systems, a treatment room allocated for linac radiation has been newly built, and a brand-new system specialized for intensity-modulated radiation therapy (IMRT) has been installed in there. With this new one, altogether 4 linac radiation systems are now working all the time. Radiation therapy has progressed remarkably these past few years with various new technologies developed focusing on the ideal to irradiate on tumor only. The newly-installed system is a model which can track slight motions of a tumor. This enables a more effective radiation treatment than ever with lowered risk of exposure in normal tissues.

Educational Training Course for Certified Nurse (B Course) Incorporating Training for Specific Interventions Opens (December, 2019)

Since 2009, the SCC has offered the educational training courses for certified nurse in 5 categories (skin and stoma care, palliative care, nursing for cancer chemotherapy, nursing for cancer radiotherapy, nursing for breast cancer) required for practical nursing for cancer patients, which has made the SCC as the first hospital to do so in Japan. Lately Japan has come to the era with high mortality due to the increasing aged population, and the role of a nurse has significantly changed accordingly. A nurse is required to make a swift decision on patient's clinical condition and to handle adequately depending on patient's symptoms under the



comprehensive directions given by a physician. In these circumstances, the SCC offering the educational training course for certified nurse has been designated (by the Ministry of Health, Labour and Welfare) as a training institution and approved so by the Japanese Nursing Association to open the educational training course for certified nurse (B course) incorporating the training for nurses performing specific interventions from FY2020. In addition to the accumulated knowledge and nursing skills acquired through the training course for certified nurse in each category, it is expected to foster the nurses who can perform greatly in various clinical fronts supported by powerful partnerships with the physicians. As the educational training course offered at the SCC includes the training for specific interventions, a nurse can complete it a month and half earlier compared to when he/she takes the training course for certified nurse and another for specific interventions separately. In addition, as the nurse has learning opportunities across the 5 different fields, it will make the best experience for working in a multidisciplinary medical team.

The SCC enters into the partnership with the Jikei University School of Medicine, looking ahead to the further cooperation for the graduate school (July, 2019)

On July 2, 2019, the SCC and the Department of Nursing, the Jikei Graduate School of Medicine, signed an agreement for promoting cooperation in nursing education and research, as well as education and research in medicine and public health. With the banner saying “we support patients and their families thoroughly” as one of the principles, the SCC has provided quality nursing, and made efforts in fostering human resources who could lead the multidisciplinary teams. The efforts stand out in nursing education

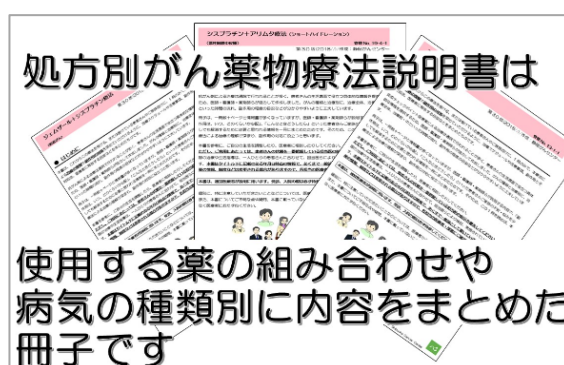


especially, proven by a fact that the certified nursing education courses started in the hospital for training nurses with specific skills in 5 categories required for nursing cancer patients. So far 475 nurses have completed the courses and gone to work at the hospitals across the country as certified nurses until the end of FY2018. At the SCC, 14 specialist nurses in cancer nursing, and 45 certified nurses are already working, which proves the effort in supporting the patients and their families. In order to sophisticate the systems to evaluate the quality of care and nursing and to make improvements as the whole team, the

SCC has started on training nurses specializing in cancer care in terms of not just clinical practice but also researches and education. At the Jikei University Graduate School of Medicine, Master's Program in the Department of Nursing started in 1997 and even Doctor's Program opened in the current FY. On the one hand, 18 students who completed the Master's program wishing to become specialist nurses in cancer nursing came to the SCC for their clinical training. And on the other hand, the SCC have sent the lecturers in consultation methodology, and in cancer specialist nurse programs to the Jikei University School of Medicine. With this agreement, the SCC and the Jikei University School of Medicine are strengthening the cooperative relationship in fostering cancer specialist nurses through the education at the graduate school.

“Information Prescription per Regimen for Cancer Chemotherapy” published for patient's better understanding on cancer (February, 2019)

The inquiries received at the “Patient Support & Inquiries” (the office for supporting patients) as well as the results from the nation-wide survey with 12,000 people have made it clear that the cancer survivors had gone through various distresses and strains. Among them, the distresses associated with cancer drug treatments are getting prominent lately. The reasons include; 1. About 70 or 80 percent of cancer chemotherapy is provided at the outpatient clinic, 2. such newly-developed drugs as molecular target drugs and

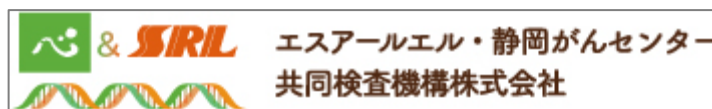


immune checkpoint inhibitors are being used but the patients don't understand what they are, and 3. chemotherapy is provided more often than before, both preoperatively and postoperatively. For example, comparing the results from the nation-wide surveys in 2003 and 2013, the percentage for the distresses and the strains on cancer drug treatments has significantly increased, which proves the fact that these issues are impacting on their lives. Currently, 70 percent of chemotherapy (anti-cancer drug treatment) is provided for outpatients at the SCC, and the percentage is increasing. The patients will have to deal with their own deconditioning from the therapy without doctors' help at home, so that they need to have good understanding for side effects in advance about how bad they can be and what to do with them. The information materials on chemotherapy are always there at a medical institution but they are made for doctors, nurses, and pharmacists, which are often too difficult for patients. Therefore, the descriptions have been improved and more compiled for each regimen in the newly-published “Information Prescription per Regimen for Cancer Chemotherapy.” The contents are supposed to be easy to understand for any person, not confined to a certain profession. This is part of the efforts to unify the critical information for patients as “a prescription,” compiling information on 70 regimens (i.e., combinations of anti-cancer drugs) in 91 booklets. The information can be shared by all the medical staff, as well as the patients, who can be benefited to have better understandings on the anti-cancer drug treatments that they are receiving by simply reading them.

Joint venture company established by the Shizuoka Cancer Center and SRL for the researches on cancer genome sequence (October, 2018)

The SCC and SRL, Inc. have been collaborating in the clinical joint research named the “Project HOPE (High-tech Omics-based Patient Evaluation)” since 2014. This is to evaluate the freshly-resected tumor

tissues and blood samples obtained at the surgeries for entire exons and entire gene expressions, and to compare them with the clinical data for building out the database. So far, about the data collected have accumulated as 5,000 cases, which is one of the largest cancer multi-omics clinical databases as a single medical institution in Japan. In order to leverage this database and the know-hows acquired through the research, the two parties have reached an agreement to establish a joint venture company. At the new company, highly-qualified laboratory testing services (including original cancer gene panel testing, gene polymorphism panel testing for drug-metabolizing enzyme, hereditary cancer gene panel testing, etc.) meeting the ISO15189 and CAP/CLIA standards are provided with the biotic samples including applicable pathological specimens commissioned by medical institutions. The services are all for promoting cancer genome medicine for the Japanese people. In addition to the gene panel testing, along with continuing the Project HOPE, some new technology, which is supposed to be clinically applied in the future, will be developed at this company under the strict quality assurance and accuracy control required for clinical test and gene testing. In order to drive this business forward, the SCC offers the clinical database with 5,000 cases and ample clinical experiences, while highly-skilled testing technologies and a nationwide network offered by SRL are fully incorporated. The investment ratio for the SCC is 22.2% (100,000,000 yen) and SRL holds 77.8% (350,000,000 yen) of shares. This is a unique business form, being the first case as a joint venture company between a public hospital and a private company, and it's also rare in Japan.



“The Patient and Family Support Center” expands with more functions for supporting patients (June, 2017)



When you wish to retain your own lifestyle even after being diagnosed with cancer, you will need to understand very well beforehand about what will happen to you in the course of cancer therapy finance-wise, daily-life-wise and of course, health-wise including side effects from cancer treatments.

At the SCC, “the Patient and Family Support Center” opened in April, 2012, which has led to the openings of other patient-support-oriented facilities including “the Patient Support & Inquiries,” “the Chemotherapy Center,” “the Support Therapy Center” and “the Palliative Care Center.” Now, in order to support the cancer patients even further, it has been expanded its functions for providing them with helpful information and emotional supports. This is the closest to what the SCC originally wished for the ideal “Patient and Family Support Center” when it first started.

Information which cancer patients would like to have can be obtained quite easily via AV and internet on the computers installed there. Additional private consultation rooms, as well as an expanded space in the waiting room which could be accommodated for a study session or a meeting with medical staff from the community, have been built to accomplish the ideal place and system for supporting patients.

At the newly developed “Patient and Family Support Center,” one of the major purports of “the 3rd Term Cancer Control Programs,” “Living with Cancer” is being aimed and pursued. In order to make it happen, we try to face off against the 4 basic burdens which cancer patients would bear, “anxiety about cancer treatment,” “physical distress,” “mental distress” and “strain on life.” This is the core facility for supporting patients and their families who try to live with the disease.

Division of Clinical Cancer Genetics Opens (December, 2016)

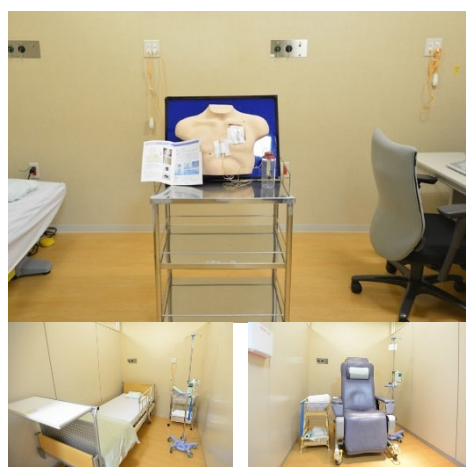
At the SCC, in response to the coming age of next-generation genomic medicine, gene information has been collected from all the cancer patients who have taken surgeries there and the research studies have been conducted for clinical application of the information since January, 2014. The efforts were proven when the study team announced for the first time in Japan that about 1% of the whole cancer patients had genetic mutations for hereditary tumors. The announcement also proved the immediate needs for medical care for hereditary tumors. Moreover, it has been proved that learning about hereditary tumors would be quite useful for cancer prevention and early detection, and as a result, would influence on the choices of treatment and care methods. Therefore, at the SCC, clinical genetic specialists and certified genetic counselors have been providing medical care for outpatients since December, 2011. It has brought about the opening of the “Division of Clinical Cancer Genetics,” where not only the patients and their families at the SCC but everyone who wishes to take a counseling on cancer heredities or a genetic test can come in for the care. At this Division, cancer risks for the whole family including the visiting patient will be assessed, and accurate knowledge and advices for various fields will be given toward practicing “predictive medicine,” early detection and optimal treatment.

Japan’s First “Supportive Therapy Center” Opens (September, 2016)

At the SCC, supportive therapy, which is to give preventive care and treatment for intolerable symptoms of cancer and side effects from treatment, has been practiced as one of the three therapeutic principles in addition to anti-cancer therapy and palliative care since when it started in 2002. What is offered at the “Supportive Therapy Center” includes collaborative care and guidance with the Divisions of Rehabilitation Medicine and Oral Surgery, producing informative brochures and videos on what patients need to know before starting cancer treatments, and placing them where patients can easily access to.



In order to practice “supportive therapy” in more patient-friendly manners, a part of the Chemotherapy Center was remodeled and the office previously called the treatment center was rebadged as the “Supportive Therapy Center” on August 29, 2016. Since then, about 65 patients a day have come to visit the center. The Supportive Therapy Center integrates all of the supportive therapies practiced at various clinical departments in the SCC, and also supports patients taking cancer treatments while living at their homes, as the activities of the center are basically focused on alleviating “physical pains” to support living with the disease.



The newly-remodeled center is designed to protect patients’ privacies with 14 beds in private treatment rooms and 2 beds in the private consultation rooms. Full-time nurses and well-trained certified nurses are there to help patients, and collaborative supports with the Patient and Family Support Center, oncology specialists and nurses, dieticians, pharmacists, the rehabilitation team and the oral care team are also available there. When inquiries about how to handle medical equipment or how to control eating, clothing and housing during cancer therapies, the guidance

and directions will be provided not only for patients and their families but also for home-visiting nurses.

Japan's First "AYA Generation Ward" Opens (January, 2016)

Young patients aged from mid-teens to early thirties are called the "AYA Generation¹." Cancer patients of this generation are usually taken care of at the clinical departments for pediatric cancer or for adult-typed cancer at most medical institutions in Japan. As they do not really belong to either, voices for improvements have been raised to prepare medical facilities where generations from childhood to AYA or from AYA to adulthood can take continuous cancer treatments. At the SCC, as a response to those voices, the "AYA Generation Ward" for cancer patients of this generation opened in June, 2015.

Cancer patients in the AYA generation are featured as follows: 1. Pediatric type of cancer and adult type are detected as mixed in the patients of this generation, as pediatric type is sometimes detected among the AYA generation, while adult type can also arise among them. Their primary cancers can often be detected in multiple organs. 2. The improvement index of the five-year survival rate (median annual improvement index of the five-year survival rate from 1975 to 1997), which is taken as a reference to prove advancement of cancer medicine, is extremely low for the AYA generation when compared with other generations². 3. Public subsidy system for medical services for young generations, e.g. pediatric chronic specific disease subsidy system, doesn't apply for patients aged older than 20, while public long-term care insurance doesn't apply for patients aged younger than 40, either. It means patients in the AYA generation don't have much social aid when it comes to long-term medical care.

Moreover, the number of cancer patients in the AYA generation is comparatively small, which results in a fact that cancer treatments to meet the above-mentioned features haven't been developed yet and they are not integrated well enough. Therefore, with the "AYA Generation Ward" prepared for the specific needs of the patients in this generation, the optimal cancer treatment and care will be offered until the day when they leave the ward and get back to their own lives, as the goal of the ward remains as offering the "best-suited medical care for the AYA generation."

1. AYA generation: Adolescent and Young Adult. The definition of the word varies, but in most cases, it covers people from 15 to 29 years old.
2. Average Annual Percent Change (AAPC) in 5-year Relative Survival for All Invasive Cancer, SEER 1975-1997: *Cancer Epidemiology in Older Adolescents and Young Adults 15 to 29 Years of Age*, 13, Figure 1.28.

The Radiotherapy Wing Completes (June, 2015)

As the number of cancer patients taking radiotherapy has kept on increasing at the SCC, a new Radiotherapy Wing has been built adjoining the Proton Therapy Facility. For this newly-built facility, the brand-new cutting-edged radiotherapy unit has been installed in addition to the existing three, which makes the four-unit system going into full-scale operation in the near future.

Currently, about 130 patients a day in average (including 1,653 newly-admitted patients for 2016 based on the annual survey) take radiotherapy (linac) at the SCC. The figure is one of the biggest in Japan among all the medical institutions equipped with radiotherapy facilities. Radiotherapy is a lower-impact cancer treatment than surgery or chemotherapy, either of which gives a patient rather a heavy physical burden. Therefore, radiotherapy can be a desirable cancer treatment for the aged patients.

At the SCC, the Division of Radiation Oncology, where linac radiation had been handled, and the Division of Proton Therapy had been two separate clinical divisions for years, but they merged into a newly-developed clinical division, (tentatively named) “the Radiation and Proton Therapy Center” in November, 2015. At this new division, it is now easier for a patient to make the best-suited choice for his/her symptom between conventional radiotherapy and proton therapy taking advantage of each type than before. Also, now it is possible for a patient to take the “interacted irradiation of radioactive ray and particle beam,” that is, combining both of conventional radiotherapy and proton therapy. This is included in the new types of radiotherapy developed at the new division, and the efforts are constantly made there aiming to become a primary facility for cancer treatment for the aged patients.



The SCC certified as “case observation center for gastric procedure” for the “da Vinci” Robotic Surgical System (June, 2014)

Surgical operations conducted by the “da Vinci” Robotic Surgical System have been conducted since December, 2011, and 490 cases of stomach cancer, cancer of colon and rectum, prostate cancer and mediastinal tumor have been subjected up until June, 2014. In that month, the SCC was certified as “case observation center for gastric procedure,” in addition to the previous certification in the field of colon and rectum cancer, by Intuitive Surgical, Inc., U.S.A. The certification was given for the high evaluation of the well-established



operative procedure at the SCC. It was the very second certification given to a Japanese medical institution.

The prevalence rate of stomach cancer is the biggest one in Japan among all types of cancer for both male and female. Especially early-stage gastric cancer accounts 50% of the whole cancer cases. Surgical operation performed by the da Vinci Robotic Surgical System proves low invasive potential, which is promising for treatment of early-stage gastric cancer because of good prognosis after surgery.

At the SCC, surgical operation by “da Vinci” is conducted for clinical stages IA and IB, which are out of adaptation for ESD(endoscopic submucosal dissection).

- Records of Operations Performed by the da Vinci Robotic Surgical System at the SCC

Clinical Division	Type of Cancer	Method of Operation	FY2011	FY2012	FY2013	FY2014	Total
Colon and Rectal Surgery	Rectal Cancer	Rectal Resection	10	63	149	43	265
Gastric Surgery	Gastric Cancer	Gastric Resection	4	32	50	15	101
Urology	Prostate Cancer	Removal of Prostate	-	41	65	14	120
Thoracic Surgery	Mediastinal Tumor, etc	Removal of Mediastinal Tumor Complete Removal of Thymus Gland	-	-	1	1	2
Grand Total			14	136	265	73	488

※Statistics for the FY2014 stand for the records until June, 2014.

“Content-based Image-retrieval System” developed in collaboration, supporting image analyses by doctors in the fields of liver cancer in addition to lung cancer (April, 2014)

The SCC developed the “Content-based Image-retrieval System” in collaboration with Fujifilm Co. It supports doctors’ image analyses with artificial intelligence. The system was launched onto marketing as “SYNAPSE® Case Match” from Fujifilm Medical Co. Furthermore, in April, 2014, image scanning function for liver cancer was added to the system, which consists of comprehensive data from about 1,000 cases of liver cancer as well as about 300 cases of hepatic tumor mass with confirmed diagnoses.

It quantifies the similarity of various and complicated monochrome images on affected lesions of lung cancer or liver tumor mass, based on how doctors take heed. This is a system to build reliability of diagnosis, as resemble cases can lead to candidate diseases specifically even when doctors have difficulty deciding on diagnoses.

(Salient Features of “Content-based Image-retrieval System”)

- ✧ Resembled cases in lung cancer¹ and liver cancer² can be retrieved in a blink.
- ✧ Comprehensive data provides strong supports for image analyses by doctors.
- ✧ Image-analysis reports can be prepared in easy and efficient ways.
- ✧ It provides educational and self-learning opportunities.

1. lung cancer: isolated shadow only (including benignancy)
2. liver cancer: tumor mass in liver only (including benignancy)

Reference

SYNAPSE® Case Match

<http://www.fujifilm.com/products/medical/synapse/>



The SCC launches the Project HOPE (High-tech Omics-based Patient Evaluation), the cutting-edge genetic research project (January, 2014)

In January, 2014, the SCC launched the Project HOPE (High-tech Omics-based Patient Evaluation), a clinical study aiming at the ideal cancer medicine, which consists of “personalized medicine” and “mibyo medicine.”

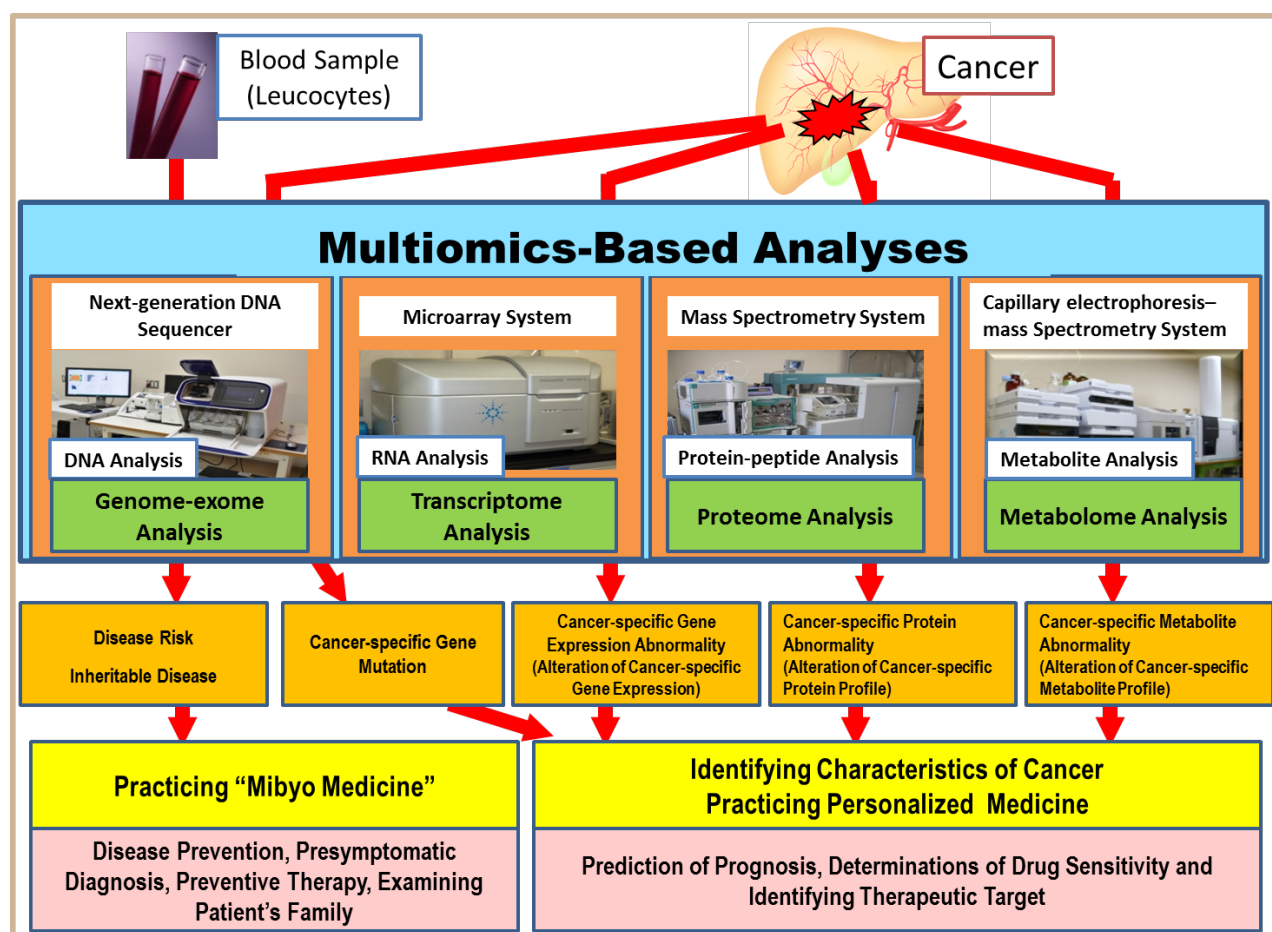
For genetic research of this project, cancer tissues and blood samples are supplied from patients of about 1,000 cases extracted from more than 3,000 cases a year of surgical operations at the SCC. In the field of genomics, genetic changes (qualitative transformation of genes) are evaluated, while changes in genetic expressions (quantitative alteration of genes) are evaluated in the field of RNA analyses (transcriptomics).

The genetic information obtained from this research is being employed for future cancer medicine, which includes the selection of cancer therapy products and the presymptomatic prognosis of hereditary diseases.

The features of this projects are as follows: No restrictions for cancer types. Integrated method of analysis called multiomics is employed for genetic analyses. It is a research within one single site called the SCC equipped with both fields of a research institute and a hospital.

Analytical results are stored for many years to come, so that they will be given back for the benefits of patients in the future, when new method of treatment and analysis technology are developed. That will be when the stored data is taken for reanalysis and is used for personalized medicine and mibyo medicine.

The study is subjected for each individual patient, which is the cutting-edge research concept rare to be found anywhere in the world.



IVR-ADCT (320-rowed CT angiography equipment) installed (August, 2013)

The SCC has installed the world's first IVR¹-ADCT (developed by Toshiba Medical Systems Co.), which integrates 320-rowed ADCT (Area Detector CT) and angiography equipment. The 320-rowed ADCT enables four-dimensional angiographic examination and treatment, as time axis information is added to three-dimensional spatial information gained by conventional high-speed CT systems.

1. IVR: a method of treatment leaving the least injury by injecting a fine tube or needle called catheter, while constantly observing X-rayed, angiographic, ultrasonic or computed-tomographic images

This is an examination equipment suitable for getting vascular flow over time and making a decision on treatment method based on the result of it. For example, when coronary artery embolus or chemotherapy by coronary arterial injection is conducted, either of which is an effective treatment method for liver cancer, it is a critical process to make it sure that the injected drug reaches the tumor. The IVR-ADCT equipment makes it possible to monitor the flow of drug injected from coronary artery all along.



True Beam™ (developed by Varian Medical Systems) installed (July, 2013)



In September, 2002 when the SCC opened, two linac radiotherapy equipment were installed already, and another one was added in 2005. Then in July, 2013, one of the originally installed systems was replaced by the newest and most advanced model named True Beam™ (by Varian Medical Systems), which was the very second installment in Japan.

True Beam™ is known for high accuracy, which makes it possible to give more precise irradiation than ever even in difficult cases like when cancer is identified too close to sensitive organs including brain, spine, lung and digestive system.

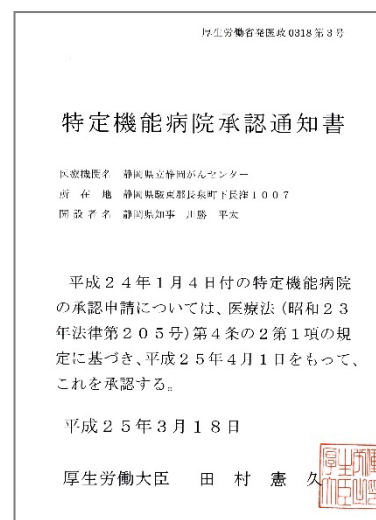
Moreover, as the power of this new model is four times higher than conventional ones, delivery time for irradiation can be shortened. Advanced functions including respiratory synchronization and positioning/tracking by images make

high precision in radiotherapy possible. Especially in case of radiotherapy demanding high accuracy, including IMRT(Intensity Modulated Radiation Therapy) or stereotactic radiation therapy, the features of True Beam™ are very much helpful.

The radiation room offers patients a very comforting atmosphere, with wood-effect interior and the skylight windows. When a patient lies on the treatment table in this room, he/she will feel as if it were in the forest under the blue sky.

The SCC approved as a special functioning hospital by the Ministry of Health, Labor and Welfare (April 1, 2013)

“Special Functioning Hospital” is a medical institution officially approved by the Ministry of Health, Labor and Welfare as one being dedicated to developments of medicine, medical technology and human resources and being equipped with high-grade medical safety, functions and abilities. Among the entire 8,000-something hospitals in Japan, other than 80 hospitals of universities and medical colleges, and 3 hospitals in the National Center for Global Health and Medicine, only 3 of the Osaka Medical Center for Cancer and Cardiovascular Diseases, the Cancer Institute Hospital and the SCC are the ones being approved. In Shizuoka Pref., the Hamamatsu University Hospital is the only other medical institution that has been approved as a Special Functioning Hospital.



The approval means nothing less than that the SCC ensures the same level of high-grade functions as university hospitals and the National Center for Global Health and Medicine. It helps boosting the quality of local medical care through rearing and training young medical staff coming out from all over Japan. At the same time, it helps strengthening ties with local hospitals and clinics. It is also expected that the approval will possibly boost the Farma Valley Project, as the development of medical technology is being promoted and recognized highly.

Survival rate of pancreatic cancer patients improved by S-1(anticancer drug) in the clinical test of supplementary chemotherapy after surgery (January, 2013)

Surgical operation to remove cancer has been considered as only one method of treatment for permanent cure of pancreatic cancer. However, when pancreatic cancer is identified, the percentage of cases with complete removal is from 20 to 30, which is rather low. Moreover, it is considered as a kind of cancer with a less favorable prognosis as the 5-year survival rate after the surgery remains as only 20%. For the past 20 to 30 years, there hasn't been any breakthrough in treatment method for pancreatic cancer and the rates have always remained low.

In August, 2012, it was discovered that when S-1, oral anticancer drug, was administered as supplementary chemotherapy after surgery to pancreatic cancer patients with removable cancer, the death rate of went down by 44% compared with the cases with conventional treatment by gemcitabine. At the SCC, this has been immediately brought to the clinical use since then.

At the Gastrointestinal Cancers Symposium of the ASCO(American Society of Clinical Oncology) Annual Meeting (ASCO-GI2013 in San Francisco, USA), the chief researcher Katsuhiko Uesaka, M.D.,Ph.D., the deputy director of the SCC Hospital and the head of Hepato-Biliary-Pancreatic Surgery, made a presentation on the result of this study. It received a huge response from the ASCO members,

which led to the Pancreatic Cancer Treatment Guideline Revision Committee (March 23, 2013, in Kagoshima, Japan) where conventional treatment methods were discussed.

In the chapter of supplementary chemotherapy after surgery of “Pancreatic Cancer Treatment Guideline 2013,” the sole therapy with S-1 is recommended as a regimen of the supplementary chemotherapy after surgery. S-1 is now taken as a new standard treatment method for supplementary chemotherapy after surgery.

The SCC certified as “case observation center for colon and rectum procedure” for surgical operations performed by the “da Vinci” Robotic Surgical System (November, 2012)

At the SCC, surgical operations by the “da Vinci” Robotic Surgical System have been conducted since December, 2011. In addition to the cases of removing prostate cancer, which are covered by Japanese public medical insurances, operations for urinary organs, colon and rectum, stomach and lung have been performed by 2 of these robotic surgical systems.



Operations performed by the da Vinci Robotic Surgical System are getting rapidly frequent, because even cases considered as impossible by ESD(endoscopic submucosal dissection) can be handled by the minute robot movements. It helps much about some very difficult cases and turns the impossible into the possible. Also, as it is expected that patients can be back to normal life after the operations as they offer comparatively low invasive potential.

Before a doctor performs a surgical operation by the da Vinci Robotic Surgical System, he/she needs to go through several training sessions recommended by relevant associations, as well as observing actual surgeries performed at a certified observation center. In Japan, there weren't any certified observation centers in the field of colon and rectum cancer before, so that doctors had to travel all the way to Korea for observations.

In November, 2012, Intuitive Surgical, Inc., U.S.A. certified the SCC as the “case observation center for colon and rectum procedure by the da Vinci Robotic Surgical System,” which was the first certification given in the field in Japan. Now a Japanese doctor doesn't have to travel to Korea for observing a surgical operation of colon and rectum cancer performed by the da Vinci Robotic Surgical System.

The SCC awarded the Japan Cancer Society special award the “Asahi Award” (September, 2012)

In September, 2012, the SCC was awarded the “Asahi Award” for what had been accomplished by a series of local on-site sessions called “Inquiries about Cancer” over 10 years. At the SCC, the Hospital,

the Research Institute and the Disease Management Center have been working in collaboration for supporting patients and their families since the opening day in 2002.

What the SCC has been doing with the local on-site sessions of the “Inquiries about Cancer,” which won the award, is now a model inquiry and support center among all set up at the Regional Medical Care Support Hospitals for Cancer Treatment in the whole nation. Inquiries from cancer patients and their families as well as citizens of Shizuoka and medical staff are given and answered both to-face and by telephone, which makes one of the efforts for pursuing ideal inquiry center about cancer.



Medical & dental cotherapy initiated by the SCC becomes a part of healthcare services provided by health insurance (April, 2012)

At the SCC, disease complications including pneumonia as well as oral complications before and after cancer treatment have been prevented and alleviated at the Division of Oral Surgery since the day of opening in 2002. Oral care has always been a part of cancer treatments at the SCC.

In 2006, collaboration between the SCC and the Shizuoka Prefecture Dental Association started promoting “the Shizuoka Model,” which is a system allowing cancer patients to take oral care at the local dental clinics before and during cancer treatments. This medical and dental cotherapy system initiated by the SCC went spreading around the country, which led to adding a new item “perioperative management of oral function” in the healthcare services provided by health insurance at the revision of medical service fee in April, 2012.

Graduate school affiliation system established as a new institution (April, 2012)

- 1) Graduate School Affiliation System with Keio University School of Medicine and Graduate School of Medicine Established (April, 2012)

Shizuoka Prefecture and Keio University came to close a business partnership agreement in December, 2010, to work together on collaborative research, industrial development and human resource cultivation, with the SCC in the center of the whole partnership. Then in April, 2012, it moved further forward to establish a new institution about graduate school affiliation system between the SCC and Keio University School of Medicine and the Graduate School of Medicine for promoting collaboration and medical education.

In April, 2013, 6 doctors entered Keio University Graduate School of Medicine by dint of this newly established system. This way, they are now able to complete their doctorates while being engaged in clinical medicine at the SCC.

The system supports those who work on doctorates in the following ways:

1. All the expenses including tuition and travel, etc. are covered as public expenditure up to the 4th year.
2. When there is a need to leave the hospital for lectures, it will be handled as “business trip.” Therefore, doctors don’t have to take “paid leaves” for going to school.

With these supports, doctors can now study for doctorates while working at the SCC hospital. In 2014, 4 doctors got enrolled Keio in dint of this system.

2) Graduate School Affiliation System with Graduate School of Medicine of Osaka University Established(April, 2014)

The SCC and Graduate School of Medicine, Faculty of Medicine, Osaka University closed an agreement about cooperation and collaboration in research and education (on the graduate school affiliation system), and established the graduate school affiliate for “the Science of Cancer Nursing Based on Medical Care by Multidisciplinary Team”(School of Health Sciences, Graduate School of Medicine, Faculty of Medicine, Osaka University) inside the SCC.

At the graduate school affiliate in the SCC, the medical staff of the SCC appointed as invited professors and associate professors of Osaka University give guidance on research. Upon finishing the course, doctorate of nursing sciences or health sciences is awarded.

