

Activity Report

2021



FUNDAÇÃO
FACULDADE DE MEDICINA

SUMMARY

03 MESSAGE FROM THE BOARD

04 PRESENTATION

05 FFM IN NUMBERS

07 FFM PROFILE

19 FINANCIAL BALANCE OVERVIEW 2021

21 INTEGRAL HEALTH CARE ACTIONS

55 OTHER HEALTH CARE INITIATIVES

59 COVID-19 FACING PROJECTS

65 INNOVATION PROJECTS

71 RESEARCH PROJECTS

87 TRAINING PROJECTS

91 HEALTH POLICY PROJECTS

97 INSTITUTIONAL PROJECTS

103 ABBREVIATIONS IN THIS REPORT

MESSAGE FROM THE BOARD



Flavio Fava de Moraes, PhD, FFM Director General



Jose Otavio Costa Auler Jr., PhD, FFM Deputy Director-General

Since the beginning of the global coronavirus pandemic, in the end of 2019, reaching Brazil in the beginning of 2020, profound changes to our routine have taken place. The FMUSP Clinics Hospital Complex was modified to assist people infected by COVID-19; appointments were canceled, elective surgeries suspended, the collective institutional effort was entirely redirected to provide care for the population victimized by the new coronavirus.

Part of the year 2020 elapsed with isolations in different levels in different areas, with partial resumption of activities in the second semester of that year, a moment in which the Hospital attempted to proceed with its normal pace, still quite affected due to the adoption of both significant and required changes for its proper performance.

Albeit considering that new setting, the normalization of activities was timid, taking the due precautions to prevent infections of staff and patients that returned for different treatments. In-person classes were hitherto practically absent. 2021 unfolds with some respite owing to vaccination programs and the dousing number of cases. The year 2021 swiftly elapsed with the resumption of health care and academic activities, but in the closing months of the year, the presence of a new variant, named omicron by the World Health Organization, startled the world yet again. Spreading rapidly, but fortunately less lethal, it has been impacting a large share of the population. The year 2022 commences with that impending fear, stressing the health sector with hospitalizations once more.

Despite the adversities promoted by the pandemic, the collegiates that govern the life of the

institutes members of HCFMUSP, FMUSP, and the support foundations captained by their directors remained sturdy while seeking better paths for our House. Within that spectrum, we witnessed the shift in command of Universidade de São Paulo. Dean Prof. Dr. Vahan Agopyan and Assistant Dean Prof. Dr. Antonio Carlos Hernandez leave their office, having faced the hard times of the pandemic with gallantry. The new management takes office on January 25th, 2022: with Prof. Dr. Carlos Gilberto Carlotti Junior as the new dean, and Prof. Dr. Maria Arminda do Nascimento Arruda as assistant dean. Indeed, FFM wishes the best of luck and a fortunate term in that journey, whose greatest challenge ahead of USP is the full return of academic activities, notwithstanding the looming threat of the omicron variant.

Amongst us Prof. Dr. Flavio Fava de Moraes leaves the command of the Fundação Faculdade de Medicina. During his exceptional management in the many years leading the Institution, Prof. Fava consolidated an extraordinary legacy for FFM, of which we may say today has been indispensable for the existence of the Clinics Hospital and FMUSP. With his personal prestige accumulated by an exemplary public life in many relevant roles, underscoring that as dean of USP, the country's largest and most prestigious university, FFM under his fruitful management has grown and become consolidated, an example of sternness and efficiency for the entire Brazilian nation. To Prof. Fava, our eternal acknowledgments and admiration.

Prof. Dr. Jose Otavio Costa Auler Junior
Assistant Director-General of FFM

PRESENTATION

Have an overview of the social reach that FFM, in a joint initiative with HCFMUSP and FMUSP, obtained in 2021 by analyzing the chart “**FFM in Numbers**” (page 5).

A brief history of FFM (page 8), its **organizational structure** (page 10), **strategies** adopted (page 13), major **partners** (page 15), major **certifications** (page 16), its **consolidated results** (page 18), and the **Financial Balance overview** (page 20) are also presented in this Report.

In the FM/HCFMUSP System (page 22) we underscore, in 2021, the launch of the Ester Sabino Award for Women Scientists in the State of São Paulo, which aim to recognize women who have significantly contributed to science in the senior and young researchers categories.

In order to fulfill their statutory objectives, FFM develops, along with HCFMUSP and other partners, a series of integral health care actions (page 30), always prioritizing SUS patient care. Ensuring the performance of special procedures such as transplants, implants and other high specialty procedures (page 32), is another among its priorities.

The performance obtained in 2021 by the HCFMUSP Complex (page 35) and by other Health Units (page 45), despite hindered by the pandemic, was ensured by FFM, through the provision of human and financial resources.

With the qualification as a Social Organization, it became possible for FFM to manage the ICESP Management Contract (page 48), specialized in high complexity care and equipped to provide integral

care to oncology patients in the public health service (SUS).

FFM also continued to manage the IRLM Management Contract (page 51), which grants SUS quality levels similar to the best care centers for the disabled in the world.

The development of **Other Assistance Initiatives** (page 55), of **COVID-19 Facing Projects** (page 59), and of **Research Projects** (page 71), jointly with HCFMUSP and other partners, were FFM priority actions in 2021.

The COVID-19 pandemic accelerated many projects focused on digital health and Artificial Intelligence **innovation** hub (page 67) of the FM/HCFMUSP System.

The accomplishment, jointly with HCFMUSP and other partners, of **Qualification** projects (page 87), with aim to convey knowledge, in a manner both ethical and innovative, with a high quality level, and of **Health Policies** (page 91), including the definition of processes and technologies intended for the improvement of the diagnosis and treatment of diseases, among others, is also part of FFM.

The development of **Institutional Projects** (page 97) jointly with HCFMUSP and other partners, that mainly aim to upgrade, expand and maintain the physical and technological infrastructure of FMUSP/HCFMUSP System installations, is also part of FFM's actions in 2021.

The **abbreviations** used (page 103) and the current membership of **FFM's Administration** (page 105) complete the FFM 2021 Report.

FFM IN NUMBERS

Procedures + Admissions with No Cost for SUS Patients - 2021	Quantity	Page
Transplants and Implants (SES-SP Agreement)	(*) 661	32
Ambulatory Statement - Authorization for High Complexity Procedures - APAC (SES-SP Agreement)	(*) 133,134	33
Pharmaceutical Assistance - Quantity of CEAF Medications (SES-SP Agreement)	(*) 40,623,567	34
ICHC + PAMB – Medical Specialties Care (SES-SP Agreement)	7,631,578	36
IPq – Psychiatry Care (SES-SP Agreement)	62,792	37
IOT – Orthopedics and Traumatology Care (SES-SP Agreement)	239,461	38
ICr - Children and Youth Health Care (SES-SP Agreement)	876,741	39
InRad – Radiology Care (SES-SP Agreement)	230,945	40
IMRea - Vila Mariana, Umarizal, Lapa and Clínicas Units (SES-SP Agreement)	136,162	42
HAS – Long-stay patient care – (SES-SP Agreement)	4,596	43
HAC – Intermediary care assistance – (Under construction) (SES-SP Agreement)	0	43
Aids House (SES-SP Agreement)	31,021	45
ITACI - Children's Cancer Treatment (SES-SP Agreement)	21,272	46
C.S.E. Butantã (SES-SP Agreement)	3,382	46
HU-USP - Quantity of Surgeries and Ambulatory Care (SES-SP Agreement)	(***) 9,979	47
ICESP (Management Contract)	445,616	49
ICESP Osasco (Management Contract)	22,908	49
Lucy Montoro Rehabilitation Institute (Management Contract)	18,483	51
CEMIM – IOT - Quantity of Surgeries and Ambulatory Care (SES-SP Agreement)	2,963	56
CEDMAC - Quantity of Assistances (SES-SP Agreement)	(**) 13,488	57
Emílio Ribas Infectology Institute - Quantity of Exams (SES-SP Agreement)	300,461	57
NGA Várzea do Carmo (SES-SP Agreement)	15,674	57
Speech Therapy + Surgery + Ambulatory Care in Patients with Lip and Palate Clefts (Other Agreements)	802	56
Students Financial Support Program - AFINAL	(*) 104	56
TOTAL	10,068,324	

(*) Quantity merely informative and not considered in the Assistance Total

(**) Approximate average quantity

(***) Quantity performed from January to February/2021

FFM Profile



FFM PROFILE

Brief History

FFM works behind FMUSP and HCFMUSP, founded 35 years ago, to provide greater agility and effectiveness to academic activities in health areas.

Behind USP's Medical School (FMUSP) and its Clinics Hospital (HCFMUSP), with its Institutes, auxiliary hospitals and other health care services, in addition to education and research, Fundação Faculdade de Medicina (FFM) performs its role, founded 35 years ago to support FMUSP and HCFMUSP's activities.

FFM's main role is contributing with FMUSP and HCFMUSP's administrative/financial management, granting more agility and effectiveness to the academic and health care initiatives in the medical fields.



Facade of the FFM main office, on Rebouças Ave.

The Foundation's activities are associated to the decisions of FFM's Curator and Consultive Councils; the Deliberative Council and the HCFMUSP Planning and Control Commission; and the FMUSP Technical-Administrative Congregation and Council. Also, FFM is submitted to strict controls by the Curatorship from the Public Prosecution Office of São Paulo, the State and Municipal Court of Auditors, and an independent external audit.

For the effective joint operation of HCFMUSP and FFM in developing integral health care, the Integral Health Care to SUS Patients Agreement was signed in 1988 between FFM, HCFMUSP and SES-SP, with aim to assist SUS patients, in addition to other health-related actions in the Hospital Complex. That agreement was renewed for another five-year term in the end of 2018.

FFM develops, supports, manages, and maintains hundreds of Projects in Integral Health Care, Assistance, Institutional, Research, innovation, Clinical Studies and Health Policies, via agreements signed with public and private, national and international institutions, hiring researchers and professionals directly allocated to research projects, in addition to the acquisition of materials and equipment.

The FMUSP restoration and modernization Project, developed between the years of 2000 and 2008, relied on the key support from FFM, which shared with FMUSP the coordination of the Project and the fund raising.

In 2008, FFM became a Social Organization and extended their participation in the management of health care projects, such as the West Region Project, ended in 2016. With that, the control and processes systems were upgraded without need to significantly increase the direct administration staff.

In 2008 and 2010, FFM signed Management Contracts to manage the health care activities and services of ICESP and IRLM, respectively, which are still in effect.

In 2006, a total of 112 assistance programs and projects were and 120 clinical studies being developed in the FM/HCFMUSP System. In December/2021, those numbers rose to 241 and 577, respectively

In terms of staff, in 2003 there were 10,203 collaborators administrated by the FFM Human Resources Management, among those allocated in direct administration, in the Clinical Hospital and in specific projects. Today there are a total of 11,949 (December/2021) collaborators.

Over the years, FFM's Board has faced, with sternness and competence, all hardships the country has been enduring, sustaining a solid and stable FFM. In the past few years, in particular, with the health sector enduring such hardships, FFM's operations were indispensable in assisting the hospitals under their management.

Organizational Structure

FFM's direct administration professionals are distributed and organized in the teams of nine Specialized Managements.

As its major control body, FFM relies on the Curatorship Council (comprising ten members) and on the Consultive Council (formed by 30 guest members from the FMUSP-HC System and from the civil society), both presided by FMUSP's Director, who also presides the HCFMUSP Deliberative Council.

The synergistic relationship with the FMUSP Board and its Congregation and with the Deliberative Council, the Planning and Control Commission, the Clinical Board and Superintendency of HCFMUSP, strengthens and further leverages the joint actions they carry out.

The 348 (December/2021) direct administration professionals of FFM are distributed and organized into teams of the nine Specialized Managements that compose it, in addition to their Board and Financial Superintendency. They are: Legal Consulting; 2) Controllershship; 3) Invoicing and Control; 4) Financial; 5) Information Technology; 6) Materials and Importation; 7) Projects and Research; 8) Human Resources; and 9) Complementary Health.

Each Management has a leadership with technical and managerial expertise, who coordinates their team with rationality, determination and responsibility. The general coordination is up to the Board, seconded by the Financial Superintendency.

In 2020, the prevention measures determined to protect collaborators during the COVID-19 were implemented without prejudice to FFM activities, such as: adoption of a hybrid work model—In-Person and Home-Office, in particular for collaborators with special needs, such as pregnancy, co-morbidity, and older than 60; implementation of a rotation/schedule for in-person work; on-line meetings; use of a VPN channel for home-office collaborators' remote access to FFM computers; formation of work groups in WhatsApp; and installation of the FOLLOW-ME of FFM phones for home-office collaborators.

As of August, 2021, all direct collaborators resumed in-person activities, observing all preventive measures in protection against COVID-19.

The attributions of each of the nine Managements are demonstrated below.

1) The LEGAL ADVICE Department promotes the defense of FFM's interests in administrative,

legal or out-of-court suits; it sponsors and administrates the litigation of suits in the tax, labor and civil areas, in the legal and administrative spheres; in addition to complying with all legal obligations, the maintenance of the certificates and titles granted, the execution of the tax planning, etc.

In 2021, we underscore the renewal, until December/2024, of the Social Welfare Charitable Entity Certificate (CEBAS). CEBAS is granted by the Health Department to non-profit private-law legal entities that are recognized as a Social Welfare Charitable Entity for the provision of services in the Health Sector. A CEBAS certification ensures the exemption of social security contributions and the signing of agreements with the public authority, among others. FFM has such title since 1989.

2) The CONTROLLERSHIP Department is responsible for the accounting, bookkeeping, accountability and property control of the Institution, among other functions.

3) INVOICING AND CONTROL Department: Unified as of August/2014, the Invoicing and Invoicing Control areas are responsible for invoicing the medical care services for the Public Health System (SUS) and Complementary Health (SS), clinics registration, registration of physicians for SS care, billing operations, recovery of disallowed values in the SS segment, control and distribution of the amounts related to the services provided in the several units of the FM/HCFMUSP System (SUS and SS), and payment of medical fees to the professionals with an employment bond, authorized to provide care and receive within the SS scope.

In the SUS segment, they also operate in the certification/accreditation processes with the Health Department. They serve and support the external audits related to the SUS Refund processes within the administrative scope. In October 2020, this Department was definitively transferred to the 4th floor of the HCFMUSP Administration Building.

The **Medical Auditing** area of the Invoicing and Control Department of FFM is dedicated to analyzing medical records to assess if the procedure executed x invoiced finds itself invoiced in accordance with the SUS norms in effect. It also works as an authorizer and promotes the guidance process to the areas, with aim to improve the invoicing quality.

As established by SES-SP, owing to the high volume of documents, the **SES Medical Audit** area, despite being directly related to the High Complexity Procedures Authorization Hub - APAC and having a medical staff associated to DRS-1/SES, they operate in the Invoicing and Control Department in order to optimize the flow of their activities.

4) The **FINANCIAL** Department seeks to maintain the best results in Cash financial management and the constant improvement of the receipt and payment services required by the FM/HCFMUSP System and other partners, by means of the latest, safest and most agile tools for financial performance available in the market.

In 2021, after a more controlled pandemic crisis, several activities were resumed, either in-person or on-line, imposing greater speed and requiring a larger number of payment/receipt solutions.

Internal updates and modifications were imposed so we could adapt to market requirements, e.g. new e-Social for the Third Sector, with the submission and sending of updated registries and payments from natural persons without an employment bond with FFM; automatic INSS ascertainment of the service providers and labor law registered employees via DCTFWEB; implementation of the DDA to collect the bank slips issued against FFM; implementation of on-line slips, the Cielo-LIO collection for credit cards and the automatic Tax Receipt emission of services for settled titles; in addition to the webservice channel for the registration and receipt of resources, along with the FFM Receipt.

The partnership of other FFM departments, such as Human Resources, Controllershship, and IT were greatly important and only together with those and other FFM departments shall we be able to continue fulfilling our mission.

Also noteworthy is the financial yield of R\$ 37.2 MM attained in 2021, representing 205.50% of the 2020 result (R\$ 18,1 MM), surpassing with some advantage the increment of 158.85% occurred in the interest rates (CDI/SELIC) in the same period.

5) The **INFORMATION TECHNOLOGY** Department is responsible for identifying and developing specialized systems; integrating and monitoring third party systems, ensuring alignment of the requests with the institutional objectives; implementing and upgrading the technical infrastructure required to ensure information security and meet the demands for quality development in the administrative and operational processes, within the scope of FFM and interfaces

with the partners HCFMUSP, FMUSP, ICESP and IRLM.

They define the strategic Planning of Information Technology (IT) and monitor, via the Annual Work Plan and the Investment Plan, the projects that shall provide the corporate requirements of technological upgrade of information and communications. They keep a close relationship with the IT and Communications areas of HCFMUSP with the purpose of sharing knowledge, maximizing results and reducing costs.

In 2021, the IT Department efforts focused on assessing and initiating the migration of older systems and comply with the legal obligations and provision of information to the government bodies, e.g. AUDESP and e-Social.

6) The Department of **MATERIALS/** (national market and Importation) executes the acquisitions of materials, inputs, devices and equipment; service contracting, works and renovations; payment of international services, complying with the proper taxes and legislation in regard to providing information to the controlling bodies; and everything else that may benefit the FM/HCFMUSP System and other Health Units.

In 2021, we continued the work intended for the functioning of the general service of acquiring inputs and equipment in the treatment of COVID-19 patients.

In national purchases, during the year 2021, owing to the pandemic's continuation, 275 processes were carried out, totaling more than R\$ 39.6 MM. Despite all the adversity, it was possible to save R\$ 1.1 MM (2.7%) in negotiations with suppliers. A specific team was designated to fulfill those demands.

For other acquisitions and hirings made for the FM/HCFMUSP System, in 2021 a total 1.544 processes were done with final amounts negotiated of R\$ 218.2 MM, creating savings of R\$ 10.5 MM (4.6%).

We also had a transit of 1,588 national purchase processes of ICESP in 2021, totaling R\$ 203,0 MM.

As to **Imports**, 192 processes were executed, totaling US\$ 1.7 MM, with 0.6% savings.

7) The **GENERAL MANAGEMENT OF PROJECTS AND RESEARCH (GGPP)** is responsible for the administrative-financial management of all processes that involve the contracts/agreements signed with public and private bodies, both national and international, related to the activities proposed by their partners, in particular the FM/HCFMUSP System, with exception to the Management Centers

(CGs) intended for the invoicing of the medical care services for the Public Health (SUS) and Complementary Health (SS) System.

FFM participates in relevant projects, focused mainly on prevention and treatment of diseases that affect the health of the Brazilian population. In December 2021, 241 projects were active in FFM, subsidized by public and private resources, both national and international, and 577 clinical studies, sponsored by the pharmaceutical industry.

In addition to ensuring the proper fulfillment of the legal instruments associated to the projects for care, research, innovation, qualification, health policies, institutional, among others, GGPP is also responsible for the financial control of the other activities carried out by the members of the FM/HCFMUSP System, such as: IRLM Management Contract, EEP and CCEX courses, donations, sponsorships, provision of various services, leases, etc., which represented, in 2021, more than 800 CGs, totaling more than 1,700 active CGs administrated by GGPP.

GGPP's operations also encompass FFM's **Communication** area, which has the main goal of tending to its institutional image. In 2021, the Communication area kept FFM's Intranet permanently updated, which offers users facility and agility in the search for information and documents, access to the integrated systems and several other resources.

On FFM's **Website**, which is also constantly updated, we underscore the **Transparency Portal**, dedicated to publishing detailed data and information on the budget and financial execution of the institution. It is also responsible for drafting FFM's Annual Work Plan (October), the Annual Activities Report (March) and the Policies that determine the guidelines and guide the identification, statement, and solution of situations that may present conflict of interests.

It is also responsible for publishing the **FFM Journal**, which, as of February/2021, became monthly (instead of bi-monthly) and digital (forwarded via e-mail). The journal is distributed to the FM/HCFMUSP System and to representatives of public and private institutions.

8) The Department of HUMAN RESOURCES administrated in 2021 a total of **11,949** employees, among FFM's direct administration personnel, FFM's personnel serving the FM/HCFMUSP System, complementarians and personnel allocated to specific projects of population care. Of that total, **348** collaborators are allocated in direct administration, focused on the support to hundreds of the entity's social programs, as well as health care activities, integral health care development and

service to SUS patients, developed by the remaining professionals. The latter are hired in a part-time or full-time shift, hence seeking to stimulate the production of works in the didactic, health care and research areas, by means of material support and proper remuneration.

They continued with the personnel Qualification and Training Program (1,226 hours/classes), developed recruitment and selection activities of the entire FM/HCFMUSP System (more than 25 thousand candidates recruited and more than 13 thousand candidates evaluated), administration and payment of social benefits (R\$ 82 million) and salaries, involving expenditures with a payroll of approximately R\$ 841 million, in addition to coordinating the contracting, dismissal, leave, vacation, position and wages, food support, meal tickets, transportation tickets, among others.

In 2021, the Human Resources Management continued working at HCFMUSP's installations and led the operation to hire and manage new employees, an addition to our current staff, to treat patients with COVID-19. Professionals were hired for the medical, nursing, physical therapy areas and other services in support to patients in Infirmaries and ICUs.

9) The COMPLEMENTARY HEALTH DEPARTMENT has the commitment of materializing commercial relations and relationships with the contractors/health operators, as well as the latent challenge of, along with HCFMUSP and its Institutes Superior Administration, seeking alternatives to offer that model of health care services provision.

We highlight the enhancement of management controls and tools, a continued activity towards the growth of Complementary Health by expanding the services contracted, negotiations to improve the amounts and changes in the remuneration model, management of Health Operator portfolios and other private sector sources.

In 2021, the department moved to the 5th floor of the Administration Building, along with the Superintendency of HCFMUSP; promoted the adherence of the contracts to the General Law for Data Protection (LGPD); and participated actively in the project for the transition of the Multimed platform (Phillips) to MV.

The invoicing of contracts with operators and other services had a positive impact on revenues, with an additional R\$ 8 MM compared to 2020, whereas the inflation readjustment negotiations correspond to 9.6% of the total invoiced and they were added by the contracts by exception, which contributed with more than R\$ 10.3 MM to the

consolidated revenues. In that context, 3,775 registers of orthotics, prosthetics and special materials (OPME) were made, and 3,073 demands from the Institutes that make up the Supplementary Health system in the Complex were fulfilled.

In 2003, FFM coordinated the FNUSP restoration and Modernization Project, a sizeable initiative dedicated to bringing the School's historical building, designed by architect Ramos de Azevedo, to the 21st century.

It was in that context that **Prof. Dr. Flavio Fava de Moraes** assumed **as director-general of FFM**, contributing with profound expertise in the management of public entities and academic research in leading institutions both in Brazil and abroad.

Graduated by USP's Dentistry's School, he built his academic career at FOU SP itself and at ICB-USP, which he directed from 1982 to 1986. He published more than 150 scientific papers and was a visiting professor at Michigan University, in the United States, and also the scientific director of FAPESP, dean of USP, president of the Science and Technology Council of the State of São Paulo, secretary of Science and Technology of Economic Development of the State of São Paulo, among many other activities.

That experience was key in the more than four terms as FFM director-general, from 2003 to February 2022. A period of much work, always developed with great transparency, sternness, and integrity in favor of FFM's statutory goals as a foundation that supports the activities of FMUSP and its Clinics Hospital.

The quantitative and qualitative growth over that period was exponential. FFM works in the management of projects, research, and clinical studies with national and international funding, in purchases, hiring personnel, and the management of resources associated to SUS assistance, among several other activities. Part of that growth also derives from signing, between 2008 and 2010, the management contracts with ICESP and IRLM, which broadened the scope of FFM's activities with the guarantee of high complexity care to the population, in a fashion that is humanized and recognized by their patients.

Prof. Dr. Fava's actions ahead of FFM has also been key in the last two years, in which all the routines of care and research of HCFMUSP were altered on account of the COVID-19 pandemic.

As of March, public prosecutor Dr. Arnaldo Hossepian Salles Lima Junior will assume as director-general of FFM.

Strategies

A key point in FFM's institutional strategy is transparency, given the extensive inspection to which it is submitted.

Since 1998, FFM maintains agreements with SES-SP, which include the joint execution of several activities, ranging from the invoicing of the medical-hospital care services and the human resources management of the FM/HCFMUSP System, to renovations and the acquisition of equipment and inputs, among others. It also supports the FM/HCFMUSP System, its extension courses, events, research projects, clinical studies, among other initiatives.

From their current staff of 11,949 employees (December/2021), only 348 are allocated in direct administration; the remaining professionals work directly in activities of assistance, integral health care development and services to SUS patients.

The structural and technological modernization of FMUSP and its Clinical Hospital is also among the core goals, which has been sustained with constant investments. The improvement of management and the services provided by their collaborators is also a priority, with strong resources allocated to training and courses.

A key point in its institutional strategy is **transparency**, given the extensive inspection to which it is submitted. FFM's activities are audited by the Curatorship of the Public Prosecutor's Office, by an independent external audit, and by the State Court of Auditors, in addition to accounting for their projects to bodies such as Ministries, State and Municipal Secretariats, and several public and private institutions, both national and foreign. In the relationship with partners, it operates according to regulations agreed upon case by case, always ensuring austerity in management.

FFM is also accountable for their works beyond the Curatorship Council (four meetings/year) and the Consultive Council (two meetings/year). In these cases, accountability takes place via its Status Report. FFM annually presents these two collegiates with their Work Plan for the coming year and the Activity Report of the year past.

In the Deliberative Council and in the HCFMUSP Planning and Control Commission, FFM discloses the Cash Flow book of its operational accounts on a monthly basis. They also publish the monthly edition of the FFM Journal, with varied and updated content associated to the FM/HCFMUSP System.

In order to adjust to the requirements of the State Court of Auditors, FFM adjusted its Purchase Regulations and its personnel selection criteria for the FM/HCFMUSP System, approaching them to federal law 8666/1993. They aimed, with such, to ensure greater publicity, competitiveness and savings, with no loss of agility in conducting their processes.

FFM also abides by transparency values in respect to the financial and administrative information available at the Transparency Portal, on website www.ffm.br.

The growth of the Fundação Faculdade de Medicina in the past ten years has been quite expressive. Its infrastructure was already quite similar in organizational terms, and the increase in the number of collaborators focused on the management and operational area took much lower proportions than the projects and resources developed by them.

Due to the credibility that FFM inspires with the subvention bodies, the volume of values handled by FFM has increased significantly, year after year. The **operational revenues** and those resulting from projects, contracts, agreements, and others, with a substantial growth over the years, were fully reinvested in favor of its actual operation and the projects executed by FFM.

The **financial guideline** has maintained the quest for positive working capital, basing their decisions on expenses or investments with the prior requirement that financial resources exist for such.

We also underscore that, over 2021, FFM received, via **Donations**, the amount of approximately R\$ 105 million, which have been invested in the execution of several projects in the assistance, education and research areas, with a highlight to the fund-raising resultant from the campaigns promoted by HCFMUSP to face the Covid-19 pandemic, which reached approximately R\$ 16 million.

Over its 35 years, they have constantly sought the improvement of their service standards while being concurrently dedicated to fulfilling its goals and meeting the needs of their partners.

Continued **modernization** of its technical infrastructure, adaptation to current technological requirements and the **training** and specialization of

its staff of professionals are other priorities of theirs.

The Board has a special focus on people and is concerned with their professional and personal growth. The Training and Qualification Program of their collaborators improves their technical skill set, rendering them more efficient and effective. Furthermore, the Board seeks to fulfill the legitimate needs of their professionals by means of reassessing positions, functions, classifications and promotions, always seeking to promote merit. That clears a path for professional growth, spurs adherence, spirit of collaboration, and a sense of belonging to the institution.

The management model also emphasizes a Positive Values Code, which permeate the institution as a whole, represented by integrity, transparency, reliability, good example, commitment, responsibility, flexibility, tolerance, listening skills and patience.

The Board stimulates the Improvement of Processes and Interpersonal Relationships. People have diverse backgrounds, different personalities and varied attitudes and behaviors. FFM understands that the technical competence of people, although absolutely necessary, is not sufficient to complete the profile they desire from collaborators. They thus invest and persist in the improvement of the interpersonal relationships in a way that one may recognize the other, with mutual tolerance, acceptance and bilateral respect. That reduces reactivity, improves the institutional environment and transforms opposition into cooperation.

The 348 (December/2021) direct administration professionals of FFM are distributed and organized into teams of the nine Specialized Managements that compose it, in addition to their Board and Financial Superintendency. They are: Legal Consulting, Controllershship, Invoicing and Control, Financial, Information Technology, Materials and Importation, Projects and Research, Human Resources and Complementary Health.

FFM also answers for the Clinical Studies management, under the supervision of the House professors, to evaluate the effectiveness, tolerability and safety of medications and human and animal research.

In 2021, 241 programs/assistance, education and research projects were active within the institution, in addition to 577 clinical studies developed in the FM/HCFMUSP System.

In 2008, FFM became recognized as a Social Organization, a private legal entity, non-profit, whose activities are directed to education, scientific research, technological development, protection and preservation of the environment, culture and

health, receiving such title from the Public Administration and authorized to enter into Management Contracts with them to perform non-exclusive services of the State. With that, the control and processes systems were upgraded without need to significantly increase the direct administration staff.

In 2008, FFM signed a Management Contract with SES-SP to handle the activities of ICESP, a tertiary hospital that is highly specialized in cancer treatment, which serves SUS patients for complex treatments, coming from the entire state. With the enactment of Complementary Law No. 1.160/2011, which transformed HCFMUSP into a special regime autarchy, FFM, a social organization selected in a public notice, initiated the Management Contracted directly with HCFMUSP as of 2017.

Since 2010 FFM has maintained the Management Contract with SES-SP to carry out the health activities and services at the IRLM. Inaugurated in September, 2009, the Institute was designed to become a center of excellence in treatment, education and research in Rehabilitation.

On account of the COVID-19 Pandemic, in 2020 the preventive measures to protect Collaborators and prevent hindering FFM's activities were determined, such as: more flexible work shifts; free access to the parking lot at the Pacaembu center; setting the social distancing rules in the offices or common areas of FFM; immediate authorization for home-office of employees with co-morbidities, pregnant women, and other groups of risk; implementation of a rotation/schedule for in-person work; use of a VPN channel for remote access of home-office collaborators to the computers at FFM; and installation of the FOLLOW-ME of FFM phones for Home-Office collaborators.

Even with the implementation of the home-office rotation system, HCFMUSP can always rely on the active and tireless participation of FFM in all their requirements. In addition to the joint work with HCFMUSP in the front lines, with human resources, FFM participated in the decision-making process; in the legal support to the Agreements signed with public bodies and private sector institutions; in enabling the immediate hiring of an external workforce to provide the ICHC with health sector professionals, in the acquisition of equipment and inputs to face the pandemic; and other initiatives that became necessary.

As of August 2021, FFM complied with the orientation from the São Paulo State Government and the USP Rectory and all direct collaborators, except pregnant women, returned to in-person activities, observing all preventive measures in protection against COVID-19.

HCFMUSP, as the largest hospital education complex of Latin America, had its activities not only impacted, but broadly dedicated to treating the sick affected by the new coronavirus. The HCFMUSP transformation process started in January, when the Crisis Committee was mobilized. With the growth in the number of people infected by the disease in the State, HCFMUSP fully restructured its assistance policy, dedicating the ICHC exclusively to confront the disease. As a result, all patients hospitalized in the ICHC for other kinds of medical care were distributed among the seven Institutes of the Complex and in the University Hospital.

A total of 7 thousand professionals were allocated solely to treat COVID-19. In order for the operation to be carried out successfully, the supplies and resources management, which relayed on FFM's active participation, has been crucial.

In 2021, FFM developed jointly with the FM/HCFMUSP System several **partnerships** with institutions interested in developing medical sciences, such as:

Federal Public Bodies:

- National Sanitary Vigilance Agency - ANVISA;
- National Economic and Social Development Bank - BNDES;
- Science and Technology Department / CNPq;
- Science and Technology Department / FINEP;
- Health Department - MS;
- Pan American Health Organization - PAHO / World Health Organization (via the Health Department);
- Petróleo Brasileiro S/A – Petrobrás (mixed capital company);
- Regional Administration Superintendence of the Economy Department in São Paulo.

State Public Bodies:

- Research Support Foundation of the State of São Paulo - FAPESP;
- Emílio Ribas Infectology Institute
- State Secretariat for Economic Development of São Paulo – SDE;
- State Health Secretariat of São Paulo - SES-SP.

National Private Institutions

- Brazilian Industrial Development Agency - ABDI;
- Aids Healthcare Foundation of Brazil;
- Charity Association Alzira Denize Hertzog da Silva – ABADHS;
- Associação Beneficente Síria – Hospital do Coração;
- Latin American Association for the Promotion of Oral Health and Dentistry Research;

- UMANE Association;
- Braincare Desenvolvimento e Inovação Tecnológica S.A.;
- Brainfarma Indústria Química e Farmacêutica S/A;
- BRF S/A;
- CISCO Comércio e Serviços de Hardware e Software do Brasil Ltda;
- Crefisa S/A Crédito, Financiamento e Investimentos;
- EMS S/A;
- Fundação Butantan;
- Foundation for Institutional Support to Scientific and Technological Development of the Universidade Federal de São Carlos;
- Itaú Foundation for Education and Culture;
- Fundação Maria Cecília Souto Vidigal;
- Foudation for the Scientific and Technological Development in Health Care - FIOTEC;
- GE Healthcare do Brasil;
- Grupo Itaú;
- Huawei do Brasil Telecomunicações Ltda.;
- Laboratórios Ferring Ltda.;
- Magazine Luiza S.A.;
- Samsung Eletrônica da Amazônia Ltda.;
- Sanofi Aventis Farmacêutica Ltda.;
- Siemens Healthcare Diagnósticos Ltda.;
- International Nephrology Society;
- Vale S/A.

International Institutions

- Abbott Laboratories;
- Alzheimer's Association;
- Baylor University;
- Inter-American Development Bank - IDB;
- Bill and Melinda Gates Foundation;
- bioMérieux S.A.;
- Blood Systems Research Institute;
- Case Western Reserve University;
- Climate and Land Use Alliance;
- Conquer Cancer Foundation of ASCO;
- Diomics Corporation;
- European Foundation for the Study of Diabetes;
- European Union by European Commission;
- Family Health International;
- Fondation Mérieux;
- Foundation for Innovative New Diagnostics – FIND;
- Grand Challenges Canada;
- Harvard Graduate School of Education;
- Harvard T. H. Chan School of Public Health;
- Hebrew Senior Life;
- Imperial College of Science, Technology and Medicine;

- Joan & Sanford I. Weill Medical College of Cornell University;
- Johns Hopkins International Injury Research Unit;
- Lego Foundation;
- London School of Hygiene & Tropical Medicine;
- Milken Institute;
- Mérieux S/A;
- NARSAD – The Brain and Behavior Research Fund;
- National Institutes of Health – NIH;
- Partners Healthcare (founded by Brigham and Women’s Hospital and Massachusetts General Hospital);
- President and Fellows of Harvard College
- United Nations Development Programme – UNDP;
- Queen Mary University of London;
- Regeneron Pharmaceuticals, Inc.;
- Research Foundation for Mental Hygiene;
- Schizophrenia International Research Society;
- Swiss Tropical and Public Health Institute;
- The Chancellor Masters and Scholars of the University of Oxford;
- The George Washington University;
- The Ohio State University;
- The Open Society Policy Center – OSPIC;
- The Regents of the University of California – Berkeley;
- The Smile Train;
- The Spaulding Rehabilitation Hospital;
- The University of Manchester;
- The University of North Carolina;
- The University of Sheffield;
- United Nations Children’s Fund – UNICEF;
- University College London;
- University of Birmingham;
- University of Bristol;
- University of California;
- University of Cambridge;
- University of Georgia;
- University of Wisconsin Madison;
- University Health Network;
- ViiV Healthcare UK Ltd.;
- Vital Strategies, Inc.;
- World Health Organization;
- Yale University.

In its 35 years of existence, FFM obtained public acknowledgment for their work as a charitable entity of social welfare, by obtaining and maintaining several **certifications**, among which stand out:

- Declaration of State and Municipal Public Interest (the Declaration of Federal Public

Interest was revoked for all institutions, by Law No. 13,204/2015);

- Attestation of Record and Certificate of a Social Welfare Charitable Entity (CEBAS), deferred by Decree SAS/MS No. 1205, of 12/13/2021, published in the Official Press of the Union on 12/15/2021, valid from 05/12/2010 to 12/15/2024;
- Certificate of Qualification as a Social Health Organization of the São Paulo State Government Health Secretariat - Process SS 001/0001/002.913/2008;
- Certificate No. 018/2008 of Qualification as a Social Organization of the Municipal Secretariat of the São Paulo Municipality Prefecture Management;
- Accreditation, as a foundation in support to the HCFMUSP, along with the Economic, Science, Technology, and Innovation Development Secretariat, Resolution SDE 26, from 10/4/2019;
- Certification with CNPq No. 900.0011/1990, valid through 3/29/2026;
- Statement of Recognition of Tax Immunity over the "Causa Mortis" Transmission and Donation of any Assets or Rights - ITCMD – Process No. IM01310342, valid through 04/12/2025;
- Certification of Enrollment No. 0308/SP/2000 of the State Social Assistance Council - CONSEAS.

In 2021, FFM participated actively, either as a Member or Consultant, of the following **Commissions, Committees, Work Groups** and other initiatives:

- ✓ Collaboration to the São Paulo Foundations Association (AFP);
- ✓ Alcohol and Drugs Agreement Commission;
- ✓ Commission of Financial Support to FMUSP Students;
- ✓ Commission of Clinical Studies of the HCFMUSP Clinical Board;
- ✓ Commission of HC/FMUSP/FFM Integration;
- ✓ FMUSP Research Commission;
- ✓ HCFMUSP Deliberative Council Planning and Control Commission;
- ✓ HCFMUSP Strategic Planning Commission;
- ✓ Executive Commission of Inova/HCFMUSP;
- ✓ USP Foundations Commission (FUNASP);
- ✓ Information Technology Committee;
- ✓ Executing Committee of Agenda 2021-2030;
- ✓ FMUSP Congregation;
- ✓ Zerbini Foundation Consultive Council;
- ✓ Deliberative Council of the HCFMUSP;
- ✓ Council of the Company-School Integration Center (CIEE);

- ✓ Council of the Soccer Museum and the Portuguese Language Museum;
- ✓ Complementary Health Contacts;
- ✓ Contracting Process for the SUS Agreement;
- ✓ Permanent Education School;
- ✓ ICESP Board - Cancer Institute of the State of São Paulo
- ✓ Lucy Montoro Network Board (Morumbi Unit);
- ✓ Pacaembu Pole Real Estate Management;
- ✓ Work Group for the Analysis and Improvement of the Invoicing Process;
- ✓ HR Fixation Management Group;
- ✓ Interaction with TCE/MP/Comptroller;
- ✓ Member of the FMUSP Observatory/Library;
- ✓ People Management Nucleus;
- ✓ Partnership with the Electronic Purchase Exchange;
- ✓ participation in the Health Coalition (ICOS);
- ✓ IT Master Plan;
- ✓ Cíclotron Project

FFM also supports the members in materializing their multiple events. In 2021, they participated in technical-scientific and institutional events: **a)** Psychiatric Clinic Course for Residents – Tysa 2021; **b)** Hackmed Health Hackaton event – CITIC-InovaHC; **c)** “Lower Urinary tract symptoms:

Contemporary Management" event; **d)** Educational support – Fellowship/Specialization in Urinal Disorders – HCFMUSP; **e)** Scientific Support for the Functional Urology Workshop; **f)** NEFROUSP Symposium 2021; **g)** 3rd São Paulo Neurosurgery Symposium; **h)** Innovation in Nursing Course; **i)** Genetics Applied to Neurology Course; **j)** Psychiatric Emergencies Course 2nd Edition; **k)** Multi-professional RMe TC Journey; **l)** Systemic Sclerosis Preceptorship; **m)** Preceptorship in Rheumatoid Arthritis; **n)** Complete Course on Movement Disorders: From Fundamentals to Clinical Practice; **o)** E² Saga Advanced Life Support in Gastroenterology and Endoscopy – Electronic; **p)** Specialization Course in Deep Brain Stimulation for Movement Disorders; **q)** Diagnosis and Treatment of Mental Disorders Based on Clinical Cases Event; **r)** IX ENEO: National Endoscopy Oncology Meeting; **s)** Complete Course on Movement Disorders: From Fundamentals to Clinical Practice; **t)** Online Preceptorship in Neuroendocrine Tumors; **u)** Preceptorship Program - Spondyloarthritis; **v)** EAD course - Immersion in stroke care.

In addition, they **financially supported** the FMUSP-HC System in the following technical-scientific and/or institutional initiatives, whose objectives were pursuant to its Bylaws:

APROVAL	EVENT
2/4/2021	Webinar COVID-19 in Immunocompromised Host of FMUSP
4/19/2021	XL COMU/2021 - University Medical Congress of FMUSP
5/11/2021	Digestive System Endoscopy League of FMUSP
10/21/2021	Introductory Course to the FMUSP Cardiovascular Emergencies League
11/23/2021	Generations Meeting 2021

FFM Consolidated Results

Initiatives towards health promotion, disease prevention, medical-hospital assistance and high complexity rehabilitation to the Public Health Service (SUS) users are the health care activities promoted, in joint action, by HCFMUSP and by FFM, through the Integral Health Care for SUS Patients Agreement, signed, since 1988, between FFM, HCFMUSP and SES-SP.

In ever more upgraded and technologically equipped installations, according to the latest international quality guidelines, the assistance also relies on a highly specialized and trained staffs.

Partnerships with public and private, national and international institutions enable FFM to develop several programs, mainly in the areas of health and education, which benefit the population.

FFM CONSOLIDATED RESULTS							
(In thousands of BRL)	2015	2016	2017	2018	2019	2020	2021
Revenues	1,183,383	1,159,527	1,187,917	1,256,771	1,286,982	1,541,492	1,471,647
SUS medical care	276,587	277,231	287,472	290,957	316,839	322,981	309,463
Private medical care	87,654	111,018	119,968	118,544	125,411	88,347	101,904
Subventions and contributions	649,926	619,578	617,768	692,589	705,481	951,047	890,143
Financial revenues (net)	56,076	60,510	48,542	32,628	31,299	17,357	33,055
Technical services	49,834	44,815	42,077	47,690	44,189	39,807	42,721
Other (courses, donations, etc.)	63,306	46,375	72,090	74,363	63,763	121,953	94,361
Expenses	1,132,359	1,100,606	1,165,371	1,206,875	1,209,230	1,425,018	1,396,568
Personnel	704,885	677,160	672,852	696,140	734,150	841,567	839,206
Consumption materials	207,134	201,922	225,173	242,129	213,442	283,731	247,257
Professional services	152,892	145,116	152,751	171,466	176,614	206,955	209,920
Other (general, depreciations, etc.)	67,448	76,408	114,595	97,140	85,024	92,765	100,185
Result	51,024	58,921	22,546	49,896	77,752	116,474	75,079

While comparing FFM's total revenues, a growth of 24% in 2021 in comparison to 2015 was achieved. The revenues deriving from medical assistances performed by SUS rose 18% in that period, obtained mainly by means of reassessment of fixed values established in the formal agreements that regulate the government funding.

The investments in infrastructure and equipment made by FFM in 2021 totaled approximately BRL 35.5 million. R\$ 27.5 million were invested in HCFMUSP, R\$ 4.7 million in ICESP, R\$ 2.6 million in FMUSP, and R\$ 137,000 in other agreements. In turn, FFM administration invested approximately BRL 591 thousand, with emphasis on equipment and information technology.

FFM CONSOLIDATED RESULTS							
(In millions of BRL)	2015	2016	2017	2018	2019	2020	2021
Total	42.5	26.9	26.2	38.1	26.2	58.0	35.5
Equipment	26.4	13.2	11.1	12.5	14.8	37.8	19.6
Buildings and Installations	7.8	7.3	8.1	16.6	1.9	1.7	7.5
Information Technology	5.4	4.1	5.2	7.4	7.7	10.9	6.4
Other (furniture, vehicles, etc.)	2.9	2.3	1.8	1.6	1.8	7.6	2.0

Overview of the Financial Balance

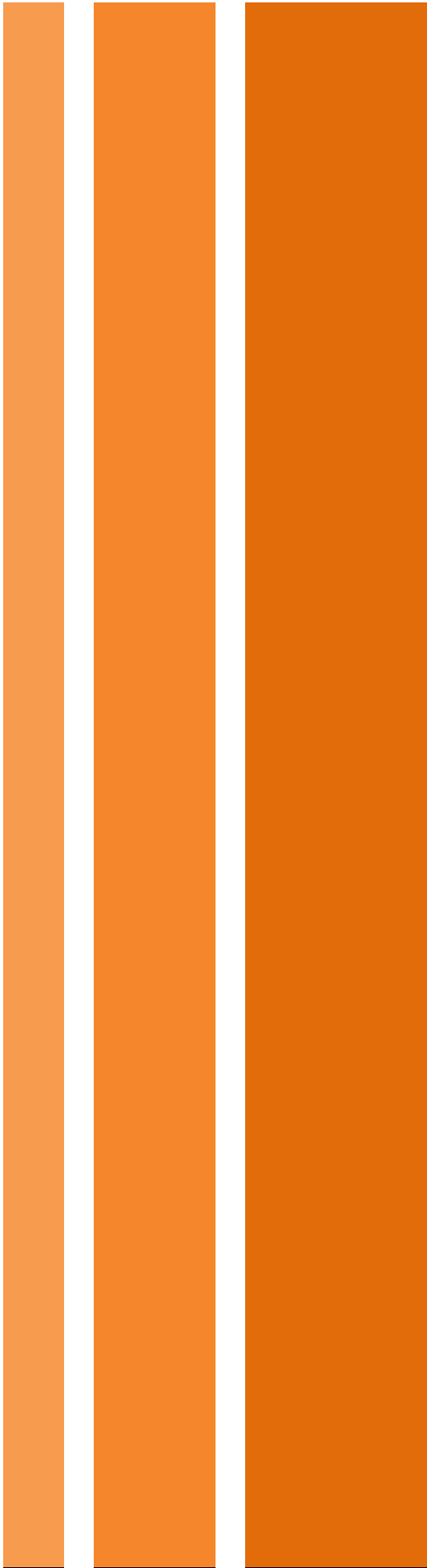


OVERVIEW OF THE FINANCIAL BALANCE 2021

ORIGIN OF THE RESOURCES	2021	%	2020	%	2019	%
Total Revenues	1,471.6	100%	1,541.5	100%	1,287.0	100%
Government Resources	1,166.8	79.3%	1,250.7	81.2%	1,004.2	78.0%
Medical Care - SUS	309.5	21.0%	323.0	21.0%	316.8	24.6%
Subventions	857.3	58.3%	927.7	60.2%	687.4	53.4%
Medical Care - Insurance and Private	101.9	6.9%	88.3	5.7%	125.4	9.7%
Donations	45.4	3.1%	80.0	5.2%	24.0	1.9%
Private cooperation - national and international	32.8	2.2%	23.4	1.5%	18.1	1.4%
Provision of services and/or product sales	77.0	5.2%	66.8	4.3%	65.6	5.1%
Other revenues	47.7	3.3%	32.3	2.1%	49.7	3.9%

RESOURCE APPLICATION	2021	%	2020	%	2019	%
Total Expenses	1,432.1	100%	1,483.0	100%	1,235.4	100%
Personnel	839.2	58.6%	841.6	56.7%	734.1	59.4%
Operational expenses	557.4	38.9%	583.4	39.4%	475.1	38.5%
Asset acquisitions	35.5	2.5%	58.0	3.9%	26.2	2.1%

Integral Health Care Actions





INTEGRAL HEALTH CARE ACTIONS

The FM/HCFMUSP System provides complete assistance in all health care levels, standing as the longest lasting Brazilian university health system and the largest in Latin America.

FM/HCFMUSP System

The Health Academic System of the Medical School of Universidade de São Paulo (FMUSP) and the Clinics Hospital (HCFMUSP) provide complete assistance in all health care levels, standing as the longest lasting Brazilian university health system and the largest in Latin America. Its main objective is to offer education, research and cultural and post-grad activities, with emphasis on multidisciplinary and multi-institutionality.

Theoretical classes and all the academic part take place in the Medical School, whereas the Clinics Hospital is specialized in high complexity care (tertiary/quaternary attention), a reference in critical cases assistance. Also completing the System are: USP's medium complexity University Hospital (secondary attention); the specialized units Extension Service to the Assistance for HIV/Aids Patients, the Butantã School Health Center, and Basic Health Units (primary attention). FMUSP's Integrated Translational Medicine center; the IMT and the SVOC, both associated to FMUSP; and the supporting institutions Fundação Faculdade de Medicina and Fundação Zerbini.

Health assistance levels:

Primary or basic: actions related to the reduction of disease risks and protection of life—promotes routine exams and appointments, with the purpose of prevention, in addition to being a moderator of the service flow in the health networks, forwarding patients to other assistance levels, if required.

Secondary: offers specialized treatment of medium complexity, conditions that compromise patients' quality of life in a chronic manner, formed by inpatient and outpatient facilities.

Tertiary: high complexity service—when the patient's life is threatened, the assistance requires advanced technology, surgery, and highly specialized professionals.

The superior instances of the FM/HCFMUSP Academic Health System are the FMUSP Medical School Congregation and the Clinics Hospital Deliberative Council, both presided by FMUSP's Director. The FMUSP Congregation has a consultive and deliberative function and is advised by the Graduation, Post Graduation, Research, Culture and Extension, Medical Residency and Foreign Relations Commissions. HCFMUSP's Deliberative Council

defines the guidelines of tertiary medical-hospital care and is composed by ten representatives of FMUSP full professors, elected by their peers.

HCFMUSP unit focused on scientific research, the LIMS are dedicated to developing basic and applied research, in addition to diagnostic methods. The current 66 Lab Units of the LIMs include 230 research groups, which are academically and scientifically associated to FMUSP and administratively to HCFMUSP.

In the past 13 years, the FM/HCFMUSP System has been developing a multuser equipment network that is considered a national model. Currently there are 42 nuclei, which offer use of equipment and services for researchers both from the System and external, national and international (premium.fm.usp.br).

The FM/HCFMUSP System is composed by the following institutions:

The **Medical School of Universidade de São Paulo (FMUSP)** (page. 24), recognized by the pioneering and excellence status in education and research, was founded in 1912 and implemented in 1913. In 1931, the current Medical School building was inaugurated. In 1934 it was integrated to USP.

It offers four graduation courses: Medicine, Physiotherapy, Speech Therapy, and Occupational Therapy.

It has the largest hospital in Latin America - HCFMUSP - and is one of the largest medical-scientific research centers in the country, with 66 medical investigation labs, the LIMs, with 230 research groups and an expressive intellectual production, with an average of 1,300 scientific articles published per year.

It has more than one century of excellence in education and international recognition. In 2015 the Medical Winter Schools was implemented, receiving students from universities of many countries.

The **Clinics Hospital of the Medical School of the Universidade de São Paulo (HCFMUSP)** (page. 27), which in April 19th, 2021, completed 77 years since its foundation.

HCFMUSP is the largest hospital complex of Latin America, with approximately 2,400 beds distributed among its eight specialized institutes, two Auxiliary Hospitals, a rehabilitation division, an

Associate Hospital, 66 Medical Investigation Labs, and a Convention Center (CCR).

It also has the Permanent Education School (EEP), an educational center that promotes education for health and education for health professionals and the community in general, in the technical model (in professionalizing and continued initial training categories) and superior model (in areas of professional dissemination, updating, enhancement, specialization, and improvement).

The institution growingly seeks to maintain its pioneering aspect by improving humanization, entrepreneurship, and technological innovation, with the backing of a management focused on scientific development.

Having a long-lasting recognition for its excellence in health care, education and research involving health, HCFMUSP had its Scientific and Technological Institution (ICT) status formalized in 2016 and created its Technological Innovation Hub (NIT-HCFMUSP), inaugurated in the end of 2018.

In September 2019 the District Inova HC was inaugurated, a space to house startups and innovation labs.

The **Fundação Faculdade de Medicina (FFM)**, a nonprofit entity, created in 1986 by AAAFMUSP, which actively participates in the education, research, and assistance activities in FMUSP and their Clinics Hospital.

FFM has a key role in developing integral health care in the FM/HCFMUSP System in its several Institutes and units, since it ensures continuity in the medical-hospital care to the impoverished population via the Public Health System (SUS), via human and financial resources from the System at the actual Hospital, thus enabling HCFMUSP to reach SUS care levels (ambulatory and hospitalizations) in an average percentage of 90%.

In an initiative shared with HCFMUSP, FMUSP, and other partners, FFM participates in relevant projects and research, carried out in all units of the FM/HCFMUSP System, focused mainly on the prevention and treatment of diseases that affect the health of the Brazilian population, generating hundreds of papers published in indexed periodicals, and has been gaining global reach and visibility.

Zerbini Foundation (FZ), private-law foundation that has had an important role in promoting administrative agility and efficiency to InCor, as well as the additional fund raising.

Cancer Institute of the State of São Paulo (ICESP) (page 48), which was consolidated as a reference in oncologic care in the country, providing assistance to approximately 116 thousand patients in a humanized manner, with elevated technical quality and developing research and educational activities in all fields related to oncology.

Lucy Montoro Rehabilitation Institute (IRLM) (page 51), designed with the purpose of offering greater complexity care for people with incapacitating physical disabilities, via the treatment of integral and integrated rehab, with a technological structure and qualified personnel in diagnostic and therapeutic resources.

The **USP University Hospital (HU-USP)** (page 46), a community hospital-school, inaugurated in 1981 within the University City, which operates in partnership with FMUSP, and has the purpose of promoting education, research and extension of services to the community.

Samuel Barnsley Pessoa School Health Center (CSE Butantã) (page 46), faculty-care unit of FMUSP, under the responsibility of the Departments of Preventive Medicine, Pediatrics, Medical Clinic, and FOFITO, focused on education and research in the primary care area and the assistance to the population of Butantã, in the west side of the city of São Paulo.

The **Tropical Medicine institute (IMT-FMUSP)**, reincorporated to FMUSP in 2019, which is dedicated to research, education, and assistance in the tropical diseases field, standing as the only one of its kind in the State of São Paulo. In 2020, IMT assumed the protagonism during the pandemic, presenting the sequencing of the new coronavirus in 48 hours, in addition to the identification of the new strains.

Death Verification Service of the Capital (SVOC), body binded to FMUSP dedicated to clarifying the causa mortis in deaths of poorly defined diseases or with no medical assistance, occurred in the city of São Paulo.

The USP Medical School

FMUSP is one of the largest medical-scientific research centers in the country, with an expressive intellectual production.



Facade of the Faculdade de Medicina da USP

The USP Medical School is responsible for education, scientific production, and extension of the service to the community, offering 180 slots annually to the incoming students of the Medical School Graduation course, and another 25 slots in each of the Speech Therapy, Physical Therapy, and Occupational Therapy courses. The FMUSP Stricto Sensu Post-Graduation is composed of 27 programs at the Academic Master's, Professional Master's, and Doctorate levels. FMUSP's Medical Residency, a *latu sensu* Post Graduation modality, characterized by learning in services, currently includes 54 training programs and is organized by the Medical Residency Commission (COREME). In addition, courses of Uni- and Multiprofessional Specialization and residency courses, Professionalizing Practice, and dissemination courses are offered by the Commission of University Culture and Extension (CCEX).

FMUSP has 17 departments, as follows: Cardiopneumology, Surgery; Medical Clinic; Dermatology; Physiotherapy, Speech Therapy and Occupational Therapy (FOFITO); Gastroenterology; Legal Medicine, Medical Ethics, Social and Occupational Medicine; Preventive Medicine; Infectious and Parasitic Diseases; Neurology;

Obstetrics and Gynecology; Ophthalmology and Otorhinolaryngology; Orthopedics and Traumatology; Pathology; Pediatrics; Psychiatry; and Radiology and Oncology. The Inter-department Centers and the partnership with USP's University Hospital also comprise the structure of the Medical School.

The average is 1,300 scientific papers published per year. It has the largest hospital of Latin America - the Clinics Hospital.

FMUSP is one of the largest medical scientific research centers in the country, associated to 66 Medical Investigation Labs, the LIMs, with 230 research groups and an expressive intellectual production.

The College works in partnership with the University Hospital - HU and has the Butantã School Health Center as the specialized FMUSP faculty-care unit specialized in primary health care.

It has more than one century of excellence in education and international recognition. In 2015 the Medical Winter Schools was implemented, receiving students from universities of many countries. The Faculdade de Medicina da Universidade de São Paulo constantly seeks to

develop and promote excellence in education and research.

Due to the multiplicity of bonds of the FMUSP-HC complex researchers, the institution developed a capturing system for their scientific production, called the intellectual Production Observatory (OPI). This system enables obtaining reports based on the name of the researcher, the institutional bond, the binded laboratory or the research group. Since 2012, the data periodically updated and certified by the FMUSP Library and Documentation Service are made available at the website <http://observatorio.fm.usp.br>.

In 2021, the information technology applied to academic life created auxiliary tools to optimize the time, expand knowledge and facilitate interaction between people. More than ever, in times of home office and distance learning, professors, students, and collaborators depend on digital tools.

In regard to distance learning, the use of the GoogleClassroom platform and the lending, jointly with CEDEM, of Chromebooks to the students that did not have the equipment at home were both improved. For the administrative areas, remote access to the systems was created, within the security criteria defined.

Among other recent actions are the development of a new management system of the Pro-Student Room; the acquisition of data connectivity equipment, integrating research labs with high traffic demand; profound changes to the Wi-Fi access system, and higher security; and the readjustment of the electric infrastructure of FMUSP's Data Center.

We can also mention the replacement of work stations of the school's didactic spaces and meeting rooms; the introduction of the access control system and the monitoring system, elevating the physical and property security level at FMUSP facilities; the development of a mobile application for CCEX-FMUSP information; and the acquisition of a data server for the management and digital storage of histological slides, for the classes at FMUSP's IT labs.

At FMUSP, the students of the Graduation courses in Medicine, Physical Therapy, Speech Therapy, and Occupational Therapy count on the Integrated Aid Service of the Student Support Center (NAE), which offers qualified listening and integral attention with the purpose of providing more resoluteness to institutional actions and receptiveness to students.

With social distancing established in result of the coronavirus pandemic, health, in many aspects, including emotionally, has become more vulnerable. For those students that had their academic performance impacted or doubts as to

their permanence in the course, FMUSP maintains the Integrated Aid Service of the NAE. NAE also seeks to promote health and the sense of belonging among students.

In 2021, the Women in Science Award - 2020 Highlights was granted to 10 researchers of Universidade de São Paulo (USP) that stood out last year with studies on the coronavirus, whereas five among them were FMUSP professors.

In the month of August, FMUSP instated the Scientific Dissemination Center of the FMUSP Research Commission (CDC). It was conceived, with the support from FAPESP and the FM/HCFMUSP System, to specifically handle the disclosure of the Institution's research to the press, foment scientific debate before the general public, and demonstrate the dimension of what is produced in terms of science and research within HCFMUSP.

On March 15th, 2021, the Ester Sabino Award for Women Scientists of the State of São Paulo was launched. The award, which aims to recognize women who have significantly contributed to science, has two categories: one dedicated to senior scientists and another to young researchers.

The expectation is that the award be carried out every year, always on February 11th—date when the International Day of Women and Girls in Science is celebrated since 2016, conceived by the United Nations and by Unesco in order to encourage women's participation in scientific careers.

It was not by chance that Prof. Dr. Ester Sabino was chosen to name the new award. In addition to her contribution to research in the area of hemopathies and infectology, she coordinates the team that was involved in the identification of the genome sequencing for the first case of COVID-19 in Brazil, in just two days—and in the 24-hour sequencing with the sample from the second case. The achievement was possible, according to her, thanks to the organization of the team work, seeing as the technology exists since the ebola epidemic in Africa, in 2013.

One of activity fields most affected by the COVID-19 pandemic in the universities was internationalization. The largest impacts were in the interruption of mobility—students coming and going to and from the institutions—and in the bureaucratic and postal proceedings that involve agreements between universities.

Despite the impediment to that flow, the Commission of Foreign Relations (CRInt) of FMUSP developed several activities after the pandemic outbreak. Among CRInt's initiatives are the creation of the Student Leadership Initiative (ASLI), that aims to encourage student leaders to share their experiences with virtual education in medicine.

Another positive point was the greater participation of foreign professors on postgraduate thesis boards and teaching on-line courses. The virtual environment facilitated those excellent professionals be able to dedicate themselves to those activities, not to mention the cost reduction for the institution with tickets and stays.

The students involved in scientific research and post-graduation, however, found themselves before a novelty that brought many lessons. Many needed to change their line of research to directly contribute to the battle against COVID-19. An intense and rare learning event.

Continuing a series of encounters to talk about the paths of Universidade de São Paulo (USP) and receive the academic leaderships that participated in the electoral process to command the university in the next four-year term (2022-2025), on 10/21/2021 the "USP 2022, Challenges and Opportunity" event took place at FMUSP.

In October 2021, a list with the 100 thousand most influent researchers in the world was released in the scientific review Public Library of Science (PLOS) Biology, from the publisher Elsevier, and therein are several FMUSP professors, a total of 812 Brazilians cited.

To support the study, updated analyses are performed with information from Scopus, the largest data base of briefs and citations of peer-reviewed literature. The final classification is separated into two perspectives, one in which the professionals and evaluated by the impact of citations throughout their careers, considering the end of 2020, and the other by references in the last year's period. The ranking is published annually and is currently in its third edition. It is drafted by a group of researchers from Stanford University, in the United States.

After almost eight years of existence, FMUSP's Vegetable Garden was officially recognized as one of the Urban Vegetable Gardens of the municipality of São Paulo. The certification was granted on March 8th, 2021, crowning the volunteer work by the members of the FMUSP, HCFMUSP community, besides external volunteers.

The activities at the FMUSP Vegetable Garden are developed at the School's terrace, next to the

Administration Building, and they are dedicated to the production of healthy foods, agroecology, and cultivation of Non-Conventional Food Plants. The goal of such type of plantation is choosing underused sites in buildings and lands to cultivate sustainable fruits and vegetables, demonstrating the possibility of growing foods in the city.

In 2020, those activities were extended to FFM's property in Pacaembu. The site, which once hosted the Pacaembuzinho farm, then later belonged to the Holy House of Mercy Hospital, then a Youth Detention center, has been under FFM management since 1998. With the garden, today it experiences a significant symbolic redemption of its initial vocation of producing foods. The experiment is an example of food production for both the city and the country, whose population faces a major challenge with hunger, aggravated by the rise of poverty in the post pandemic period.

In general, urban gardening is associated to benefits such as accessibility to fresh and toxin-free foods, alternative income sources, and reduction of the dependency of foods transported from afar, boosting cities' resilience at times of food insecurity as we endure in the present.

On November 17th, 2021, we began to supply the ICHC kitchen with spices, herbs, and vegetables with an agroecologic base grown at FMUSP's urban garden. The initiative was developed in November 2020 by a group comprised by collaborators from FMUSP's garden and the Kairos Institute, ICHC nutritionists, volunteers, and neighbors in the FFM area in Pacaembu.

On December 2nd, 2021, the 2030 Strategic Planning Meeting of the Academic Health System was held, where data and information were presented in regard to the activities performed during that past decade in the FM/HCFMUSP Health Academic System as a whole, and discussions and dynamic sessions were carried out to draft the targets, processes, and guidelines to conduct the conglomerate's management until the year 2030.

In 2021, FFM contributed effectively in expediting bureaucratic processes and, mainly, in the implementation of projects and programs that, in government administration, are more morose.

The FMUSP Clinics Hospital

During the pandemic, the HC answered for 20.5% of the ICU daily hospitalizations for COVID-19 in the city of São Paulo, in addition to having received critical patients sent by 165 municipalities.



The HCFMUSP Complex is concentrated in the Pinheiros district, in São Paulo, but counts on many other auxiliary units.

In 77 years of activities, celebrated on April 19th, 2021, HCFMUSP has earned and sustained a prominent position in Brazilian Medicine. Whether through its pillars—health care, education, and research— or through its pioneering and innovation mechanisms. The latter has also become the fourth pillar of the Institution.

During the pandemic, the HC answered for 20.5% of the ICU daily hospitalizations for COVID-19 in the city of São Paulo, in addition to having received critical patients sent by 165 municipalities. Despite the many challenges endured, the institution has also stood out in many fronts, such as innovation, research, education, and medical care. For illustration purposes, more than 670 articles were published on the disease in that period.

Over a year's time, a quite critical period of the COVID-19 pandemic in the country, HCFMUSP was required to reinvent itself. The dedication of the workforce of the largest hospital complex in Latin

America, made up of 22 thousand collaborators, placed the Institution yet again on the podium as an international reference.

The COVID-19 pandemic accelerated many projects focused on digital health and Artificial Intelligence, leaving a potential legacy for the HCFMUSP Complex innovation hub. With each day of intense experience and resilience, the HC put everything designed into practice towards a promising future. Technological improvements were executed in all of the hospital's sectors—from personnel management to beds in the Intensive Care Units (ICUs). Many were the advances and achievements. Among those examples: for the in-house proceedings, actions such as the SP No Paper were implemented in the State Administration documents emission, the evaluation processes became electronically performed; the access ratchets to the buildings were expanded to all Institutes, ensuring greater safety and identification of users.

In the medical assistance realm, HC developed the Patient Portal app with countless functionalities that facilitate patients' routine; and the Central Institute ICU (ICHU) received three electronic dispensers capable of ensuring traceability, use control, and a faster and safer drug manipulation and administration.

The Technological Innovation Hub (InovaHC) was strengthened with the many incentive and partnership projects, with startups seeking innovative health solutions while connecting researchers, entrepreneurs, students, and resources.

A partnership settled between HCFMUSP and the government of the United Kingdom will bring R\$ 100 million in investments for the three years to come, which shall be invested in digital health and telemedicine. The main targets are: 40% of patient assistance at the HCFMUSP to be done remotely until the end of 2022; qualify 100% of the HC residents in telemedicine; perform 100 thousand assistances via teleinterappointments and a second medical opinion per year until the end of 2023; implement 10 lines of digital care within the complex; aid 10 thousand HC and network physicians in making medical decisions and imaging exam interpretations via artificial intelligence systems; and follow up 30 thousand patients via remote monitoring by the end of 2023.

The targets are part of the Digital Health Plan, a collaboration part of the Better Health Programme (BHP), a cooperation program between United Kingdom and Brazil taking place over two years, 2021 and 2022. The goal is to develop digital health solutions that increase efficiency and quality in medical assistance and follow up of HC patients, and which may be implemented over the entire SUS network in the country.

The digital Health Plan started with the selection of initiatives in digital health within the HCFMUSP complex institutions. Twenty projects were selected involving teleappointments, digitalization of patient assistance stages, remote visits, teleconsultancy, telemonitoring of chronic patients and health professionals' training for telemedicine.

On January 17th, 2021, the HCFMUSP added another landmark to its presence in the history of Brazilian Medicine by becoming the stage of the first vaccinations against COVID-19 in the country. The global pandemic has contaminated a total of 95 million people over the last 12 months, leading 2 million patients to their death.

Approved by Anvisa with an emergency status, the Butantan Institute's vaccine was applied on Mônica Calazans, age 54, a nurse at the ICU of the Emílio Ribas Infectology Institute. Thereafter, other

112 health professionals from HCFMUSP—who, like Mônica, volunteered for phase of the vaccine trials—received the doses. Vaccination was performed in the Rebouças Convention Center, where a mega-operation was staged, in an area of 1,000 square meters with 30 stations to immunize all 30 thousand HCFMUSP employees.

On 2/22/2021 the launching event of the first edition of In.cube was held, a program in support to InovaHC and SDE-SP's innovation for the generation of new businesses—products, processes, and services—in the health field and with social impact, derived from tech-based research and projects carried out within the HCFMUSP Complex. The methodology created and tested at In.cube shall become a cornerstone to consolidate public policies on innovation, science, and technology in the State, aspiring to be replicated by other science and technology and research institutes in São Paulo.

HCFMUSP is leading the first study that has the purpose of assessing the reaction to the vaccine against COVID-19 in immunosuppressed patients (rheumatic diseases and people who live with HIV/AIDS) to determine an immune response. The first stage was concluded on February 10th, 2021, with nearly 2 thousand people vaccinated, with approximately 1,500 patients and 500 volunteers of the control group.

The importance of the study is reinforced by a recent epidemiological analysis of 252,119 hospitalized patients in Brazil with COVID-19 performed by the same group, which observed that patients with lupus are 73% more likely to progress to death than those without it.

In March/2021, HCFMUSP installed more than 160 ICU and infirmary beds to treat COVID-19 patients in partnership with the private sector, distributed in the ICHC and HAS. Thus, over the month of April, HCFMUSP counted on 600 beds exclusively for severe COVID-19 cases, via the agreement with SES-SP.

HCFMUSP took emergency measures with aim to ensure assistance to the cases arriving via CROSS - Health Service Offer Regulation Center and CRUE - Urgency and Emergency Regulation Center, which increased exponentially. To that end, they redistributed hospital bed destinations throughout the entire complex, according to the availability and with human resources capability.

In March 2020, HCFMUSP had already ran a mega-operation by releasing all ICHC beds to provide COVID-19 patient care. It thus became a reference in assistance for the critical cases of the disease in São Paulo. That initiative enabled the state public health network to gain time to structure itself and expand the number of beds via SUS.

In October/2021, HCFMUSP had six of their specialty services cited among the top 200 worldwide, according to an annual survey by the World's Best Specialized Hospitals 2022, from Newsweek magazine. Among the nine categories encompassed by the publication, HCFMUSP was mentioned among the 50 first ranked and the best in Latin America in the following specialties: neurology, with 22nd place, cardiology, in 24th, and heart surgery, in 38th. The hospital also appears among the world's 200 best in orthopedics (52nd place), neurosurgery (73rd), and oncology (99th).

HCFMUSP was contemplated, in December 2021, by the Health Leaders 2021 award, in the category Hospital R&D (research and development). In that same month, the CCR was awarded the "Golden Alligator", with the Caio Award 2021, in the category "Best Large-Scale Convention Center in the Country". The award has the objective of recognizing the work of companies and professionals from the Brazilian Events and Tourism Industry.

In March/2021, EEP obtained MEC's authorization to offer distance post graduation courses. The School currently offers technical courses, distance learning, updating and enhancement courses, trainings with realistic simulation and virtual reality, in addition to in-person specialization courses in various areas, such as Medicine, Nursing, Physical Therapy, Psychology, among others. The authorization represents another achievement for the EEP, which, over the past decade, was consolidated as a hub of excellence in health education.

In 2021, EEP, in partnership with GCIH, provided technical advisories for companies from several segments with the purpose of ensuring a safe resumption of activities during the post COVID-19 pandemic period. The team responsible for the consultancy is composed of highly qualified professionals, references in their fields of work and members of the Coronavirus Contingency Committee of the State of São Paulo.

The consultancy is customized, aligned to the background of each organization assisted, and focused on understanding the needs, identifying solutions, and suggesting actions for improvement

through methodologies that promote creative behaviors. It includes the development and implementation of projects in order to establish diagnoses, improve management practices, optimize resources and aid decision making.

In its general scope, the work includes technical visits, review, creation and implementation of protocols, recommendations for public assistance, guidance for signaling at the facilities, development of customized products, in addition to the qualification of collaborators, clients, and third parties involved.

The ninth edition of the Shining Eyes Workshop, promoted by HCFMUSP's Superior Administration, was hosted in InRad's grand auditorium, on December 3rd, 2021—one day after the Strategic Planning Meeting 2030 of the FM/HCFMUSP Academic Health System, which jointly defined the guidelines and goals to improve and align the Institutions' management.

The Shining Eyes Workshop assessed the performance and improvement of the assistance and management model of HCFMUSP, also presenting results and incorporating concepts defined in the Strategic Planning Meeting 2030.

The Shining Eyes Workshop also paid homage to the Institutes and Units of the HCFMUSP Complex for their resilience, strength, and corporate commitment in favor of society as a whole during the COVID-19 pandemic. The following were acknowledged: Central Institute, Heart Institute, Children and Adolescents Institute, Institute of Psychiatry, Institute of Orthopedics and Traumatology, Institute of Radiology, Cancer Institute, Institute of Physical Medicine and Rehabilitation, Auxiliary Hospital of Suzano, Administration Building, Collaborator Care Center, Fundação Faculdade de Medicina, and Fundação Zerbini.

In 2021, the HCFMUSP team remained relying on FFM's support in several confrontation actions to ensure the functioning and care to patients already hospitalized and the incoming ill, as well as the safety of their more than 340 direct collaborators and more than 11.9 thousand professionals allocated to assistance and research projects.

Integral Health Care Agreement for SUS Patients

The access and assistance to SUS throughout HCFMUSP (except InCor) are ensured by FFM, via the allocation of human and financial resources of the System to the hospital itself.

Working behind FMUSP and its Clinics Hospital (HCFMUSP) is the Fundação Faculdade de Medicina (FFM), founded by a group of professors 35 years ago to support- education and research at FMUSP and in its Clinics Hospital. Also, FFM has a key role in developing integral health care in the FM-HCMUSP System in its several Institutes and Units, seeing as it ensures the deprived population with continue to have medical-hospital care via the Public Health System (SUS).

Since 1988, FFM is responsible for the Agreement signed with HCFMUSP and the State Health Secretariat of São Paulo, focused on providing free care to SUS patients. The Agreement also ensures the performance of special procedures, such as transplants of different organs, various implants, and other high-complexity procedures.

The access and assistance to SUS throughout HCFMUSP (except InCor) are ensured by FFM, via the allocation of human and financial resources of the System to the hospital itself, thus enabling HCFMUSP to reach an average SUS care (ambulatory and hospitalization) percentage of 90%. On average, before the COVID-19 pandemic, approximately 3 million patients were assisted every year at the HCFMUSP Complex, and submitted to 10 million ambulatory procedures. In 2021, the number of procedures remained at the mark of 9 million.

The Agreements signed, within the scope of SUS, between SES, HCFMUSP and FFM, bear their unique characteristics, with a predominant differential due to HCFMUSP's certification as a Hospital of Education, where all production, actions and health services, within the scope of SUS, should constitute a field of practice for education, research and technological incorporation.

The rules and policies for the application of resources from that agreement are dynamically instituted by the several directive bodies of HCFMUSP (Deliberative Council, Board Councils, Executive Boards and Superintendency) and from FFM (Curator Council), which continuously monitor the results achieved, especially in regards to the funding of medical-hospital assistance.

HCFMUSP and FFM'S operation is shared, in the management and in services to SUS patients,

and derives from the expressed authorization from the State Executive Authority, duly formalized in the proper legal instruments.

In order to achieve their objectives, FFM currently employs 11,949 professionals (December/2021), of which more than 90% are dedicated directly to the assistance/care of SUS patients.

The labor contracts signed by FFM are very distinct from the contracts of the public servers at HCFMUSP, with no incompatibilities or subordination.

The professionals' hiring process by FFM has the purpose of meeting the SUS patient demand of HCFMUSP, and the difficulties inherent to the Government Authority in creating job posts. The financial resources used for salary payments derive, exclusively, from the consideration of their activities in the health sector.

In addition, on their behalf they acquire medication, inputs, consumption material, equipment, furniture, utensils and others, fully dedicated to the assistance and care of SUS patients. It is worth noting that FFM does not undertake to manage HCFMUSP's budgetary resources nor do they receive any resource from that state autarchy.

CEBAS is granted by the Health Department to non-profit private-law legal entities that are recognized as a Social Welfare Charitable Entity for the provision of services in the Health Sector. A CEBAS certification ensures the exemption of social security contributions and the signing of agreements with the public authority, among others. FFM has such title since 1989 and, on 12/15/2021, its grant was approved until 12/15/2024.

Because of it, FFM has access to tax immunity and social security contributions, providing the FMUSP-HC System with a tax relief of approximately R\$ 204 million annually, resources which are fully invested in the FMUSP-HC System in the way of expenditures, hiring human resources, acquisition of medical hospital devices, upgrades to the technology park, maintenance, renovations, expansions and other initiatives that ultimately benefit the Public Health System - SUS patient.

With that, there are more resources to invest in state-of-the-art equipment, trainings, scholarships, research funding, physical suitability of the spaces, acquisition of medications, hiring professionals allocated to research projects, among many other demands that are daily required by the FMUSP-HC System's structure, the largest center of

education, research and health care in Latin America, where 50 thousand people circulate every day.

The **number of assistances** performed, in the past two years, by HCFMUSP and by FFM, in joint action, is demonstrated in the two charts below:

2021 (*)							
ASSISTANCE INDICATORS OF THE HCFMUSP INSTITUTES AND AUXILIARY HOSPITALS (EXCEPT INCOR, IMREA AND ICESP)							
Institute / Hospitals	Admissions	Surgeries	Urgent and emergency attention	Ambulatory Appointments	Imaging Exams	Lab Exams	Total per Institute / Hospitals
ICHC	19,567	12,612	32,717	495,497	22,161	7,049,024	7,631,578
ICr	5,621	1,942	10,933	61,349	32,459	764,437	876,741
IOT	3,490	3,321	13,598	38,718	47,346	132,988	239,461
IPq	877	56	-	58,358	3,501	-	62,792
InRad	-	-	-	3,677	227,268	-	230,945
DHAS	128	-	-	20	1,258	3,190	4,596
DHAC (in construction works)	-	-	-	-	-	-	-
Total	29,683	17,931	57,248	657,619	333,993	7,949,639	9,046,113

(*) Due to the restrictions imposed by the COVID-19 pandemic, there was a reduction in the care indicators of the Institutes.

2020 (*)							
ASSISTANCE INDICATORS OF THE HCFMUSP INSTITUTES AND AUXILIARY HOSPITALS (EXCEPT INCOR, IMREA AND ICESP)							
Institute / Hospitals	Admissions	Surgeries	Urgent and emergency attention	Ambulatory Appointments	Imaging Exams	Lab Exams	Total per Institute / Hospitals
ICHC	18,110	10,685	47,248	397,873	58,675	5,949,053	6,481,644
ICr	5,138	1,832	7,988	49,023	32,668	686,988	783,637
IOT	3,260	3,365	12,051	30,768	51,738	191,476	292,658
IPq	1,744	797	-	47,128	10,291	-	59,960
InRad	-	-	-	2,718	179,329	-	182,047
DHAS	238	-	-	107	802	577	1,724
DHAC (in construction works)	-	-	-	-	-	-	-
Total	28,490	16,679	67,287	527,617	333,503	6,828,094	7,801,670

(*) Due to the restrictions imposed by the COVID-19 pandemic, there was a reduction in the care indicators of the Institutes.

Special Procedures

In addition to conventional care and admissions, FFM and HCFMUSP perform special procedures, such as transplants and implants, high complexity procedures, and pharmaceutical assistance to SUS patients.

Transplants and Implants

Pursuant to the objective of the Integral Health Care to SUS Patients Agreement, signed between FFM, HCFMUSP (Members) and SES-SP, HCFMUSP and FFM jointly perform transplant and implant procedures that are very important for the

population and considered by the Health Department as strategic for SUS care.

The quantity of transplant and implant procedures performed gratuitously in the past couple of years was the following:

STRATEGIC PROCEDURES - TRANSPLANTS AND IMPLANTS		
Description	Quantity	
	2020 (*)	2021 (*)
Cochlear implant	51	72
Partial hepatectomy for transplant (live donor)	29	41
Unilateral nephroureterectomy for transplant	18	4
Allogeneic hematopoietic stem cell transplantation of bone marrow - relative	14	26
Allogeneic hematopoietic stem cell transplantation of bone marrow - unrelated	11	10
Allogeneic hematopoietic stem cell transplantation of umbilical cord blood - unrelated	3	-
Allogeneic transplant of peripheral blood hematopoietic stem cells - related	11	23
Allogeneic transplant of peripheral blood hematopoietic stem cells - not related	1	2
Autogeneic transplant of bone marrow hematopoietic stem cells	13	11
Autogeneic transplant of peripheral blood hematopoietic stem cells	56	55
Cornea transplant	55	61
Cornea transplant (in combined surgeries)	8	4
Cornea transplant (in reoperations)	13	3
Sclera transplant	-	-
Liver transplant (deceased donor organ)	153	170
Liver transplant (living donor organ)	28	41
Pancreas transplant	-	1
Kidney transplant (deceased donor organ)	119	124
Kidney transplant (living donor organ)	28	5
Simultaneous pancreas and kidney transplant	8	8
Total	619	661

(*) Due to the restrictions imposed by the COVID-19 pandemic in 2020 and 2021, there was a reduction in the quantities of most transplants and implants.

High Complexity Procedures

Pursuant to the objective of the Integral Health Care to SUS Patients Agreement, signed between FFM and HCFMUSP (Accredited) and SES-SP, HCFMUSP, and FFM jointly perform High-

Complexity Ambulatory Procedures, whose production in the last two years is demonstrated in the chart below:

AMBULATORY DEMONSTRATION AUTHORIZATION FOR HIGH COMPLEXITY PROCEDURES - APAC		
Description	Quantity	
	2020 (*)	2021 (*)
Diagnosis in Clinical Laboratory	32,221	32,327
Radiology Diagnosis	72	68
Diagnosis by Tomography	1,461	1,684
Ultrasonography	28	40
Diagnostic Methods in Specialties	19,399	23,198
Appointments / Assistances / Follow-ups	5,435	6,095
Treatment in Oncology	6,053	5,525
Treatment in Nephrology	20,851	20,062
Dental Treatments	15	27
Specialized Therapies	808	996
Upper Respiratory Tracts, Head / Neck Surgery	0	0
Vision System Surgery	2,670	2,949
Genitourinary System Surgery	7	95
Reparation Surgery	400	260
Surgeries in Nephrology	74	83
Small Surgery and Surgery of the Skin, Subcutaneous Tissue and Mucous Membrane	0	0
Collection and Exams for Organ Donation Purposes	16,565	17,971
Follow-up and Post-Transplant Complications	10,389	12,953
OPMs Not Related to the Surgical Act	4,084	4,713
OPMs Related to the Surgical Act	787	729
Tissue Processing for Transplants	243	124
Clinical Treatments (other specialties)	1,389	3,235
Total	122,951	133,134

(*) Due to the restrictions imposed by the COVID-19 pandemic in 2020 and 2021, there was a reduction in the quantities of high-complexity procedures

Pursuant to the objectives of the Integral Health for SUS Patients Agreement, signed between FFM, HCFMUSP and SES-SP, pharmaceutical assistance is determinant for the solvability in health attention and services.

The medication supply guarantee of the Specialized Component of Pharmaceutical Assistance (CEAF) is key for maintaining patient treatment, and a complement for the complex and high-cost medical-hospital procedures, such as transplants, for example.

In 2021, 40,623,567 medication units from CEAF were distributed, representing BRL 121,081,798.48. The control of CEAF medication distribution and the emission of PACs are carried out through the Hospital Information System - SIGH Prodesp.

In 2021, the HCFMUSP Pharmacy fulfilled 752,767 ambulatory prescriptions, an average of 62,731/month. There is also a medication home delivery service that, since 2013, became free of charge. Around 57% of the outpatients receive their medication at home, with no cost.

Located on the 8th floor of ICHC's PAMB, HCFMUSP has the largest hospital pharmacy in Brazil. Founded in the same year as HCFMUSP, 1944, today 172 collaborators work there, of which 69 are pharmacists and pharmaceutical residents.

Beyond a mere medication distribution center, a true factory functions there, where medications that do not exist in the market are produced, i.e. those that do not attract commercial interest. Different dilutions and dosages than those available in the market are also prepared, in accordance with the patient's requirements, or compositions that are different from traditional ones.

In 2021, medication production generated savings in the amount of BRL 8,288,168.13. A total of 51 types of standardized drugs were produced, more than 10.3 million units, and also 367 formulas (327,739 units) were manipulated in a customized, individualized manner, to fulfill medical prescriptions and patients' needs. The pharmacy also distributed 18 special medications, produced for research protocols, in a total of 31,664 units. In addition to medication produced internally, 345 different medications were acquired and unitized, totaling 2 million units to fulfill admitted patients' prescriptions.

In 2021, we highlight the improvement cycles for the Pharmaceutical Assistance processes with aim to resume activities after the mobilization to face the COVID-19 Pandemic, such as:

- a. Implementation of the pilot of the Vancomycin use Management protocol at ICU 11DN;
- b. Restructuring of the registry instrument of pharmaceutical interventions with the use of RedCap;
- c. Drafting the operational procedure to register allergies of the patient's electronic medical history - MVPEP;
- d. Structuring the communication channel in the Patient Portal with the inclusion of the specific "My Prescriptions" and "My Schedules" functionalities of the Ambulatory Pharmacy;
- e. Implementation of the pilot project for Telepharmacy;
- f. Drafting the Strategic Planning of the residency Program.

The Institutes, Auxiliary Hospitals, and Specialized Health Units of the FM/HCFMUSP System

In November 2020, HCFMUSP occupied the first place in the HospiRank 2020 as the best equipped hospital in Brazil and Latin America.



The recently erected building, in the 1940s



A homage to the 20 thousand current employees of HCFMUSP

HCFMUSP ARCHIVE

On April 19th, 1944, the Clinics Hospital of the USP Medical School was inaugurated. Its reinforced cement building construction started in 1928 and was ready six years later, resulting in a physical area of 4.6 thousand square meters, distributed among 11 floors, with a capacity for 1.2 thousand beds, 207 infirmaries, 17 surgery rooms, 106 rooms with one to two beds, 125 restroom sets, and 600 other dependencies.

Today there are more than 20 thousand employees, 2.7 thousand infirmary and Intensive Care Unit (ICU) beds divided among its eight Institutes. It provides care for approximately 2.5 million patients in the three assistance levels and develops around 6% of all Brazilian research in the health and biomedical sciences fields.

As an Academic Health System, it is composed of institutes specialized in high complexity care (tertiary/quaternary care - HCFMUSP), a hospital with medium complexity (secondary attention - HU-USP), auxiliary hospitals, units specialized in the integral care of patients that carry HIV/Aids, School Care Center and Basic Health Units (primary attention - CSE Butantã, DHAC, DHAS, Aids House), in addition to the IMT and the SVOC, both associated to FMUSP.

The 77th anniversary arrives with the consolidation of the capability to face challenges

and adapt to the requirements of the moment— which has been its trademark since the beginning. Amid the COVID-19 pandemic, the recognitions also continued. In November 2020, HCFMUSP occupied the first place in the HospiRank 2020 as the best equipped hospital in Brazil and Latin America, according to Global Health Intelligence.

The rank exists since 2017 and seeks to identify hospitals in Latin America that acquire high-tech equipment. The medical institutions are also evaluated as to their infrastructure, installations, resources to perform diagnoses and surgical procedures, capacity to accommodate women in labor, and equipment to deal with cancer and high-risk patients, including those infected with COVID-19.

As a foundation to support the USP Medical School and its Clinics Hospital, FFM celebrates that new mark, ever aware of its statutory goals of supporting education, research, and integral health care at FMUSP and in the Clinics Hospital of FMUSP (HCFMUSP), in addition to the preservation of the heritage of the Oswaldo Cruz Academic Center (CAOC), of FMUSP.

The performance, in 2021, of the many Institutes (except ICESP (page 48) and InCor), Auxiliary Hospitals of the HCFMUSP and Specialized Units is presented in the following pages.

Institutional Data:

Foundation: 1944

Constructed Area: 178.5 thousand m²

Accreditations: ONA II, CAP, PALC, ISO 9001, OHSAS 18001, ISO 14001, Elderly Friendly Hospital Seal, SINASC Seal, Environment friendly, International Certification for Distinctive Assisted Infusion Therapy

Care indicators:

Admissions: 19,567

Surgeries: 12,612

Urgent and emergency attention: 32,717

Outpatient appointments: 495,497

Imaging Exams: 22,161

Lab Exams: 7,049,024

Inaugurated in 1944, the **Central Institute (ICHC)** was the first HCFMUSP building to be erected and gathers most of the medical and surgical clinic specialties. It encompasses the Referenced Emergency Unit, with assistance for high-complexity cases; the Ambulatories Building (PAMB), which offers treatment to outpatients and in which the largest surgical center and the Central Lab Division are located, the first public service lab in Brazil to receive the ISO 9002 certificate.

In 2021, amid full confrontation with the COVID-19 pandemic, ICHC overcomes another stage of the certification process of the National Accreditation Organization (ONA) by obtaining the homologation of the Recertification of Level 2 Accreditation - Full Accredited. The recognition was granted after a strict assessment by the Brazilian Institute of Excellence (IBES). The examiners remotely followed the maintenance and the continuity of the actions implemented by the areas, through the verification of compliance with the requirements of the Brazilian Accreditation Manual.

In 2021, the Education, Research, and Innovation in Surgery Lab (Lepic) was implemented, linked to the Division of Surgery of the Digestive System and Coloproctology, which fills some gaps in the enhancement of physicians, encompassing video laparoscopy and robotic surgery. The intentions are to enter yet more advanced processes with 5G connection and partnerships with startups.

In June/2021, a new bonding space was delivered for blood donors, Hematology patients, and collaborators that work in the HCFMUSP Complex. Located on the first floor of the PAMB, the

new environment is located next to the Clinics of Pro Blood, of the Day Hospital, and the Hematology Patients Ambulatory.

The area has 264m², occupied by long and linear wooden benches and dehydrated trees that, despite being natural, do not require water or light to sustain themselves. The bonding space proposes to offer a more humanized welcoming environment for blood donors, patients, and Hematology professionals during their hospital stays.



PRO BLOOD RELEASE

Colors, wood, plants, and lighting offer a more pleasant ambiance to the PAMB

The ICHC Humanization Work group, in partnership with the Patient Experience Work group, materialized in 2021 the Celebrate Life project that prompts smiles from hospitalized patients, the elderly in particular. Patients celebrating birthdays that day receive cupcakes prepared by the Metabolic Kitchen of the Nutrition Division, balloons, and a message of encouragement, in addition to a video call for the family to participate in the celebration with the traditional "Happy Birthday" song. The action intends to minimize suffering, strengthen empathy among the staff, and promote a positive experience for the patient, their family, and health professionals involved.

In 2021, neurologist and scientist Prof. Dr. Egberto Reis Barbosa, Head of the Movement Disorder Ambulatory of the ICHC, was revered for a brilliant contribution to the development and advancement of science, knowledge, and clinical care of Movement Disorders in Brazil, reaching the 'father status' in the history of national medicine, with a publication on the "Neuropsychiatry Files" journal, from the Brazilian Neurology Academy (accessed by the renowned Scientific Electronic Library Online, along with Prof. Dr. Luiz Augusto Franco, specialist from the Escola Paulista de Medicina).

In 2021, in a joint action with FFM, ICHC carried out 7,631,578 assistance procedures.

Institutional Data:

Foundation: 1952

Constructed Area: 22 thousand m²

Accreditations: ONA II

Care indicators:

Admissions: 877

Surgeries: 56

Outpatient appointments: 58,358

Imaging Exams: 3,501

Inaugurated in 1952, the **Institute of Psychiatry (IPq)** is a pioneer in the creation of specialized programs and services, encompassing all psychiatric disorders, in different stages of life. It has the only admission unit of the country specialized in children, with a functional neurosurgery service and an intensive care unit, standing as a Brazilian reference in the field.

The Institute of Psychiatry maintains its Full Accreditation Level (Level 2) by ONA, bestowing a position of prominence in quality among the psychiatric hospitals in the country.



IPq Facade

USP Imagens

The Neurosciences Lab of IPq started in 2021 an unprecedented study that uses artificial intelligence algorithms with the purpose of identifying the risk of developing severe mental disorders in young adults from 18 to 35. The project is a partnership with Wellcome Trust, an English institution that aids research.

The study group is within the volunteer prospecting phase. The requirements to participate in the study, which shall test the use of artificial intelligence to identify the risk of severe mental disorders in young adults are: male and female, from ages 18 to 35, without psychiatric symptoms, who have presented unusual experiences at a given time in their lives, such as hearing out-of-context

noises and/or voices, having the impression of seeing shadows, etc.

In 2021, The Interdisciplinary Neuromodulation Service (SIN) of IPq created positions for HCFMUSP Complex collaborators, between 18 to 65 years of age, that presented unipolar depression, for a new treatment modality with magnetic transcranial stimulation (TMS), consisting of the application of TMS during 4 weeks (between 5 and 10 sessions), each a 3-minute session. The patients shall have their MRI exam upon commencing the treatment, and at the end as well, when completing the number of sessions indicated.

All patients accepted shall receive TMS treatment. This new modality, with applications in 3-minute sessions, will be compared to the traditional session, which is 30 minutes long. Also, via MRI, they intend to observe the alterations and results produced. Volunteers with moderate severity depression, who are either being treated with antidepressants or not, have been admitted.

TMS is a technique that is noninvasive, painless, safe, and effective, already approved in Brazil for depression treatment. It consists in generating a potent and focused magnetic field, by means of a coil positioned over determined spots of the head, which may activate or deactivate regions of the brain, acting on the disease's mechanisms.

Studies increasingly point towards the benefits of art, in its different expressions, for physical, mental, and emotional well-being. At IPq, along with the activities traditionally developed like art therapy and artistic practices for patients, the "Stairs Space" was created in 2019, transforming the stairs of the IPq's south ward into an open gallery of artistic exhibitions, with works produced by collaborators and patients, highlighting and valuing talent.

In addition, the Stairs Space, which also has ambient music as an attraction, with classical music, jazz, and other rhythms, was conceived for people to feel stimulated while using the stairs, seeking changes in habits, and avoiding sedentary lifestyles, as part of the "IPq in shape" program.

In 2021, the plastic artist Bieto was invited to paint a mural on a wall, that was previously blank, of one of the Institute's halls. The artistic mural and a new photography exhibit, bringing different themes—from landscapes to automobiles—, were inaugurated on September 15th, 2021.

In 2021, in a joint action with FFM, IPq carried out 62,792 assistance procedures.

Institutional Data:

Foundation: 1953
 Constructed Area: 27.5 thousand m²
 Accreditations: ONA I

Care indicators:

Admissions: 3,490
 Surgeries: 3,321
 Urgent and emergency attention: 13,598
 Outpatient appointments: 38,718
 Imaging Exams: 47,346
 Lab Exams: 132,988

Inaugurated in 1953 to receive acute anterior polio cases, an epidemic in the city of São Paulo at the time, the **Institute of Orthopedics and Traumatology (IOT)** is among the largest orthopedics and traumatology hospitals of Latin America and among the top research centers in Brazil.

Today it is a reference in providing care to patients with orthopedic and traumatic affections, spinal cord lesions, limb reimplants, endoprostheses reconstruction or with a tissue bank in large tumor resections.

Outpatient and Inpatient assistance is performed at the IOT, in addition to assisting the more critical cases with support from the Referenced Emergency Unit.

Currently, the IOT occupies two buildings: the first with 10 floors and the second with four, totaling 25,000 m² of constructed area. Both are focused on the treatment of locomotor apparatus infirmities. The IOT also relies on seven specialty labs and a clinical staff of approximately 160 doctors, among which: orthopedists, residents in the specialty, and an in-house group of anesthesiologists. Also, part of the group are pediatricians, geriatricians, physiatrists, chest and plastic surgeons, urologists and cardiologists, who provide medical support to patients undergoing orthopedic treatment.

The Welcoming Project aims to guide and explain to patients regarding their surgery and treatment, thus improving communication towards more safety and comfort.

With visits suspended in the IOT during the COVID-19 pandemic, in September/2021 the

Remote Visit was implemented, initially in the 2nd B and 5th B infirmaries, an initiative that is part of the HCFMUSP Digital Health Program.

It aims to bring their family members closer, via a remote visit with a tablet, for patients who have no access to a cell phone or, due to health issues or limitation, are not able to use their phone by themselves. The family bond is hence maintained with the patients, providing humanized care to the patient during their hospitalization. The project staff receives theoretical and practical training to run the remote visit.



HCFMUSP

Remote Visit Project, implemented by the IOT

The Remote Visit began at ICHC in 2020, during the COVID-19 pandemic, due to the isolation of the hospitalized patients. At IOT, the initiative started in 2021, as an action of humanization to bring patients and family closer together via a remote visit to mitigate the suffering caused by the physical separation under the sanitary measures adopted.

Remote visits have methodology, flows, and rules for functioning and they observe the expert opinion of HCFMUSP's Bioethics Commission on the ethical aspects of the video call visits between family and patients.

In 2021, in a joint action with FFM, IOT carried out **239,461 medical assistance procedures**.

Institutional Data:

Foundation: 1976

Constructed Area: 23 thousand m²

Accreditations: ONA II

Care indicators:

Admissions: 5,621

Surgeries: 1,942

Urgent and emergency attention: 10,933

Outpatient appointments: 61,349

Imaging Exams: 32,459

Lab Exams: 764,437

The **Child and Adolescent Institute (ICr)**, inaugurated in 1976, has been prepared to provide care for children and adolescents with high-complexity diseases. It became established as a model in the country and is recognized by the Health Department as a National Reference Center for Children's Health. In 2016, its name was changed to Child and Adolescent Institute.

Located in a building of their own, the Child Cancer Treatment Institute (ITACI) (page 46), associated to the ICr, stands out in the areas of Onco-Hematology, stem cell and hematopoietic transplantation.

In October 2021 the ICr patients, while having clinical analysis exams, were able to enjoy a new and fun lab space, based on the popular cartoon "Masha and the Bear".



Russian characters Masha and the Bear decorate the ICr

The 300 square meter space, composed of the reception, waiting room, and seven collection box rooms, was fully decorated with the children's characters stickers to offer a playful and more humanized experience. On average, the service performs 60 thousand exams and assists 2 thousand SUS patients every month.

The ambiance of the space is part of the Child Friendly Diagnosis Program, which aims to offer a pediatric practice that employs as many benefits possible to the patient with the lowest current and

future risks, sparing pediatric patients from physical suffering and psychological grievances.

Unprecedented study carried out in 2021 by a group of ICr researchers suggests the induction of antibodies against COVID-19 in mother's milk, even four months after the mother is submitted to vaccination against the coronavirus. The research included the voluntary participation of 20 collaborators of the HCFMUSP Complex immunized during a collective effort made between January and February 2021. The average age of the participants is 35 years and an average period of 11 months of breast-feeding.

The results reinforce the importance of vaccines to contain the disease and also prove the benefits of breast-feeding, which may also be done during the infection period, provided all precautions are taken to prevent mother-child contagion.

The samples were submitted to testing to detect the presence of immunoglobulin A (IgA) antibodies in immunoassay (ELISA), the same used in an Israeli study that verified the presence of the same antibody in lactating women that received the Pfizer vaccine.

During the clinical trial, peaks of antibody presence were observed in the second week (effect of the first dose), fifth, and sixth weeks (after receiving the second dose). Ultimately, 50% of the volunteers still maintained a high antibody presence even four months after receiving the vaccine produced by the Butantan Institute.

During the month of August, 2021, ICr promoted the photo exhibition "Breast-Feed and Protect" on Subway Station República of Line 3 Red. The ICr celebrated the importance of a support network, highlighting images of collaborators, mothers, and patients of the Institute.

The partnership with São Paulo's Subway System included the transmission of a 10-second video on the digital panels distributed among 16 stations. The photo exhibit registered different moments of the course of breast-feeding: the first day, the continuity of the bond at home or a hospital environment, the battle for breast-feeding after a treatment, and its integration with the urban environment. The campaign also included actions on social networks and posters at Subway stations, with a QR code that enabled access to an on-line version of the exhibit and education content on breast-feeding.

In 2021, in a joint action with FFM, ICr carried out 876,741 assistance procedures.

Institutional Data:

Foundation: 1994

Constructed Area: 14.3 thousand m²

Accreditations: ONA III, ONA/IBES Level 3 and National Program of Quality in Mammographies (PNQM)

Care indicators:

Outpatient appointments: 3,677

Imaging Exams: 227,268

Standing out for innovation, the **Radiology Institute (InRad)** is a national and international center of excellence, with pioneering technology in imaging diagnosis and cancer treatment. It was the first institution of Latin America to apply nuclear medicine techniques and the first in South America to obtain high dose rate brachytherapy equipment.

It is comprised by two buildings. The main building houses conventional, interventionist, and radiotherapy outpatient radiology resources. The annexed building hosts the Nuclear Medicine Center (CMN), a pioneer in the development of radiopharmaceuticals, produced by Cíclotron, for treatment and research in oncology and neurology.

InRad also has the Imaging Diagnosis Center for Breast Diseases (CEDIM) and the Technical-Scientific Center for Imaging Diagnosis (NDI). The latter has implemented digital storage and distribution system for images, which enables access to the information by any unit of the hospital, and has dismissed the printing of reports and images of the exams.



InovaHC District Installations

InovaHC - HCFMUSP

Directly linked to InRad, the InovaHC District, inaugurated in 2019, is a space to harbor innovation startups and labs, within a modern structure. With a multidisciplinary environment, it stimulates co-creation, the development of transforming solutions, and validates new technologies, products, and services, in addition to encouraging

innovation within the realm of HCFMUSP, administrating the intellectual property produced, and providing the means to promote the transfer of scientific, technological, and cultural knowledge to both public and private productive sectors, with the objective of improving national health.

InovaHC (HCFMUSP's Technological Innovation Center) and the Secretariat of Economic Development of the State of São Paulo (SDE-SP) held the launch event of In.cube's first edition, on February 22nd, 2021. The event, hosted at InRad, had a restricted participation—due to the COVID-19 pandemic and the determinations of the São Paulo Plan, but was broadcasted live through InovaHC's digital channels.

In.cube is a program in support to InovaHC and SDE-SP's innovation to generate new businesses—products, processes, and services—in the health field and with social impact, based on tech-based research and projects carried out within the HCFMUSP Complex. The methodology created and tested at In.cube shall become a cornerstone to consolidate public policies on innovation, science, and technology in the State, aspiring to be replicated by other science and technology and research institutes in São Paulo.

During the entire month of October/2021, InRad carried out several virtual events to raise awareness about the importance of early detection of breast cancer and its developments.

Its first on-line transmission, on October 7th, was on the topic "Demystifying mammographies", its second, on October 13th, was about "Understanding my breast exams". On October 19th, the theme was "Pink October: let's get our exams". And on October 27th, the event was concluded with the subject "I have breast cancer, what now?".

The Strategic Planning Meeting of the Academic Health System 2030 of FMUSP took place on December 2nd, 2021, at InRad, and was attended by more than 60 people. The ninth edition of the Shining Eyes Workshop was also hosted in InRad's grand auditorium, on December 3rd, 2021—one day after the Strategic Planning Meeting 2030 of the FM/HCFMUSP Academic Health System. Together, both events defined the guidelines and goals for the improvement and alignment of the Institutions' management.

In 2021, in a joint action with FFM, InRad carried out **230,945** assistance procedures.

Institutional Data:

Foundation: 1975

Constructed Area: 36 thousand m²

Accreditations: CARF

Care indicators:

Total quantity of Assistances (Vila Mariana, Umarizal, Lapa, and Clínicas Units): 136,162

The **Physical Medicine and Rehabilitation Institute (IMRea)**—initially called Vergueiro Professional Rehabilitation Division (DRPV) and later Rehabilitation Medicine Division (DMR)—has multiprofessional teams and state-of-the-art technology, with the largest and most complete technological park in Latin America, assisting people with physical impairments, either transient or definitive in an integral and integrated manner based on the development of their physical, psychological, social, educational, and professional potentials.

The IMRea seeks to pioneer rehabilitation assistance, through clinical research and technological innovations, with the development of strategies to evaluate the results for the patient and society.

The rehabilitation Programs are organized with emphasis on multiprofessional work, coordinated by a physiatrist and carefully developed by physicians, social workers, psychologists, physiotherapists, occupational therapists, speech therapists, nurses, nutritionists, physical educators, pedagogues and art educators. They are highly specialized teams, responsible for the planning, execution and follow-up of specific treatments, perfected by the constant development and incorporation of new technologies.

In addition to the regular rehabilitation treatments, we underscore the Re-AbilityLab, a set of interventions that strengthen the rehabilitation process, valuing and expanding the functional condition of patients and leveraging its support network.

The main impairments treated by IMRea derive from brain injury, spinal cord injury, amputations, neurodegenerative diseases, post-COVID complications, in addition to congenital malformations of the upper and/or lower limbs, cerebral palsy and/or neuropsychomotor developmental delay, hemophilia, Down Syndrome, and disabling benign pain.

In 2020, IMRea aggregated teleassistance, a distance care modality, for patients in a rehabilitation program. It is an extension of the assistance by the multiprofessional care already provided by the IMRea team to the patient and

caregiver, with the purpose of monitoring home therapeutic guidance and promote the continuity of the Rehabilitation care for the patient with displacement restrictions due to the pandemic.

Reference in the rehabilitation in São Paulo, IMRea received, in 2021, patients with physical and neurological sequelae left by COVID-19. After contamination, those people fight to return to their normal condition. To that end, they rely on the work of a multidisciplinary team, composed of psychiatrists, physiotherapists, occupational therapists, psychologists, speech therapists, physical educators, nutritionists, nurses, and social workers.

IMRea comprises today five Units, distributed over the Greater São Paulo: IMRea-Vila Mariana, IMRea-Umarizal, IMRea-Lapa, IMRea-Clínicas and IMRea Morumbi (IRLM – page 51).



Robotics Lab

IMRea-HCFMUSP

IMRea is hosted in **Vila Mariana**, south side of São Paulo, and assists an average of **247 patients every day**, in addition to teleassistance, offering specialized exams and treatments with high-end equipment, including Robotics Labs, Neuromodulation (opened in 2013), and Assistive Technology Lab, Bioengineering with 3D resources, and a specialized Neuromuscular Blockade ambulatory.

The admissions ward has adapted rooms to enable patients and their caretakers to have a humanized and comfortable welcoming environment.

The assistance team is composed of psychiatrists, dentists, social workers, psychologists, physiotherapists, occupational therapists, nurses, speech therapists, nutritionists, physical education professionals, rehabilitation technicians, rehabilitation engineers, among other professionals, in addition to specialists for backup in the areas of cardiology, urology, infectology, radiology, psychiatry and general practice.

IMRea Umarizal, inaugurated in 2001, is located in the south side, in the district of Campo Limpo. It assists approximately **82 patients every day** within its several rehabilitation programs. It offers high-end technology, such as the Robotics and the Assistive Technology Labs, which aims to develop the patients' maximum potential. It

provides specialized ambulatories, such as Neuromuscular Blockage, Acupuncture, Dentistry, and the labs specialized in Electroneuromyography, and Isokinetic evaluation and training. After concluding the rehabilitation program, it is possible to participate in physical conditioning activities to enhance physical abilities and start in adapted sports.

In the west side of the city, **IMRea Lapa**, inaugurated in 2007, currently assists around **192 patients per day** within its several rehabilitation programs, in addition to tele-assistance. It offers specialized outpatient facilities, such as hemophilia and Integral Care for Down Syndrome, which assists patients from zero to 18 years of age, with distinguished programs according to the age profile and different development phases.

It promotes educational meetings in order to guide health care professionals towards a better approach with the public with impairments and the elderly. The initiative was created based on testimonies from patients that did not have good care experiences, whether due to architectural or behavioral issues. The project "I respect differences" foments empathy and inclusion through experiences and conversation groups promoted by the multidisciplinary staff of the rehabilitation network.

Specifically in that Unit, in addition to the regular rehabilitation treatments, Re-AbilityLab stands out, counting on labs where activities are developed by a multiprofessional team and specialized technicians, who combine techniques of education, art, sports, and accessible leisure and culture concepts, enabling their active participation in society and full inclusion in the community in which they live.

Activities and orientations are offered not only to people with impairments, but to their entire support network as well: their caretakers, family members, friends, students of the community, health and education professionals, among others. Furthermore, IMRea offers the possibility of experiencing new things, by returning to the labs whenever the patient feels the need to train new abilities.

Also, the Re-AbilityLabs carried out at IMREA Lapa aim to continue the rehabilitation programs as a strategy to promote inclusion and improve the quality of life of people with impairments, including Post COVID-related complications.

That Unit also hosts activities of the Center of Wheelchair Technologies and management and development related to the distribution of orthoses, prostheses, and mobility aids for patients in rehabilitation programs.

Inaugurated in em 2008, **IMRea Clínicas** is located within HCFMUSP facilities and, in its several rehab programs, assist approximately **80 daily patients**, who are sent by the community, Basic Health Units, specialized ambulatories, HCFMUSP, and teleassistances.

It attends the higher complexity cases, such as brain lesions, cerebral paralysis and/or delayed neuropsychomotor development, neurodegenerative diseases and musculoskeletal pathologies, in addition to relying on the specialized ambulatory for Neuromuscular Blockade and the specialized Electroneuromyography lab.

In 2021, still under the impacts of the pandemic, the number of outpatient assistances of **IMRea**, including medical and dentist appointments, multiprofessional care and exams, reached **136,162** in-person assistances, as shown in the chart below.

PHYSICAL MEDICINE AND REHABILITATION INSTITUTE - IN-PERSON ASSISTANCES IN 2021				
Unit	Multiprofessional Assistances	Medical / Dental / SSO Assistances	Exams	Total
Vila Mariana	49,163	12,663	3,647	65,473
Lapa	19,802	2,399	0	22,201
Umarizal	25,168	3,838	0	29,006
Clínicas	15,609	3,496	377	19,482
Total	109,742	22,396	4,024	136,162

In addition to in-person care, in 2021 a total of 109,485 teleassistances were performed by the staff, topping the production in 2020. That care modality reduced the impact of pandemic-related restrictions.

In September 2021, IMREA was redesigned by the OPAS General Board, Collaborating Center for Rehabilitation and Assistive Technology, with a new joint work plan valid until 2025.

Suzano Auxiliary Hospital

Institutional Data:

Foundation: 1960

Constructed Area: 20.9 thousand m²

Accreditations: ONA I

Care indicators:

Admissions: 128

Outpatient appointments: 20

Imaging Exams: 1,258

Lab Exams: 3,190

The **Suzano Auxiliary Hospital (HAS)** works as a backup for the several institutes of the FM/HCFMUSP System and provides specialized medical-hospital assistance in care for patients with long stays at the HC.

The multiprofessional teams that work in the unit receive adults and children in different stages of diseases. The goal is to reestablish the patient's functional capacity and reduce the impact of several after-effects.

Owing to the renovations at the hospital, it was possible to increase the assistance capacity and the

quantity of diagnostic and therapeutic resources available.

In addition, management and monitoring tools of the Health and Social Assistance Network have been implemented, focused on the dehospitalization of the patients with medical discharge with social restrictions, either because of vulnerability or legal aspects.



HAS RELEASE

Suzano Auxiliary Hospital Facade

In 2021, in a joint action with FFM, HAS carried out 4,596 assistance procedures.

Cotoxó Auxiliary Hospital

The **Cotoxó Auxiliary Hospital (HAC)** was created in 1971, with the goal of providing support to the HCFMUSP Institutes.

Located in the Pompeia district, in São Paulo, the hospital offers specialized medical-hospital assistance to patients with intermediate care, via an integrated multiprofessional team.

Currently the HAC is undergoing construction works to extend their installed capacity, adding modern resources for diagnostic and therapeutic procedures to the assistance provided, in addition to new spaces dedicated to education and research in the health field, and the future Alcohol and Drugs Institute.

LIMs

After the University reform of 1968 (Guidelines and Bases Law for National Education), which grouped the basic sciences departments of USP units into the University City campus, an agreement was signed between HCFMUSP (that would provide materials and human resources) and FMUSP (that would grant physical spaces). Hence were created the Medical Investigation Labs, officially instated in 1997 with the objective of maintaining basic research at FMUSP.

There are a total of 66 Medical Investigation Labs associated to FMUSP Departments, with hundreds of research groups registered in the CNPq directory.

The LIMs have the following main purposes: develop scientific research, standardize new diagnostic techniques and methods, promote the training of researchers and operate as a field of

education and training of health students and professionals.

The LIMs lack a building of their own and the Lab Units are distributed throughout the several buildings of the FM/HCFMUSP System, Oscar Freire Institute, and IMT-FMUSP, with a larger concentration (42 Units) allocated in the FMUSP Central Building.

Its scientific production is developed in the Institutes and represents 7.3% of Brazilian publications and 3.3% of Latin American publications in the health and biomedical sciences field, according to data from the Science and Technology Department.

With the growth of scientific production of the FM/HCFMUSP system, in 2014 the Intellectual Production Observatory was launched (OPI) to follow and organize the scientific production of researchers associated to the institution, which

developed an own database gathering all the FM/HCFMUSP system's scientific production since 2011.

It is possible to query the papers published from the last eight years produced by the researchers associated to the FM/HCFMUSP system through FMUSP's library website. The availability of the material in full may vary. OPI seeks to facilitate access to the complete text; on the other hand, mindful of the author's rights and copyright legislation, they restrict or veto access to what is not allowed.

The FM/HCFMUSP System has a multiuser equipment network that is considered a national model. Currently there are 42 centers, which offer use of equipment and services for researchers both from the System and external, national and international (www.premium.fm.usp.br). More than USD 20 million have been invested in the construction of that network. Funding for the acquisition of these equipment is made via support agencies and administration bodies, among others. Among the equipment available is the 7 Tesla Resonance of the Autopsy Room Imaging Platform, where minimally invasive autopsies are being carried out on COVID-19 cases. Among the experimental models available are the zebra fish and Animal ICU.

Part of the financial resources from the #HComVida were used to subsidize 16 research projects related to virus family Corona, Sars, Cov, and COVID-19, selected in the "Proposal Submission Notice No. 01/2020 - Researches in COVID-19 FMUSP-HC System", which included the active participation of LIMs researchers. Its goal was supporting research projects from researchers

associated to the FM/HCFMUSP System that contributed to the knowledge on the SARS-CoV-2 virus, COVID-19, and its effects and impacts on human health and society.

Researches may be uni- or multidisciplinary and necessarily required ethical approval with CONEP and/or CAPPesq. Projects that had no funding from fomenting agencies or from other sources or projects whose funding is partial were eligible.

The resources were invested in two groups. The first was formed by projects that required low investment and a shorter period for conclusion. In that case, 10 projects were supported with up to R\$ 50,000 each, for a period of up to 18 months. Among the topics studied by those projects are COVID-19 actions on blood clotting in hemodialysis patients affected by the disease, projects involving minimally invasive autopsy, with imaging diagnostic equipment; quick testing possibilities; disease action in children and elderly, and treatment possibilities.

The second group, with six projects, was formed by researches that required more resources for implementation and a longer period of execution. Each received up to R\$ 250,000 and have a 24-month deadline for their conclusion. In that case studies are being done on the action of antibodies in COVID-19 infections, characterization of the disease and its pathogeny, in addition to studies of autopsies and genetic susceptibility, and the recovery of pregnant women infected by COVID-19.

The resources were deposited for FFM and are audited by PwC, which ensures transparency in the use of resources donated by the community.

Other Health Units

FFM and HCFMUSP also develop joint actions focused on improving other Health Units and Centers, dedicated to the gratuitous assistance to SUS patients.

House of Aids

Installed in the facilities of the Pinheiros Health Center of SES-SP, the **HIV/Aids Patient Care Extension Service – Aids House (SEAP)**, of the Infectious and Parasitic Diseases Division of HCFMUSP, it is an outpatient and day hospital focused on education, research, and interdisciplinary assistance to adult patients living with the human immunodeficiency syndrome. Inaugurated in 1994, it counts on a joint operation with FFM, since 2004.

By means of agreements signed between FFM, SES-SP, and HCFMUSP, in 2021, 3,801 were assisted in the House of Aids. Among the patients that live with HIV, 70% are male. The youngest patient is 18 years old, and the oldest, 98. Integral care is offered by a multidisciplinary team, which includes infectious disease physicians, gynecologists and psychiatrists, nurses, psychologists, pharmacists, nutritionists, social workers, dental surgeon, physical educators and technical and administrative support staff.

SEAP is the first in the public health network of the State of São Paulo dedicated to HIV carriers and, with the inauguration of its Physical Activity Lab, in 2019, it then incorporated, in an innovative manner, sports practice in the proposal of integral care to the HIV patient, in order to minimize the effects of the chronic AIDS-related diseases and the use of antiretroviral medication, with an improvement in the quality of life and adherence to treatment. In 2021, those activities, which had been suspended due to the pandemic, were finally resumed, under the advancement of the COVID-19 vaccination scheme.

Actions in prevention of HIV and diagnosis are also performed, along with testing for the virus and other infections, such as hepatitis and syphilis, which can be sexually transmitted.

In December/2021, a collective effort was carried out for Quick testing HIV and Syphilis at Largo da Batata, in Pinheiros, when 210 tests were applied. On that occasion, no positive results were

detected for HIV and 12 positive results for syphilis, promptly received at SEAP.



More than 200 people participated in the collective effort for HIV and syphilis detection.

As to the medical appointments, elective assistances in psychology, nutrition, and dentistry carried out during the COVID-19 pandemic were followed by guidance described in the protocol established by the HCFMUSP, for the evaluation of the patient's clinical condition done by a doctor for orientation as to their health condition and defining the next return. The mental health team, in turn, maintained the psychological service to help patients in an acute crisis situation, as well as a dentist, for dentistry care in emergency situations.

With aim to continue these actions, in 2021 an Amendment to the Agreement was signed in 2016 between HCFMUSP, FFM, and SES-SP.

In 2021, via FFM, 11,836 medical appointments and 19,185 assistances by the multidisciplinary staff were carried out, totaling **31,021 outpatient procedures**.

A total of 30,651 prescriptions were fulfilled in the pharmacy and 1,690 HIV tests, 1,180 syphilis tests, and 1,670 viral hepatitis B and C were performed.

Children's Cancer Treatment Institute - ITACI

The Onco-Hematology Service (SOH) of HCFMUSP's ICr, referred to as ITACI, initiated its activities on 12/17/2002 and provides care for children and adolescents, from 0 to 19 years of age, carriers of onco-hematological diseases.

FFM and HCFMUSP, through agreements made with SES-SP, jointly develop ICr's ITACI activities, a reference in assisting children with cancer. With aim to continue those actions, in 2021 an Amendment was included to the Agreement signed in 2016 between HCFMUSP, FFM, and SES-SP.

In result of the COVID-19 pandemic, in 2021 it was necessary to maintain the suspension of all cultural and social actions with external volunteers and supporters, for only the professionals strictly required for patient contact to be maintained. Hence, the individualized programming with patients were maintained, in order to respect the guidelines from the World Health Organization - WHO and from our CCIH staff.

Occupational Therapy continued its activities through activity kits for painting, drawing, and reading and with on-line interactions with several NGOs, with the exception of Joy Doctors, which was the only one to be authorized to return in-person, with one individual, fully vaccinated, maintaining hybrid activity (in-person and on-line).

As of September, ponies Nemo and Caramelo brought monthly doses of joy and hope to the children assisted by ITACI. A partnership with the Paulista Equestrian Society, the initiative sprouted from one patient's dream of the service, who, during a seven-month hospitalization, told the staff about his dream to see horses.

The ponies' visits happen on a monthly basis and follow the control protocols. Among other actions, they are done outdoors and there is a health check by the Equestrian Society and ITACI's team to avoid the presence of people with any respiratory symptom.



ITACI RELEASE

The first visit was on September 14th and the ponies made the kids very happy

Nearly 5,000 disposable and cloth masks were received, which were distributed to all ICr employees, patients, and escorts.

In 2020, ITACI achieved the ONA/IBES 3 Accreditation with Excellence certification, which was re-accredited in 2021.

In 2021 were performed: **14,409** medical appointments; **52** Hematopoietic Stem Cell Transplants, whereas 10 Autologous, 32 Related Allogeneic and 10 Unrelated Allogeneic; and **6,811** outpatient chemotherapy sessions, totaling **21,272 procedures**.

Butantã School Health Center

The **Samuel Barnsley Pessoa Health School Center (CSEB)** is an FMUSP faculty-care unit, under the responsibility of the Departments of Preventive Medicine, Pediatrics, Medical Clinic and Speech Therapy, Physiotherapy, and Occupational Therapy. The Center is dedicated to education and research in the primary care area for graduation students in the field of health, medical and multiprofessional residency, in addition to the formation of technical

level professionals and others already working with services.

It is responsible for the care in an area of 25 thousand residents in the Butantã region, encompassing two discontinuous centers, with socioeconomic diversity, as well as demographic, health conditions, and vulnerability to sickness. In 2021, via FFM, CSEB carried out **3,382 outpatient procedures**.

USP University Hospital

The **University Hospital (HU)** has the purpose of promoting education, research and extension of services to the community. In order to achieve their objectives, HU undertakes to: stimulate and promote education and research, providing them with a field of activities and development;

developing disease prevention and treatment assistance activities, as well as health protection and recovery; and collaborate with education institutions in the development of assistance, educational and operational technologies.

By the end of 2018, an agreement was signed between SES-SP, FFM, and HCFMUSP for care improvement at USP's University Hospital, whose activities was ended in February, 2021. The main pillar of the agreement was hiring physicians, via FFM, to restructure the staffs of HU-USP's major areas. The medical team of the Corporate Care Management of the Clinical Board was also involved in building new assistance flows and processes, bringing initiatives already validated in the

HCFMUSP to the University Hospital. Thus, the path was drawn to optimize the hospital's productivity and resume the excellence in education, which has always been the institution's trademark.

In January and February of 2021, there were 700 surgeries, 948 assistances in the Pediatric Emergency Care and 8,331 assistances in the Adult Emergency Care, totaling **9,979 health care procedures**.

Management Contracts

As of 2008, FFM was recognized as a Health Welfare Organization and became responsible for managing ICESP and IRLM.

The Cancer Institute of the State of São Paulo (ICESP) and the Lucy Montoro Rehabilitation Institute (IRLM) based their management on the Health Welfare model, via FFM.

In 2008, FFM became recognized as a Social Organization, a private legal entity, non-profit, whose activities are directed to education, scientific research, technological development, protection and preservation of the environment, culture and health, receiving such title from the Public Administration and authorized to enter into Management Contracts with them to perform non-exclusive services of the State. Thus, it became responsible for managing ICESP and IRLM.

Annually, over 22 thousand medical appointments are held at **ICESP**, more than 38 thousand chemotherapy sessions, and 41 thousand radiotherapy sessions, in addition to 6 thousand surgeries. Every year, ICESP receives evaluations from the population and is always among the top ranking.

IRLM, in turn, is dedicated to providing care for patients undergoing rehabilitation, with interdisciplinarity as its trademark, whose staff is formed by psychiatrists, physiotherapists, occupational therapists, social workers, psychologists, nurses, nutritionists, speech therapists, music therapists, and physical educators.

Management Contract of the Cancer Institute of the State of São Paulo - ICESP



The **Cancer Institute of the State of São Paulo – Octavio Frias de Oliveira (ICESP)** is one of the units of the Universidade de São Paulo Medical School Clinics Hospital (HCFMUSP), with exclusive care for SUS patients (Public Health System).

Inaugurated in 2008, which was consolidated as a reference in oncology care in the country, providing assistance to approximately 116 thousand patients in a humanized manner, with elevated technical quality and developing research and educational activities in all fields related to oncology.

In addition to the Parent Unit, located on Doutor Arnaldo Ave., in São Paulo, the Institute has an Outpatient Unit in the municipality of Osasco and a specialized outpatient pharmacy, located on Consolação St., which enables integral oncology assistance with the provision of all high-cost medications (oral chemotherapy and hormone therapy) and nutritional supplements.

ICESP is accredited with the Health Department as a "Center of High Complexity Care in Oncology" (CACON), i.e. the Institute has the technical conditions, physical installations, equipment and human resources suitable to provide high-complexity specialized care for definitive diagnosis and treatment of the most prevalent cancers in the country.

In terms of representativity in SUS oncology care in the State of São Paulo, the Institute presented, in 2021, the following data published in DATASUS / MS (TABWIN - Jan to Dec - data extracted on 02/11/2022):

- ICESP performs 9% of the total of Chemotherapies of the State, the largest production of São Paulo. There are an average of 5,205 patients undergoing treatment every month;
- The largest production of hospital discharges in the State among the specialized hospitals, an average of 1,306 discharges per month;

- The highest number of medical appointments among the specialized hospitals of the State, with approximately 18 thousand appointments every month.

Care provided with excellence is a basic premise in ICESP's assistance and transcends the act of aiding the patient within its facilities. The act of providing care is connected to the humanization concept, integral concern for the person and for all those in contact with them, whether family or friends.

ICESP is recognized as a center of excellence in a national and international scope, with important seals and accreditations. For its commitment with

Quality and Safety, ICESP is accredited by the National Accreditation organization - ONA at level 1 (2010) and 2 (2011), by the Joint Commission International – JCI (2014 – 2017 - 2020) and has the Elderly Friendly Hospital Seal - adherence and full level (2016). The Institute's rehabilitation service is also accredited by the Commission on Accreditation of Rehabilitation Facilities – CARF (2015 – 2017 - 2020) and its labs by the Clinical Laboratories Accreditation Program - PALC.

The numbers reflect an expressive assistance production and one with great representativity, with more than 460 thousand procedures carried out every year.

SUMMARY OF ICESP ASSISTANCE IN 2021 - DR. ARNALDO UNIT	
Procedures Performed	Qty.
Medical appointments	206,721
Chemotherapy sessions	35,800
Radiotherapy sessions	36,521
Surgeries	6,346
Multiprofessional appointments and specialized therapies	123,513
Hospital Discharges	15,669
Urgent and emergency care	21,046
Total	445,616

SUMMARY OF ICESP ASSISTANCE IN 2021 - OSASCO UNIT	
Procedures Performed	Qty.
Medical appointments	8,513
Multiprofessional appointments	7,052
Chemotherapy sessions	2,674
Radiotherapy Sessions	4,669
Total	22,908

Similar to 2020, the year of 2021 presented many challenges in facing the pandemic—COVID-19 is an infectious disease and represents even greater risks for oncology patients. The Institute remained aligned with the HCFMUSP complex in confronting the disease, via a series of protection and information actions and measures to aid in ensuring the maintenance of oncology assistance with quality and excellence.

With new COVID-19 peaks, the first quarter of 2021 (second wave of the pandemic) was an extremely critical period for cancer care, particularly for surgical patients. In spite of all precautions and safety protocols, the effects of the disease and its post-surgical complications present a substantially higher risk in performing surgical procedures. In that sense, high-risk procedures and patients with an urgent and emergency condition were prioritized.

Despite the surgical contingencies in the beginning of the year and based on strict safety protocols, the cancer treatments and other offers of resources of the Institute were maintained over 2021.

The year 2021 was also marked by several actions at ICESP that went through important moments:

- ICESP, along with HCFMUSP, on January 17th, 2021, kicked-off the vaccination of all their collaborators against COVID-19;
- Conclusion of the works of modernization and the auditorium and amphitheaters, providing collaborators, professors, and community with a new space to hold courses, lectures, and events with high-end audio and video technology.
- Distribution to collaborators, via a Sustainability Committee, of 5.1 thousand retractable and reusable cups with the goal of reducing the consumption of disposable cups in the institution.
- Graduation of the 1st Class of Multiprofessional Residency in Adult Oncology Care;
- The Special Care Assistance Center (NACE), which aided patients in palliative care in the city of Cotia-SP, moved to the ICESP's Parent building on Dr. Arnaldo Ave;

- ICESP was in evidence among the scientific community with the publication of the study "Extended versus Limited Pelvic Lymph Node Dissection During Radical Prostatectomy for Intermediate and High-Risk Prostate Cancer: Initial Clinical Results in a Phase 3 Randomized Clinical Trial", published in the review European Urology and carried out by one of the institution's research teams;

- Beginning of the ERAS protocol implementation (Enhanced Recovery After Surgery) with assistance measures before, during, and post-surgery, benefiting the acceleration of the patient's recovery process;

- Conclusion of the works to replace the hydraulic tubing for water leakage control, in addition to the installation of no-breaks with aim to ensure continued power supply during instabilities in the mains supply, ensuring the operation of hospital equipment at the ICUs and Surgical Center;

- The "100 most influential in Health" award honored the President of the ICESP Board Council, Prof. Dr. Paulo Hoff, and leaders of the HCFMUSP complex;

- Beginning of the "Supportive Packet" project collecting empty medication packets with the purpose of exchanging every 2 tons collected for wheelchairs for ICESP patients;

- Inauguration of the "Cardio-oncology Research Center of the Heart Institute" at InCor, in partnership with ICESP, with the goal of studying and treating cardiovascular diseases that affect oncology patients from the Public Health System;

- ICESP was ranked among the 200 best hospitals of the world in oncology, according to the annual publication The World's Best Specialized Hospitals 2022, a rank developed by Newsweek magazine, in 99th place as part of the HCFMUSP complex and 107th place as the Institute;

- Granted the degree of Energy Efficiency of the Energy Efficiency Program (PEE), by Enel Distributor São Paulo, owing to the success in the project to replace 14 thousand fluorescent light bulbs for new ones with LED technology, which enable savings of 1,451MWh and R\$ 664 thousand per year;

- Delivery of the works for facade renovation and modernization of the auditoriums performed with a donation of R\$ 8.2 million to the

Institute given by attorney Orlando Di Giacomo Filho;



The auditorium, after the renovation

- While performing 745,921 medical assistances in 2021, ICESP reached a Satisfaction Evaluation score of NPS 91, rating it within the zone of excellence according to the Net Promoter Score, implemented by the institution as of 2020;

- Our Achievements 2021 Event, with the objective of publicizing and celebrating with collaborators the targets attained and all actions carried out during the year at the Institute.

In 2021, ICESP promoted several humanization actions, among which stand out:

- **Navy Blue March Campaign:** colorectal cancer screening, through fecal occult blood research, as part of the Colorectal Cancer Screening Program for HCFMUSP employees;

- **Green July Campaign:** awareness actions about head and neck cancer through digital media, for the external public, and a health blitz, for the in-house public, with the purpose of raising attention to the signs of the disease;

- **Pink October:** the awareness month for Breast cancer Prevention gained an Instagram filter from ICESP and activities with collaborators. The 9th edition of the "Steps towards a new time" patients was also held, and broadcast in real time via social networks;

- **Blue November:** the awareness about prostate cancer prevention with collaborators also received an Instagram filter to publicize the month;

- Experimental Kitchen for Collaborators, with recipes dedicated to healthy meals;

- Humanized help groups in the ambulatory and check-in/out of hospitalization;

- Happy Birthday - celebration of hospitalized patient's birthdays in the admission units, CAIO, reception, and ICUs.

Lucy Montoro Rehabilitation Institute Management Contract

The **Lucy Montoro Rehabilitation Institute (IRLM)**, located in the Morumbi district, was designed with the purpose of offering greater complexity care for people with incapacitating physical disabilities, via the treatment of integral and integrated rehab, with technological structure and qualified personnel in diagnostic and therapeutic resources.

Health care promoted by IRLM has a multiprofessional and interdisciplinary character, specialized in the Medicine and Rehabilitation field. It seeks to promote treatment of the limitation caused by the disability with aim to reach the highest level of physical and functional independence of the patient, dedicated to integral rehabilitation and social inclusion, considering the characteristics and impairment level presented.

The rehab programs performed encompassed the set of assistances offered to the patient, since their admission to the hospital until their discharge, according to their disability, including all assistances and procedures required to obtain or complete the diagnosis and the therapies required for treatment.

Rehab treatments were carried out in outpatient and inpatient programs, exclusively via SUS, and they included: multiprofessional screening, medical ambulatory (evaluations and returns), rehabilitation program, guidance groups, team meetings, educational activity for patients and caregivers, dressing group, technical aid ambulatory, and neurochemical block ambulatory. It also offers home visits and familiarization with community resources, when necessary. To that end, it relies on a staff primarily comprised by physiatrists; consultant doctors in the specialties of medical clinic, cardiology, neurology and urology; social workers; psychologists; physical therapists; occupational therapists; speech therapists; nursing

professionals; nutritionists; physical educators, as well as technicians in orthotics and prosthetics and in therapeutic workshops.

The medical technologies for diagnostic and therapeutic support, which help to sustain the Rehabilitation Programs offered at the IRLM are: virtual reality, urodynamics, robotics for upper and lower limbs, vesical biofeedback, balance system, cycloergometer with functional electrical stimulation, passive cycloergometer for upper limbs, ergometric bicycle, exoskeleton associated to virtual reality, game therapy, 3d digitizer, I.a.s.a.r posture (laser assisted static alignment reference), ultrasound, bone densitometry, equipment for equine therapy simulation, electrical bioimpedance and therapeutic pool.

For the rehabilitation programs in an Admission regime, the IRLM is a reference in the State of São Paulo, sharing with IMRea the position of the only health establishments of the State to offer such assistance modeling. Patients with acquired brain injuries, spinal cord injuries, and other paralysis received medical care.

In the ambulatory, the rehabilitation programs are focused mainly on the Child macroprocess (up to 6 years and 11 months), including physical disabilities resulting from cerebral paralysis, myelomeningocele, obstetric paralysis and congenital malformations of the limbs. Upon specific demands related to the needs of patients that have been submitted to the rehabilitation program in an Admission regime and the processes of education and research, assistance for acquired brain injuries, spinal cord injuries, amputations and other paralysis was also offered.

IRLM's medical care production in 2021 was the following:

LUCY MONTORO REHABILITATION INSTITUTE ASSISTANCE PRODUCTION - 2021	
Description	Quantity
Hospitalization	581
Outpatient Assistance - Medical Specialties	3,724
Outpatient Assistance - Non-Medical Specialties	14,178
Provision of Orthoses, Prosthetics and means of Locomotion	(*) 3,745
General Total	18,483

(*) Quantity merely informative and not considered in the Assistance Total

The IRLM also promotes permanent training for health professionals in the rehabilitation area and carries out activities to contribute with the support and development of education and research in the disabilities field.

The IRLM supports the development of RRLM, offering health care and administrative technical support, in addition to sharing structures and systems that shall help the organization and coordination of that Network. That support is mainly composed of Public Relations, Central

Ombudsman, Information Technology, Quality Management and Humanization of Assistance, Orthopedic Workshop, Wheelchair Technology Center, Bioengineering Laboratory, Education, Research, Regulation and Professional Qualification Programs that encompass, among other actions, training, monitoring, and development of specialized activities, whenever necessary, to ensure the modeling of medical care, work routines, and technical improvements, ensuring the sustainability of the RRLM Program.

In 2021 the IRLM strengthened its partnership with the FM/HCFMUSP System with the continuity of inter-hospital transfers which represented 27% of all admissions in the year. Any medical clinic in the HCFMUSP Complex may request an evaluation by the Institute's inter-consultant staff via the HCMed System. Thereafter, an RRLM inter-consultant doctor verifies along with the IRLM admission reference physiatrist whether the patient is in condition to undergo an intensive rehab program. If approved, the patient is transferred to the IRLM, where he is followed by the multidisciplinary staff during treatment in admission, in an infirmary designed to receive them with the specific health protocols. The patients that arrived for outpatient screening had a period of four to six months to begin rehab. Today, they wait four weeks at most after the lesion.

Another admission highlight is post COVID-19 rehab. Approximately 20% of the inter-hospital transfers are patients from that clinic. Besides them we have the patients sent via outpatient screening for intensive rehab treatment for after-effects of COVID-19 infection. In total, 10% of the 2021 discharges were for hospitalizations of those patients.

Those arriving for rehab bring sequelae in functional, cognitive, and autonomy capabilities. Most present a post viral fatigue condition, aggravated by global muscular weakness, including respiratory musculature. Such weakness also results in weight and muscular mass loss and neurological alterations, underscoring the peripheral neuropathies that cause sensory changes and pain.

A major impact is observed in the cognitive functions of those patients, with complaints primarily related to attention, concentration, information retention, and memory recall, which are also influenced by the altered emotional state, mostly with exacerbated anxiety symptoms. Fatigue is a challenge for the program, given it interferes even in a patients' eating capability: some of them need adjustments in food consistency to reduce energy expenditure with chewing and swallowing. Weariness is also frequent, hindering the practice of exercises.

For professionals, the uncertainty of the prognosis and the lack of scientific evidence thwart their activities. Patients with co-morbidities generally develop more critical conditions and, consequently, have higher loss of functional capacity and more chances of secondary definitive lesions. Co-morbidities also interfere in the rehab program, from planning to acquisition of therapeutic targets, because they offer risks of clinical complications during treatment and for already presenting reduced functional reserve. The average time of the program is 21 days of hospitalization, but the care continues in their home environment. Medium- and long-term sequelae will depend on individual factors, but with an early intervention in rehab, there are great possibilities of resuming functional independence in daily life activities and resumption of social activities after discharge.

In April/2021, the IRLM Vegetable Garden Project was commenced. The garden is located on the external part of the first underground floor, and the project is being presented individually to patients apt to participate, who must meet the following criteria: therapeutic gain opportunity; be out of isolation or precaution; and lack of skin lesions or dermatitis on their hands or areas that may contact the earth.

The use of gloves is optional. The project was developed to fulfill the need to propose outdoor activities, which enable patient's exposure to the sun to ensure the recommended levels of vitamin D, along with the proposal to use foods produced in the actual Institute in the culinary practices carried out in the Inclusive Kitchen. It also intends to stimulate the consumption of fresh foods in replacement of processed and ultraprocessed options, meeting the orientations of the Food Guide for the Brazilian Population. In addition, for being an activity that is easy to reproduce at home, it encourages patients to take that healthy practice with them upon discharge.

Since August 30th, patients have access to a video about the Institute's routines and regulations. Before that, the information was shared during a one-hour in-person class. In the beginning of the pandemic, an on-line class was made available, via video application, with a 40-minute content.

The video is sent by e-mail to the patient, who has a period reserved in their schedule to watch it. For those without cell phone access, the video is played on the patient's room TV.

The e-book initiative unfolded into other actions by the institute, such as e-books with orientations and protocol and event notifications of critical incidents by generating a quick response (QR) code.

Another novelty in September was the replacement of the satisfaction surveys in paper for a digital version, also bringing benefits to the sustainability issue. Now, the patient receives, until their 10th day of hospitalization, a link with a message requesting them to answer the survey. Afterwards, in the first week after discharge, they get a new link.



IRLM COMMUNICATION

Children planting at IRLM's organic garden

Between September 27th and October 1st, the "Welcome to Spring" activity was held with the patients in the children's rehab programs. The interdisciplinary activity took place at the Therapeutic Garden, a new resource for nutritional education of the Institute.

The action had the goal of presenting the non-conventional food plants (Pancs); orienting as to urban gardens and the possibilities of cultivating other spices; and enable sensory-motor experiences during the process of repairing the garden, sowing, harvesting, and nutritional guidelines.

In December, the organizational Intelligence sector of IRLM set the targets for the following year, which include creating integrated bases to collect data from indicators generated by the areas, with information that is not in the TASY system, enabling the creation of broader corporate indicator panels; increasing the interface with the support teams responsible for organizing the medical care

timetable, with aim to improve management of the operational capacity; migrating the TASY system to the HTML5 platform; and increasing the support to the Boards in the continued improvement cycles.

The Sector originated from the proposal to integrate institutional information, with priority to the hospital management system, in its different stages, such as data input, processing and extraction, indicator generation, creation of management reports, and promotion of critical analysis with opening for decision-making.

Its main procedures are: migration of the medical care production from manual collection to processes structured in the TASY system, which generates the information that is required and strategic for accountability purposes; implementation of a business intelligence tableau platform, with panels of production indicators directly on the TASY system data base; and creation of an institutional tool to measure the operational and care provision capacity, which enables monitoring the occupation in a continued manner, brings perceptions to review the logistic organization of the assistance process and decision-making on the allocation of human resources, and promotes the efficient use of patient care schedules.

Between December 13th and 17th, the "Christmas Gym" activity was held with the patients in children's rehab. The idea, conceived by the multidisciplinary staff, was an adaptation of the current therapeutic environments to ones with a Christmas theme.

For each room, proposals of different activities were developed jointly with the patients and their caretakers with help from the multidisciplinary team. Every year the IRLM promotes activities to celebrate Christmas, but in that format, with greater involvement of patients in preparing the activities, it was the first time.

All in-person assistance patients of the children's ambulatory participated. According to collaborators, the reception was very positive and those who were there were able to enjoy the most out of the activities, always supported by some staff member directing and orienting each of them.

Other Assistance Initiatives



OTHER ASSISTANCE INITIATIVES

FFM develops, jointly with HCFMUSP, other assistance projects.

Adult and Pediatric Kidney Transplant Project

Targeting the assistance by the HCFMUSP Urology Division, to be provided to 375 patients who carry Chronic Kidney Disease from the PROADISUS project of the Samaritan Hospital, who need medium and high complexity assistance, in 2021 an Amendment was signed to the Agreement between HCFMUSP, FFM, and SES-SP.

This project encompasses, in addition to the provision of medical care, the qualification of professionals from other services to aid the needs of those patients.

In 2021, activities of planning, acquisition of materials and medication, and hiring and qualifying humans resources were performed.

Protocol for the Treatment of Labiopalatine Cleft Patients

The Cranial-Facial Surgery Protocol for Treatment of Patients with Labiopalatine Clefts, developed by the HCFMUSP Discipline of Plastic Surgeries and Burns, was enabled via Smile Train donations, through FFM, begun in 2008, benefiting labiopalatine cleft patients who need reconstruction of lips, nose, alveolus and palate defects, and their repercussions in speech and facial growth.

In 2021, due to the COVID-19 pandemic, 37 patients received medical care in **37 surgical**

procedures, distributed among primary cheiloplasties and palatoplasties and other secondary procedures.

In addition to the surgeries, **outpatient care was provided** (whose quantity was reduced due to the COVID-19 pandemic), approximately 20 weekly patients, totaling nearly **619 patients assisted/year**.

In 2021, **Speech Therapy** provided a total of **146 assistances**, thus totaling **802 procedures** (surgical, outpatient, and Speech Therapy).

Students Financial Support Program - AFINAL

To help mitigate the lack of financial resources, which hinders the performance of students with great academic potential, FMUSP offers, since 2007, the Afinal Scholarship, with resources obtained via donations for natural persons and legal entities, exclusively intended to aid low-income students.

The Afinal Scholarship is part of the FMUSP Strengthen a Student Project, a scholarship fund to increment the aid program, with resources from FMUSP's Board, the HCFMUSP Superintendency, from FFM, and FZ, as well as some donations from natural persons, but it needs to double that offer to fulfill current needs.

In order to receive the benefit, the student goes through a strict selection process, with the presentation of documents that prove their family's socio-economic status and, via a score, the enter a list of decreasing order of need.

There was a significant rise in students requesting financial support due to pandemic-related hardships. FMUSP, through FFM, offers an emergency aid scholarship to assist students who have been submitted to an evaluation based on socio-economic criteria and have proven a situation of vulnerability.

In 2021, another **104** scholarships were granted.

Actions of the Emergency Care Center for Reconstructive Microsurgery and Hand Surgery of HCFMUSP's IOT (CEMIM)

The creation of HCFMUSP's IOT CENIM is owed to the high growth in the number of patients bearing high complexity traumas. The phenomena of motorcycle accidents, urban violence, chaotic traffic and speeding have contributed to this situation.

Since the 1980s, multiple publications have shown scientific evidences of the importance of treatment in the trauma's acute phase. The proper primary treatment promotes better results, reduces

the complication rate, infection incidence, hospitalization period, and health-related costs, in addition to reducing mortality and amputation rates associated to the trauma.

With aim to continue these actions, in 2014 an Amendment to the 2016 Agreement was signed between HCFMUSP, FFM, and SES-SP.

In 2021, **521** surgeries and **2,442** outpatient assistances were carried out, totaling **2,963 procedures**.

Várzea do Carmo NGA

Through agreements signed between SES-SP, FFM, and HCFMUSP, via the Clinical Gastroenterology Service, they are responsible for the Endoscopy and Hepatology Service of the Assistance Management Center **(NGA) Várzea do Carmo**, an SES-SP specialty ambulatory that operates in Downtown São Paulo.

The service filled a gap in the assistance to secondary patients via SUS, solving most cases and sending more complex cases to specialized treatment at the HCFMUSP.

The Várzea do Carmo ambulatory is a reference for 39 municipalities of the Greater São Paulo. The cases are referred from primary attention services, such as AMAs, UBSs and emergency Hospitals.

With aim to continue those actions, commenced in 2010, an Amendment to the Agreement was signed in 2021 between HCFMUSP, FFM, and SES-SP.

In 2021, FFM and HCFMUSP, in joint action, carried out **15,674 assistances**, with 8,295 exams and 7,379 appointments.

Emílio Ribas Institute

The **Emílio Ribas Infectology Institute (IIER)** was one of the first Public Health institutions in São Paulo, inaugurated on 1/8/1880.

The IIER has an expressive participation as the major center of assistance, diagnosis, and treatment of infectious diseases and epidemics control in the State of São Paulo and Brazil.

In parallel to health care activity, it is a reference center for education and research, contributing towards the training of health professionals.

In 2014, an agreement was signed between SES-SP, FFM, and HCFMUSP with aim to execute the IIER Management, Actions and Services Operationalization Project, which was terminated in that same year. In 2016, 2017, and 2020, new agreements were signed with SES-SP, with aim to execute laboratory services by the ICHC Central Lab.

In 2021, an Addendum to the 2020 agreement was signed, ensuring the continuity of those lab services, which totaled 300,461 exams in 2021.

Implementation of the State Network of High Cost Medication Provision Centers - CEDMAC

The State Network of High Cost Medication Provision Centers - CEDMAC is a partnership with SES-SP to provide immunobiological medication in Rheumatology.

Over 2021, the entire assistance process of the patient in use of immunobiological therapy was done with a follow-up are the Department of Rheumatology of HCFMUSP, from patient evaluation, treatment indication, and follow-up of drug administration until the monitoring of pharmacovigilance, pharmacoconomics, and efficacy functions, in addition to assistance related to zoledronic acid applications and clinical evaluations of outpatients in the scope of administrative requests for non-standardized medication.

In 2021, the assistance numbers excelled the targets proposed, even with the impact of the COVID-19 pandemic and periodical disruptions of medication supply by the Health Department.

CEDMAC was the first public service in Brazil to achieve International Accreditation in that category, enabling access to international excellence and innovation standards.

With aim to continue these actions, in 2009 an Amendment to the 2016 Agreement was signed between HCFMUSP, FFM, and SES-SP.

In 2021, a joint action between FFM and HCFMUSP performed an average of 1,124 monthly routine assistances by means of the Rheumatology Division, totaling an annual average of **13,488 assistances**.

ICESP Rehabilitation Center

The IMREA, a beneficiary of a donation originated from a public civil suit filed by the State Labor Prosecution against a company, carried out as a replacement of a collective moral damages reparation, enabled in 2008 the installations of the ICESP Rehabilitation Center, inaugurated in 8/22/2008.

ICESP's Rehabilitation Service is focused in attending disabled persons, whether transient or definitive, with aim to optimize their functional potential, within the physical, psychological and social participation scopes.

Rehabilitation is focused in stimulating functional and independence potential, but it also

seeks to aid patients while adapting to their limitations, in order to live in the fullest and most independent manner possible. To that end, they rely on psychiatrists, physical therapists, speech therapists, neuropsychologists, occupational therapists, rehabilitation nurses and physical educators.

The Rehab Center became a pioneer in the field of oncology in Latin America to attain the Commission on Accreditation of Rehabilitation Facilities (CARF) accreditation, an entity recognized globally for establishing strict standards to accredit such ambulatory service.

In 2010, it was acknowledged by the National Accreditation Organization (ONA), in the following year, ONA level II and, in 2014, by the Joint

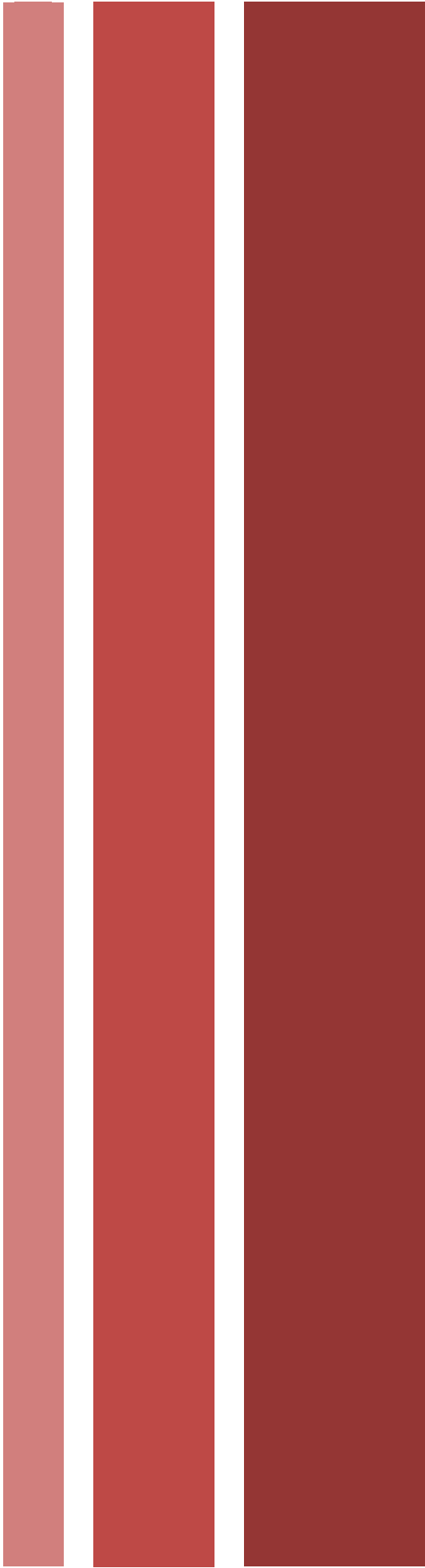
Commission International (JCI), methodologies which establish specific requirements and certify the quality and safety of the health services.

In 2020, they were accredited by the Commission on Accreditation of Rehabilitation Facilities (CARF), the most renowned international accreditation in rehab, globally recognized by their high levels of quality requirements, whose accreditation took place in 2015 and 2017.

The permanent, continuous and participative evaluation processes that contribute to quality and safety are also part of ICESP's humanization policy, focused on sheltering patients and their companions.

These activities continued in 2021.

COVID-19 Confrontation Projects



COVID-19 CONFRONTATION PROJECTS

As of 2020, several initiatives were developed seeking knowledge on the COVID-19 SARS-CoV-2 virus and its effects and impacts on human health.

The Genetic Diversity of Coronavirus in Brazil

This study, developed by IMT-FMUSP, was enabled via an agreement signed in 2021 between FFM and the Bill and Melinda Gates Foundation.

The project seeks to assess the dissemination's particularities and obtain frequency rates such as

morbidity, mortality, lethality, percentage of asymptomatic patients capable of transmitting the disease and seroprevalence in the healthy population to explain the epidemic and better propose action measures.

Interferon Lambda for Antiviral Therapy Immediately After Diagnosis (ILIAD): Randomized phase II study, double-blind, placebo-controlled, multicentric to assess the effect of peginterferon lambda on COVID-19 treatment

This study, developed by HCFMUSP's Infectious and Parasitic Diseases Division, was enabled by means of a Contract signed in 2021 between the University Health Network, HCFMUSP, and FFM.

It will enable assessing the safety and tolerability of the immediate treatment with Peginterferon Lambda 180 mcg on days 0 to 5 of admission in patients hospitalized with moderate COVID-19 and compare clinical outcomes with the control group.

Clinical Trial Phase I/II for scaling the dosage and evaluating safety and clinical response of the Anti-SARS-CoV-2 serum produced by the Butantan Institute

This study, developed by HCFMUSP's Infectious and Parasitic Diseases Division, was enabled by means of a Contract signed in 2021 between the Butantan Institute, HCFMUSP, and FFM.

It shall enable to evaluate the effectiveness of one dose of Anti-SARS-CoV-2 serum produced by the Butantan Institute, administered up to 5 days since the start of the symptoms, to prevent a critical disease development.

Study to Evaluate the Anti-SARS-CoV-2 Lineages and Establish Sequencing Labs in Support to Capitals' Town Halls

This study, developed by IMT-FMUSP, was enabled via a Donation Contract signed in 2021 between FFM and Magazine Luiza S/A.

The project seeks to qualify epidemiological surveillance labs in different regions of the country, which may help obtaining a greater volume of

genomic data that will enable to evaluate the most prevailing viral profiles and the most frequent mutations, and compare results with other global centers, allowing to better describe the genomic plurality and assess how that impacts the COVID-19 epidemic dynamics in Brazil.

Prevalence of Oral Manifestations in Patients Positive for COVID-19

This study, developed by HCFMUSP's Infectious and Parasitic Diseases Division, was enabled by means of a Cooperation agreement signed in 2021 between the Latin American Association for the Promotion of Oral Health and Dentistry Research, HCFMUSP, and FFM.

It shall enable to evaluate: **a)** the prevalence of oral manifestations in patients positive for COVID-19 and characterize the associated oral manifestations; and **b)** the oral microbiome of COVID-19 patients, comparing patients with or without oral lesions.

The impact of the COVID-19 pandemic on the health of mothers and children in their first 1,000 days of life

This study, developed by FMUSP's Preventive Medicine Discipline, was enabled by means of a Contract signed in 2021 between the Maria Cecília Souto Vidigal Foundation and FFM.

The project intends to further investigate the impact of the COVID-19 pandemic in Brazil in several indicators of mother-child health and health care to mothers and children in their first 1,000 days of life.

Evaluate the evolutionary behavior of hemostasis in SARS-CoV-2 infection and assess the impact of therapeutic anticoagulation and antiplatelet aggregation interventions on the clinical outcomes of infected patients

This research, developed by the Hematology, Hemotherapy and Cell Therapy Service of the ICHC, was enabled via an agreement made in the end of 2021 between FFM and the Health Department.

It will provide a potential contribution towards the understanding of the physiopathological response of the SARS-CoV-2 infection; subsidize the

development of new drugs or strategies to prevent unfavorable clinical progression in the infected; identify biomarkers to detect patients at higher risk of developing severe respiratory failure and/or thrombotic events; and identify drugs available in SUS with potential clinical benefits in the battle against COVID-19.

Impact of the SARS-CoV-2 coronavirus infection in patients with sickle cell syndromes assisted at HC-FMUSP and the Pró-Sangue Hemocentro de São Paulo Foundation: incidence, clinical repercussion and morbidity-mortality

This research, developed by the Hematology, Hemotherapy and Cell Therapy Service of the ICHC, was enabled via an agreement made in the end of 2021 between FFM and the Health Department.

Based on the prevailing SARS-CoV-2 infection data in the sickle cells population, it will enable to implement specific strategies for primary prevention, early detection, and identification of risk factors of a bad prognosis in that population.

Investigation of neutralizing antibodies in SARS-CoV-2 infection

This study, developed by HCFMUSP's Infectious and Parasitic Diseases Division, was enabled via an Agreement signed in 2021 between Regeneron Pharmaceuticals, Inc., USP, and FFM.

It will enable identifying neutralizing antibodies against SARS-CoV-2 in patients diagnosed with COVID-19 or who received vaccine formulations against SARS-CoV-2.

Evaluation of Vaccine Effectiveness and the Circulation of SARS-CoV-2 Variants in HCFMUSP

This study, developed by IMT-FMUSP, was enabled through a Partnership Term signed in 2021 between FFM, FMUSP, and the Itaú Foundation for Education and Culture.

The project seeks to determine the impact of immunization with Coronavac, or other COVID-19

vaccines among the HCFMUSP collaborators, and assess if the SARS-CoV-2 variants compromise neutralizing capability when treated with the serum of people who convalesced from COVID-19 or who were vaccinated with Coronavac or other vaccines.

Impact of the COVID-19 pandemic on the dissemination of resistance of antimicrobial and biocide agents in the environment based on the sewer of health units that receive COVID-19 patients

This study, developed by IMT-FMUSP, was enabled via an Agreement signed in 2021 between FFM and the Fondation Mérieux.

The project seeks to assess the impact of the COVID-19 pandemic on the dissemination of resistance of antimicrobial and biocide agents in the

environment based on the sewer of health units that receive COVID-19 patients, municipal sewers, and slums, providing timely information about the potential risk of microbial resistance dissemination in the ecology and its consequences to public health.

Verbal Autopsy in COVID-19 diagnosis

This study, developed by FMUSP's Pathology Discipline, was enabled via an Agreement signed in 2021 between FFM and Vital Strategies, Inc.

The project seeks to develop strategies and modifications to the verbal autopsy questionnaire for COVID-19 diagnosis.

Assessment of the ex vivo and in vivo cellular and humoral immune response of a DNA vaccine containing multiple epitopes for T cell epitopes against SARS-CoV-2 in BALB/c mice

This study, developed by FMUSP's Clinical Immunology and Allergy Discipline, was enabled via an Agreement signed in 2021 between FFM, FMUSP, and the Diomics Corporation.

It shall enable establishing a diagnostic test of COVID-19, through the detection of delayed cutaneous hypersensitivity against synthetic peptides, encoding T-cell epitopes of SARS-CoV-2.

Research projects related to the virus family Corona, Sars, Cov, and COVID-19, selected in the "Notice for Proposal Submission No. n. 01/2020 - Researches in COVID-19 FMUSP-HC System"

Aiming to raise funds to support HCFMUSP, citizens, doctors, and researchers launched in 2020 the #HCCOMVIDA campaign, which included the Viralcure web portal, dedicated to fund raising.

Via FFM, part of those financial resources have been used to subsidize 16 research projects related to the virus family Corona, Sars, Cov, and covid-19, selected in the "Notice for Proposal Submission No. 01/2020 - Researches in COVID-19 FMUSP-HC System", whose objective was supporting research projects from researchers associated to the FM/HCFMUSP System who contributed to knowledge on the SARS-CoV-2 virus, of COVID-19 and its impacts on human health and society.

The 16 projects selected, continuing activities in 2021, were the following:

- Investigation of neutralizing antibodies in SARS-CoV-2 infection
- Adipose tissue contribution to the cytokine storm of COVID-19 patients;
- Characterization of inflammatory response in patients with critical acute respiratory syndrome due to COVID-19;
- Pathogeny of COVID-19: an approach based on autopsies;
- Genetic susceptibility and complications associated to infection by SARS-CoV-2 in the Brazilian population;
- Exploratory study on COVID-19 during pregnancy (umbrella project), subproject Post COVID-19 fatigue syndrome; evaluation of pregnant and postpartum women;
- Viral and myocardial inflammatory profile in SARS-CoV2 infection (VIPHeart-SARSCoV2);
- COVID-19 and the study of antihypertensive drugs and hydroxychloroquine action on the renin-angiotensin system in lung tissue: an experimental study;
- Randomized, paired clinical trial comparing regional anti-coagulation modalities in continuous veno-venous hemodialysis in COVID-19 patients;

- Minimally invasive Autopsy in COVID-19; Accordance between Post-mortem Computerized Tomography and Histopathological Analysis of the Lungs;
- Zebrafish in the development of a quick test for COVID-19;
- ACE2 receptor expression and circulating ACE2 levels in pediatric patients with co-morbidities and COVID-19;
- Impact of prone position maneuver in patients with COVID-19 and severe Acute Respiratory Distress Syndrome: a multicentric cohort study;
- Brain MRI evaluation of fatal COVID-19 in minimally invasive autopsy;
- CO-FRAIL Study: Association between frailty and adverse outcomes in middle-aged and elderly adults hospitalized for COVID-19;
- Severity prognostic plasma markers for COVID-19.

In addition, FMUSP researchers carried out in 2021 a prospective study to identify the level of antibody response to covid-19 vaccine CoronaVac in patients with autoimmune rheumatic diseases (ARD), with satisfactory results.

An article with all the details from the FMUSP study was published in Nature Medicine on July 30th, 2021, with the title "Immunogenicity and safety of the CoronaVac inactivated vaccine in patients with autoimmune rheumatic diseases: a phase 4 trial).

The major goals were evaluating humoral immunogenicity—i.e. the vaccine's capacity to cause an immune response with the antibody production by the patient—and the safety of CoronaVac in people with ARD. The importance of the study is its focus on autoimmune rheumatic patients, who are under higher risk of hospitalization for severe covid-19. It is known that immunocompromised patients are more vulnerable to infectious diseases, owing to immunological deregulation and the effects of treating their diseases.

COVID-19 patient treatment with convalescent plasma transfusion: Multicentric, open, randomized and controlled study

This study, developed by HCFMUSP's Infectious and Parasitic Diseases Division, was enabled via an Agreement signed in 2020 between FINEP, HCFMUSP, and FFM and continued in 2021.

It shall enable to evaluate the effectiveness and safety of convalescent plasma transfusion in patients hospitalized with a severe pulmonary condition and potentially critical COVID-19 infection.

Study of biomarkers that evaluate the severity of disease and coinfection in patients hospitalized with COVID-19

This research, developed by the IMT-FMUSP, was enabled through a Work Order signed in the end of 2020 between FFM and the Foundation for Innovative New Diagnostics and continued in 2021.

It shall enable to assess the prognostic status of severity and coinfection of COVID-19 patients hospitalized in the ICUs and infirmaries of the ICHC, with the aid of biomarkers.

Phase 3, randomized, double-blind, placebo-controlled study to evaluate the efficacy and safety of Ad26.COVS.2 for the prevention of SARS-CoV-2-mediated COVID-19 in adults aged 18 years and older

This study, developed by HCFMUSP's Infectious and Parasitic Diseases Division of FMUSP, was enabled via Agreements signed in 2020 between FFM and the Family Health International, with NIH subvention, and continued in 2021.

It shall enable to assess the effectiveness of Ad26.COVS.2 in preventing moderate and acute COVID-19 confirmed by molecular testing, in comparison to placebo, in seronegative adults for SARS-CoV-2.

HPTN Personal Protective Equipment / CoPVN Vaccine Site Preparation / HIV Prevention Trials

Through six Grants signed in 2020 between FFM and Family Health International, additional financial support was provided, dedicated for the Infectious and Parasitic Diseases and Preventive Medicine Departments of FMUSP, with the following purposes: a) acquisition of PPEs; b) improve those centers' capacity to participate in

major Phase three effectiveness trials of studies in progress by HIV Prevention Trials Network (HPTN) and the COVID-19 Prevention Network (CoPVN); and c) adjustment of the research centers for the HPTN studies underway in the current COVI environment.

Those activities were ended in 2021.

Phase III Placebo-Controlled Clinical Trial for the Evaluation of Efficacy and Safety in Healthcare Professionals with the Adsorbed COVID-19 Vaccine (Inactivated) Produced by Sinovac

This study, developed by HCFMUSP's Infectious and Parasitic Diseases Division, was enabled via a Technical-Scientific Cooperation Agreement signed in 2020 between the Butantan Foundation, HCFMUSP, and FFM and continued in 2021.

It shall enable to evaluate the general effectiveness of two doses of an adsorbed COVID-19 vaccine (inactivated) produced by Sinovac, in symptomatic individuals with virological COVID-19 confirmation, who work as health professionals in COVID-19 specialized units.

The new colorimetric diagnostic methodology based on the detection of RT-LAMP nucleic acids (reverse transcription loop-mediated isothermal amplification) and its applicability in diagnostic screening using saliva samples from contacts of individuals positive for COVID-19 among athletes, students, and teachers of the public education network of the municipality of São Caetano do Sul

This study, developed by HCFMUSP's Infectious and Parasitic Diseases Division, was enabled via a Partnership term signed in 2020 between the Itaú Foundation for Education and Culture, FMUSP, and FFM and continued in 2021.

The intent of using this technique is to enable a practical and accessible diagnostic method for SUS that allows detecting and tracing COVID-19 in the population, thus enabling pandemic-related control measures.

Use of blood from immunized patients (plasma) for treatment of newly infected with Coronavirus under risk via antibodies created by immunized patients and other research on the topic of anticoagulant use, such as heparin, and discovery of new pharmaceuticals

This study, developed by ICHC's Hematology, Hemotherapy, and Cellular Therapy Service, was enabled via a Donation Contract signed in 2020 between BRF S/A and FFM and continued in 2021.

Its main goal is assessing the viability of using blood from immunized patients (plasma) in treating newly infected, as well as developing research on the use of anticoagulants.

Study of Coronavirus COVID-19 prevalence in the blood donor population of the Pró-Sangue Hemocentro de São Paulo Foundation and development of passive Immunotherapy, via plasma transfusion of convalescent individuals into patients with severe acute disease.

This study, developed by HCFMUSP's Infectious and Parasitic Diseases Division, was enabled via a Partnership term signed in 2020 between the Itaú Foundation for Education and Culture, FMUSP, and FFM and continued in 2021.

This study shall enable assessing the viability of producing hyperimmune serum, with individuals who had the infection confirmed by PCR and seropositive donors, and developing a test that enables expanding epidemiological studies.

Mental and physical work load perceived using a separate personal protective equipment (N95 respirator with a facial guard) and an integrated respirator (powered air purifying respirator) with breathing and eye protection

This study, developed by HCFMUSP's Infectious and Parasitic Diseases Division, was enabled via an Agreement signed in 2020 between the World Health Organization (WHO) and FFM and ended in 2021.

The main goal of the study was evaluating the human factors involved in the use of an N95 respirator plus a face shield compared with the traditional integrated PAPR (powered air purifying respirator) and a light PAPR.

Impact of the new coronavirus (COVID-19) pandemic on the mental health of participants of the Longitudinal Study of Adult Health (ELSA-Brazil) of the State of São Paulo

This study, developed by HU-USP was enabled via an Agreement made between FFM and the Global Genomic Medicine Collaborative in the end of 2020, and continued in 2021.

It shall enable to identify the impact of the COVID-19 pandemic on the mental health of São Paulo ELSA-Brazil participants, comprised by USP

employees, and assess the effectiveness of psychological interventions offered on-line to the participants that present a prior history of psychiatric disorders, high severity of mental symptoms, or those who wish to undergo such interventions.

Reevaluation of Mortality due to Natural Causes in the Municipality of São Paulo during the COVID-19 Pandemic.

This study, developed by FMUSP's Medical Clinic Discipline, was enabled via a Partnership Term signed in 2020 between the Itaú Foundation for Education and Culture, FMUSP, and FFM and continued in 2021.

The information about the deaths are key to understand the pandemic and its demographic and social impacts; because of that, the review of deaths

occurred in that period becomes mandatory, with classic demographic and epidemiological methods, so the exact profile of the coronavirus impact may be unraveled.

Through this it shall be possible to show, between March 1st, and October 31st, 202, among the deaths of São Paulo residents, who in fact died **by** COVID-19 or **with** COVID-19.

Innovation Projects



INNOVATION PROJECTS

HCFMUSP had its Scientific and Technological Institution (ICT) status formalized in 2016 and created its Technological Innovation Hub (NIT-HCFMUSP), inaugurated in the end of 2018. In September 2019, the InovaHC District was inaugurated, a space to harbor innovation startups and labs, in a modern structure, which stimulates co-creation, the development of transforming solutions, and validates new technologies, products, and services.

Developing a platform MVP based on Federated Learning so partners are able to integrate their models with the HC in a safe and quick manner to validate their IA algorithms without direct access to the hospital data

This study, developed by NIT-HCFMUSP, was enabled by means of a Contract signed in 2021 between Siemens Healthcare Diagnosis LLC, HCFMUSP and FFM.

It shall enable, via Federated Learning, to validate and train models for AI applications on health using HC-FMUSP data, which holds the reality of public health in Brazil.

Application of an OPEN RAN architecture dedicated to 5G applications in the digital health context

This project, to be developed by NIT-HCFMUSP, was enabled via an Agreement signed in the end of 2021 between ABDI, HCFMUSP, and FFM.

It will enable to implement and asses 5G technology using the Open RAN architecture

concept in real cases of the health area. Open RAN (Open Radio Access Networks) is a movement that attempts to democratize parts of telecommunications networks and, thus not depend on major telecom equipment vendors.

InspirAr - Digital Monitoring to Assist Asthma Patient Treatments

This study, developed by FMUSP's FOFITO, was enabled by means of a Contract signed in 2021 between Siemens Astrazeneca do Brasil Ltda., LLC, FMUSP and FFM.

It shall enable to develop a functional and scalable application that gathers asthma patient

care strategies, with aim to enable the patient to follow their symptoms, medication use, control their physical activity, and inform themselves about asthma, with the monitoring of qualified professionals.

7 Tesla Resting State Denoising

This project, developed by NIT-HCFMUSP, was enabled by means of a Contract signed in 2021 between Siemens Healthcare Diagnosis LLC, HCFMUSP and FFM.

It will enable using advanced AI techniques, specifically in pattern recognition, to better

distinguish the signal caused by brain activity of the noise signal, allowing Functional Magnetic Resonance Imaging (fMR) results in less noisy rest conditions, which shall ultimately facilitate image interpretation by the medical team.

Support platform for clinical decisions with machine learning in medical images

This study, developed by NIT-HCFMUSP, was enabled by means of an Agreement signed in 2021 between Siemens Huawei do Brasil Telecomunicações LLC, HCFMUSP and FFM.

It will enable creating an artificial intelligence algorithm distribution and automation channel for medical images in Brazil.

4.0 Cushion: Reactive intelligent system of a seat with clinical monitoring for wheelchairs

This study, developed by IMRea, was enabled via an Agreement signed in 2021 between Finep, HCFMUSP, Dilepé Ortopedia Técnica LLC. and FFM.

The project intends to develop the 4.0 Cushion, an intelligent system for clinical monitoring, which

captures the user's variables and provides automatic adjustments to the wheelchair seat, preventing complications of long periods seated in the same position, such as lower back pain, and pressure ulcers.

Predictive Monitoring in the Care Centered on People Using Smart Watches

This study, developed by IMRea and NIT-HCFMUSP, was enabled via a Cooperation term signed in 2021 between Samsung Eletrônica da Amazônia LLC, HCFMUSP, and FFM.

The study is carried out with volunteer patients in COVID-19 recovery, which collects vital sign and

sleep measurements via smart watches and validates their use, in comparison to gold standards, in the context of early intervention of medical conducts.

Health Connect - Development of technological solutions related to use of Communication, Collaboration, Cybersecurity, and Internet of Things technologies for applications in minimizing human exposure to contamination in hospital operations and remote assistance for patients treated at home

This project, developed by NIT-HCFMUSP, was enabled by a Technical-Scientific Cooperation term signed in 2020 by CISCO Comércio e Serviços de Hardware e Software do Brasil LLC, HCFMUSP, and FFM and continued in 2021.

Its main goal is implementing a pilot-project of the Health Connect Platform, formed by three fronts that apply 4.0 Revolution technologies in combating COVID-19. These fronts offer support to operations in the ICU, Infirmary, and remote care for patients treated at home.

RADVID-19 - Development and implementation of a smart platform with algorithms capable of identifying coronavirus markers in x-ray and CT scan images

This study, developed by NIT-HCFMUSP, was enabled via a Partnership Term signed in 2020 between the Itaú Foundation for Education and Culture, HCFMUSP, and FFM and continued in 2021.

The same project also counted on the support from Petrobras -Petróleo Brasileiro S/A, via a Donation Term.

Its main goal is facing the pandemic caused by the new coronavirus (SARS-CoV-2) using Artificial

Intelligence in radiology exam analysis, improving the precision of the exam, and forming a base of positive cases to subsidize studies and research related to COVID-19.

In 2020, the RadVid-19 project received the Abril & Dasa for Medical Innovation Award (Special COVID-19 Edition)

Open innovation for the health sector in the fight against COVID-19.

This project, to be developed by NIT-HCFMUSP, was enabled via an Agreement signed in the end of 2020 between the IDB, HCFMUSP, and FFM and continued in 2021.

Its main goal is prospecting and testing innovative solutions and research, Development, and Innovation projects (R&DI) to combat and mitigate consequences deriving from the COVID-19 crisis.

InterRadPlataform - Integrated image exam requesting and scheduling

This project, to be developed by NIT-HCFMUSP, was enabled via an Agreement signed in the end of 2020 between the ABDI, HCFMUSP, and FFM and continued in 2021.

It will enable to develop an Exam Request System that supports physicians in requesting the

best exam for their patient, as well as a Scheduling System that automates the imaging exam scheduling process with the use of artificial intelligence.

Technologies of the 4.0 industry applied to the patient monitoring process

This project, to be developed by NIT-HCFMUSP, was enabled via an Agreement signed in the end of 2020 between the ABDI, HCFMUSP, and FFM and continued in 2021.

It will enable to perform, via the pilot-project, a study of 4.0 industry technologies applied to patient monitoring process in their entire journey of relationship with the hospital/doctor, including pre admission, admission, and post admission.

Application of 4.0 industry technologies in a rehab equipment connected to the Platform LucyIO

This project, to be developed by IMRea, was enabled via an Agreement signed in the end of 2020 between the ABDI, HCFMUSP, and FFM and continued in 2021.

It will enable to carry out a study about the application of 4.0 industry technologies in medical

equipment, using the productive process of an intelligent rehab equipment (cycle-ergometer) connected to a digital rehab platform - LucyIO Platform.

Structuring of an innovation programmed dedicated to generating new businesses and accelerating the development of startups in the Health area

This project, to be developed by NIT-HCFMUSP, was enabled via an Agreement signed in the beginning of 2020 between SDE, HCFMUSP, and FFM and continued in 2021.

With that initiative, they seek to create the conditions to transform scientific and technological

knowledge from the HCFMUSP into new services and Products, via technology transfer, generating business ideas, and accelerating the development of startups in health.

Implementation of a Research and Development Lab for projects related to Artificial Intelligence with precision medicine applications and a diagnoses in general

This project, developed by NIT-HCFMUSP, was enabled by a Technical-Scientific Cooperation Term signed in 2020 by Siemens Healthcare Diagnósticos LLC, HCFMUSP, and FFM continued in 2021.

The proposal includes the implementation of a Research and Development Lab for projects related to Artificial Intelligence with applications in precision medicine and diagnoses in general.

Use of artificial intelligence and a mobile application to estimate the coverage of vaccination protection

This project, developed by the USP's Innovation Center, was enabled via an agreement made in the end of 2019 between FFM and the Health Department, and was continued in 2021.

The project includes the development of an application that uses artificial intelligence to digitize

the population's Vaccination Booklets; inform the health agent which vaccines the person still needs to receive; and sends the information collected to the Government data base, SI-PNI.

Control center for thermolabile drug logistics

This project, developed by NIT-HCFMUSP via an agreement signed between the Health Department and FFM in the end of 2017, is justified by the HD's need to structure a logistics control center for thermolabile medications that could be

operationalized and integrated by any supplier from the Health department, whether current or future.

Those activities commenced in 2019 and continued in 2021.

National Medication Control System Project - SNCM - PHASE II

This study, developed by NIT-HCFMUSP, was enabled by means of an Agreement Letter signed in 2020 between UNDP, ANVISA, HCFMUSP, and FFM.

Continuing the project called "Structuring the Products Surveillance and Monitoring System", the goal is continued support to ANVISA, during the start of the implementation period of the National

Medication Control System, in the activities of support to the regulated sector, validation of the developments made for the end solution and improvement of the standards, prototypes, tests, and innovations.

Those activities were ended in 2021.

Developing and testing the Motherly application: an automated intervention to promote the mental health of young mothers

This research was initiated in 2018 by FMUSP's Psychiatry Department, via contracts signed between FFM, FMCSV and between FFM and the GCC. In 2019, a Grant was signed with the Open Society Policy Center, with aim for its continuity.

This study will enable developing an application (app) that will monitor pregnant women, in order to ensure the mental health of young mothers. The app will be installed in patients' smartphones, so they may report their daily routine

and receive support messages that ensure their well-being.

The project seeks to obtain data to either prove or not the improvement of patients' mental health and will follow mothers as of the second quarter of pregnancy until the first three months of the child, also measuring the babies development in the beginning of life.

These activities continued in 2021.

Systematization of the Xenotransplant Method in Brazil

This project, started in 2018 and developed by HCFMUSP's Immunology Department, was enabled through a Technical-Scientific Cooperation Term signed between EMS S/A and FFM.

Due to the progressive growth of candidates in a organ waiting list, xenotransplant (transplant

performed between different species) offers the best perspective to fulfill that requirement.

Due to the need for additional organs in Brazil and the new perspectives of clinical application of swine xenotransplant, this project aims to systematize such new methodology in Brazil.

These activities continued in 2021.

Research Projects



RESEARCH PROJECTS

FFM participates in relevant projects, focused mainly on prevention and treatment of diseases that affect the health of the Brazilian population.

Clinical evaluation of the antidepressant effect of the use of probiotics in bipolar disorder and potential mediating effects of systemic and intestinal inflammatory markers of the microbiota.

This research, developed by HCFMUSP's IPq, was enabled via an Agreement signed in the end of 2021 between the Milken Institute and FFM.

Its goal is evaluating the effect of supplementation with probiotics in the

improvement of depressive symptoms in patients carrying Bipolar Disorder, along with the monitoring of the levels of intestinal and serum biomarkers.

Surveillance and discovery of Viruses in Brazil

This study, developed by FMUSP's Infectious and Parasitic Diseases Department, was enabled via an Agreement signed in 2021 between Abbott Laboratories, FFM, and FMUSP.

Its goal is understanding the extension of viral diversity in human populations and trace new viral strains.

Ultraprocessed food consumption and cancer incidence and mortality: estimating current and future projected burdens in Europe considering different scenarios

This research, developed by the FMUSP Preventive Medicine Department, via an Agreement made between Imperial College of Science, Technology and Medicine and FFM, commenced in 2021.

Through this study it will be possible to investigate and evaluate the associations between the consumption of ultraprocessed foods and the risks of developing cancer, cardiometabolic diseases and mortality.

Intervention to implement the monitoring of continued healthcare for people living with HIV/Aids

This research, developed by the FMUSP Preventive Medicine Department, via an Agreement made between ViiV Healthcare UK Ltd, FMUSP and FFM, commenced in 2021.

Through this study it will be possible to test an intervention to improve the continued monitoring

in health care to people with HIV infection associated to SUS services, with the hypothesis that such intervention should bring improvements to the Clinical Monitoring System, comparing the effects with two control groups of services.

Quantitative Evaluation of Intracranial Pressure Curves Obtained by a Non-Invasive Method in Patients with Traumatic Brain Injury

This study, developed by HCFMUSP's Neurology Clinic, was enabled by means of a contract signed in 2021 between Braincare Desenvolvimento e Inovação Tecnológica S/A and FFM.

It shall enable evaluating intracranial pressure and complacency with a new non-invasive method of ascertainment in patients victims of Brain Trauma of all severities.

Analysis of Multi-criteria Decisions in support to technology Incorporation Processes in Oncology

This research, developed by ICESP, was enabled by a contract signed in 2021, between Produtos Roche Químicos e Farmacêuticos S/A and FFM, whose project was approved in the "Harpy Connection" public notice of the company.

It will enable to develop a multi-criteria decision analysis method able to support prioritization and resource allocation processes in high-cost technologies focused on cancer treatment in a hospital background.

ARBOBIOS: Traditional study for the identification, characterization and validation of diagnostic tests and markers of arboviruses' severity

This study, developed by FMUSP's Infectious and Parasitic Diseases Department, was enabled via an Agreement signed in 2021 between bioMérieux S.A., bioMérieux Brasil, FFM, and FMUSP.

It aims is to identify and validate prognostic biomarkers for diseases caused by the Dengue (DENV), Chikungunya (CHIKV), and Zika (ZIKV)

Viruses, which allow early stratification of the risk of developing the evolutionary forms of diseases that represent greater morbidity and mortality: severe dengue (DG), post-Chikungunya chronic inflammatory joint disease (post-CHIKV-ADIC), and congenital ZIKV syndrome (SCV) with neurological impairment, respectively.

Alzheimer's disease in the olfactory epithelium: correlation with the environment

This research, developed by the LIM, was enabled via an Application signed in 2021 between Alzheimer's Association and FFM.

Despite the growing recognition of air pollution as a modifiable risk for dementia, the

mechanisms of how air pollution influence cognitive decline are not yet clear.

This study intends to research the effects of environmental pollution, quality of life rates, and the development of Alzheimer's Disease in residents of the city of São Paulo.

Brazilian population genomics

This study, developed by CEGH-CEL, was initiated in 2021 with own resources.

It aims to enable raising the number of genotyped samples of the Brazilian population, as

well as organizing the data generated with the aid of the CEGH-CEL infrastructure, in a way that the data may be shared with other researchers.

Clinical veterinarian study using the Zika virus (ZIKV) as an oncolytic therapy against spontaneous canine CNS tumors

This study, developed by CEGH-CEL, was initiated in 2021 with own resources.

It shall enable to assess the safety and effectiveness of ZIKV as an oncolytic agent in canine

patients with intracranial tumors inoculated with the virus, advancing the understanding of a potential new therapeutic method for dog and human CNS tumors (Central Nervous System).

Randomized double-blind clinical trial with active controls to evaluate safety, immunogenicity, and consistency of the immune response by batches of tetravalent influenza vaccine (inactivated and fragmented) from Instituto Butantan

This study, developed by HCFMUSP's Infectious and Parasitic Diseases Division, was enabled by means of a Contract signed in 2021 between the Butantan Institute, HCFMUSP, and FFM.

It will enable to verify if the quadrivalent vaccine produced by the Butantan Institute is not inferior as to immunogenicity and is as safe as the trivalent vaccines from the same producer.

Depression treatment in elders with repetitive transcranial magnetic stimulation via the Theta-Burst method

This study, developed by the IPq, was enabled by an Agreement signed in 2021 between The Chancellor Masters and Scholars of the University of Oxford and FFM.

Through this research it will be possible to develop local expertise in the use of high-end techniques for neuroimaging and exploration of response markers to the magnetic stimulation in geriatric depression.

Depression treatment in elders with repetitive transcranial magnetic stimulation via the Theta-Burst method Clinical, randomized, double-blind trial

This study, developed by the IPq, was enabled via a contract signed in 2020 between NARSAD – The Brain and Behavior Research Fund and FFM, and continued in 2021.

It shall enable to verify if the Theta Burst Stimulation is a therapeutically effective alternative

and with little side effects in depression treatment of elderly patients who do not tolerate the use of antidepressants, or have been resistant to that sort of medication.

Detection of iron and aggregation of proteins by Magnetic resonance Imaging (MRI) to evaluate the pathology and progression of Alzheimer's disease: voxel to voxel histological validation

This study, developed by InRad, was enabled via a Subaward signed in 2021 between The Regents of the University of California – Berkeley and FFM, with NIH subvention.

Through this research it will be possible to validate via histology the MRI method to detect iron and protein build-up, with the intent of assessing the neuropathological progression associated to Alzheimer's disease for future clinical use.

BERTHA: Interstitial Lung Disease associated with Rheumatoid Arthritis: Characterization of Pulmonary disease Progression

This study, developed by the ICHC Rheumatology Service, was enabled via an Agreement Term signed in the beginning of 2021 between Associação Beneficente Síria - Hospital do Coração, HCFMUSP and FFM.

It will enable to characterize interstitial lung disease (ILD) associated to rheumatoid arthritis (RA) and identify a biomarker signature that, associated to clinical variables, is capable of identifying the patient under risk of progressing to ILDRA.

Production of pituitary cells from iPSC for diagnosis expansion and treatment of hypopituitarism

This study, forwarded by the HCFMUSP Endocrinology and Metabolism Department, via FFM, to the Health Department for presentation and approval of projects within the scope of **PRONAS**, was approved in the end of 2021.

The major objective of the study is establishing a methodology to obtain pituitary cell models in patients with congenital hypopituitarism.

Establishing a production platform for genetically reprogrammed immune cells to fight onco-hematological diseases

This study, forwarded by the HCFMUSP Hematology and Cellular Therapy Service, via FFM, to the Health Department for presentation and approval of projects within the scope of **PRONON**, was approved in the end of 2021.

The study aims to establish a multiple platform to produce

immune cells reprogrammed with CARs anti-CD19 and anti-CD99, based on peripheral blood cells and/or cryopreserved SCUP, with intent of applying them in the future as Cellular Therapy products against onco-hematological diseases.

Impact of a Cancer-Associated Thrombosis Treatment Program on clinical outcomes in oncology patients from three public institutions of the State of São Paulo

This study, forwarded by ICESP, via FFM, to the Health Department for presentation and approval of projects within the scope of **PRONON**, was approved in the end of 2021.

The study aims to implement the ICESP multiprofessional program for treating thrombosis

associated to cancer in two public institutions of oncology treatment in the State of São Paulo and compared the clinical and pharmaceutical-economic outcomes before and after the program implementation.

Epidemiological, molecular and translational study in head and neck squamous cell carcinoma: applications in diagnosis and treatment

This study, forwarded by ICESP, via FFM, to the Health Department for presentation and approval of projects within the scope of **PRONON**, was approved in the end of 2021.

This study will enable to investigate several aspects of the head and neck squamous cell

carcinoma, focused on non-smoking and non-elite patients, as well as in youth, seeking improvements in prevention strategies (primary and secondary), diagnosis and treatment, based on the integration of epidemiological and molecular data.

Acceptability and Performance of a Portable, Automated Augmented Reality Optical Biopsy Technology for Gastrointestinal Cancer Screening: A Clinical Study in Brazil

This project, developed by ICESP and enabled via an Agreement signed between Baylor University and FFM, with NIH subvention, began in 2021.

Through this research it will be possible to evaluate the High Resolution Microendoscopy technology with Augmented Reality in terms of performance, efficiency and impact.

Clinical and biological indicators of early aging and dementia in adults and elders with Down syndrome: characterization of clinical demands and intervention perspectives

This study, forwarded by IPq, via FFM, to the Health Department for presentation and approval of projects within the scope of **PRONAS**, was approved in the end of 2020 and commenced in the end of 2021.

It will enable to establish the clinical-functional indicators and investigate the biological markers of

early aging and dementia in Down Syndrome and characterize health care demands and intervention perspectives, for the promotion of mental health and prevention of cognitive and functional decline in that population.

Development of a broad instrument to identify individuals with high-risk for hereditary cancer

This study, forwarded by ICESP, via FFM, to the Health Department, for presentation and approval of projects within the scope of **PRONON**, was approved in the end of 2020 and awaits authorization from the HD to be started.

It will enable developing a simplified and broad score system to identify individuals with a high risk of hereditary cancer and who may benefit from risk reduction measures.

Research activities with a focus on infectious diseases that affect public health and vulnerable populations particularly in the Amazon region, including arboviruses

This study, developed by IMT-FMUSP was enabled via an Agreement made between FFM and Fondation Mérieux in the end of 2020, and continued in 2021.

The research objective is developing research programs and activities with a focus on infectious diseases that affect public health and vulnerable populations particularly in the Amazon region.

Validation of the Global Development Scale (GSED) for the Brazilian Context - Phases 1 and 2

This project, developed by HU-USP in two phases, was enabled via Agreements signed in 2020 between the World Health Organization (OMS) and FFM and continued in 2021.

The main goal of the project is validating a robust, universal, and psychometrically solid scale for the Brazilian context to measure the development of children from zero to three years of age through measurement instruments.

Treatment of negative symptoms of schizophrenia with transcranial direct current stimulation (tDCS): clinical, randomized, sham-controlled, double-blind trial

This study, developed by IPq, was enabled via an Agreement signed in the end of 2020 between the Schizophrenia International Research Society and FFM and continued in 2021.

It shall enable to assess the effectiveness of a specific neuromodulation technique (brain photostimulation) in treating negative symptoms of schizophrenia patients, evaluating the magnetic resonance with spectroscopy.

LatAm FINGERS - Latin American Lifestyle Intervention Initiative to Prevent Cognitive Decline

This study, developed by HCFMUSP's Neurology Clinic, was enabled via an Application signed in the end of 2020 between the Alzheimer's Association and FFM and continued in 2021.

It will enable to assess a flexible intervention on lifestyle, compared to another more systematic

active intervention, in 1,400 cognitively asymptomatic elders with a risk of cognitive compromise, aiming to prevent compromised cognition and dementia.

PREVINE-TB - Implementation of New Strategies to Prevent TB among people living with HIV in Brazil

This research, developed by FMUSP's Preventive Medicine Department, was enabled via a Statement signed in 2020 between FFM and the Johns Hopkins University, with NIH subvention, and continued in 2021.

It shall enable to operationalize the latent infection diagnosis of tuberculosis, via a lab trial of gama interferon release.

Association of Systemic Atherosclerosis with Neurodegenerative and Cerebrovascular Disease: A Clinical Pathological Study

This study, developed by the FMUSP Geriatrics Discipline, was enabled via an Application made between FFM and the Alzheimer's Association in the end of 2020, and continued in 2021.

Through this research it will be possible to investigate the association between atherosclerosis in coronary, carotid, and cerebral arteries with neurodegenerative diseases and vascular dementia, defined by clinical and neuropathological criteria.

Bloomberg Initiatives for Global Roadway Safety in São Paulo: 2020-2021

This research, developed by LIM 40, was enabled via a Subagreement signed in 2020 between FFM and the Johns Hopkins University and continued in 2021.

It is the continuation of the project called "Bloomberg Initiatives for Global Roadway Safety : Observational studies of speed, use of helmet, seat belt, child restraint equipment, and driving under

the influence of alcohol, in the city of São Paulo", where it is expected to continue providing data on the major risk factors in traffic accidents, including the use of alcohol by drivers, lack of seat belt use, lack of child restraint equipment, inappropriate helmet use by motorcyclists, and speeding, with the expansion of this methodology to other cities in the countryside of São Paulo.

Lagitudinal genomics of Anopheles Darlingi landscape and ecology

This study, developed by the Epidemiology Department of the Public Health School of USP, by means of a contract signed between FFM and Health Research Incorporated, with NIH subvention, was initiated in 2020 and continued in 2021.

With this study they expect to identify and quantify the main factors (ecological, entomological, socioeconomic) that drive the maintenance and proliferation of vector species in malaria hotspots in both Brazil and Venezuela, as well as the genomic signatures of the primary vector *An. darlingi* adaptation, on wider scales.

BASE – Games for Socio-emotional Learning: an early intervention program in child education

This study, developed by FMUSP's Pediatrics Discipline, was enabled via a contract signed in 2020 between the Harvard Graduate School of Education and FFM, and continued in 2021.

It will enable to evaluate if BASE, a kit with 13 games for use in the child education environment is effective for increasing socio-emotional skills in children, from three to five years old, that attend child education units.

Brazilian Study of Autopsy and Imaging

This study, developed by FMUSP's Pathology Department, was enabled via a contract signed in 2020 between the Bill and Melinda Gates Foundation and FFM, and continued in 2021.

It shall enable to investigate the viability and effectiveness of virtual autopsies, applied according

to different criteria and organic systems, confronting the performance of two autopsy methods: **a)** virtual (via imaging methods – Computerized Tomography and Magnetic Resonance; and **b)** conventional.

Qualiaids-BR Cohort: Effects of organizing a treatment service in reaching and maintaining HIV viral suppression and in the cure of co-infection with tuberculosis in a cohort of SUS patients that initiated antiretroviral treatment from 2015 to 2018: Part 1 - Construction of a base and descriptive analysis of the cohort data

This research, developed by the FMUSP Preventive Medicine Department, was enabled via an Agreement Letter signed in the end of 2020 between FFM and OPAS, and ended in 2021.

Through this study it was possible to analyze the effects of organizing the treatment service in

reaching and maintaining viral suppression, and in the cure of tuberculosis of the HIV/TB co-infection cases, in the cohort of people that started HIV antiretroviral treatment between June 2015 and June 2022.

Partnership for Prevention of HPV-Associated Cancers in People Living with HIV: Brazil, Mexico and Puerto Rico

This study, developed by the HCFMUSP Immunology Department, was enabled via a Contract signed in the end of 2019, between Joan & Sanford I. Weill Medical College of Cornell University and FFM, with NIH subvention, and continued in 2021.

It will enable to research the best strategies to prevent tumors caused by HPV (human papillomavirus) in HIV-positive women and men, in Latin America and the Caribbean.

Evaluation of the efficacy of Nivolumab in prostate Adenocarcinoma with and without abnormalities in DNA repair paths

This project, developed by ICESP and enabled via a Contract signed between the Conquer Cancer Foundation of ASCO and FFM, began in 2019 and continued in 2021.

The research aims to determine the antitumoral effect of Nivolumab in castration-resistant metastatic prostate cancer patients after progression to taxane-based treatment in DRD positive and negative tumors.

Diagnosis and monitoring of Alzheimer's disease with the use of *locus ceruleus* volumetry

This project, developed by InRad and enabled by a Collaborator Letter issued by the Grinberg Laboratory – University of California San Francisco, started in 2019 and continued in 2021.

The study's objective is developing an algorithm based on an MRI, histologically validated to assess volumetric alterations of *locus ceruleus*, which capture the neuropathological progression associated to Alzheimer's Disease for clinical use.

Establishing a reference genome for the Brazilian population – Brazilian Reference Genome Project

This project, developed by the USP's Biosciences Institute, was enabled via an Agreement made in the end of 2019 between FFM and the Health Department (HD), and continued in 2021.

Our population is quite heterogeneous as to their genetics, which lacks investigation. The study

proposes the genomic sequencing and creation of a clinical and genomic database of the Brazilian population, through cohort studies funded by the HD. That will enable a better diagnosis/prevention of diseases with genetic behaviors in Brazilian and design public health policies based on our genetics.

Diagnosis of the main barriers to the treatment of atrial fibrillation in primary care and in a community hospital

This project, developed by HU-USP, enabled via a contract signed between FFM and the University of Birmingham, began in 2019 and continued in 2021.

The study aims to investigate, in patients with atrial fibrillation and along with health professionals

that assist those patients, the understanding of the existing barriers to the implementation of proper treatment, using antagonistic vitamin K anticoagulants in primary care.

Trends in of greenhouse gas emission according to Brazilian nutrition using the GGDOT (Greenhouse Gas and Dietary choices Open source Toolkit)

This research, developed by FMUSP's Preventive Medicine Department and enabled via a contract signed between FFM, FMUSP, University of Manchester, and University of Sheffield, started in 2019 and was ended in 2021.

The study had the aim of evaluating the trend of greenhouse gas emissions originated from Brazilian eating habits and verify its relationship with the changes in the population's eating habits, considering the food processing level.

Intervention for the improvement of clinical monitoring in outpatient care services to people with HIV

This research, developed by FMUSP's Preventive Medicine Department and enabled via a contract signed between FFM, and ViiV Healthcare UK Ltd. started in 2019 and was ended in 2021.

The study intended to promote the effective implementation of the use of the Clinical Monitoring System in ambulatory services for HIV infection care in four regions of the State of São Paulo.

Unraveling causal factors related to neurotoxicity of the tau protein in Alzheimer's disease

This research, developed by FMUSP's Geriatrics Discipline and enabled by a Collaboration Letter issued by the Grinberg Laboratory of the University of California, started in 2019 and continued in 2021.

Via this study it will be possible to discover which are the specific cellular factors that contribute to the accumulation of tau in brain cells, thus advance the understanding of the cellular mechanisms of neurodegeneration and identify therapeutic targets of Alzheimer's.

Evaluate the prevalence trend in serological markers for infectious diseases liable to blood transfusion among blood donors in three national blood centers: Pró-Sangue/Hemocentro Foundation of São Paulo (FPS/HSP), Hemocentro de Minas Gerais (HEMOMINAS) and Hemocentro de Pernambuco (HEMOPE)

This research, developed by FMUSP's Infectious and Parasitic Diseases Department and enabled via a contract signed between the Vitalant Research Institute, FFM, and FMUSP started in 2019 and continued in 2021.

data base of blood donors in the participating blood centers (Hemorio, Hemope, Hemominas e Fundação Pró-Sangue), as well as continuing the surveillance of epidemics related to arboviruses and new infectious agents.

This study will enable proceeding with the cohort of patients with sickle cell anemia and the

The use of pre sexual exposure prophylaxis (PrEP) by people with high exposure and vulnerability to HIV in the context of Brazilian health services: effectiveness of on-demand use and the predominantly remote clinical follow-up protocol - (Combina Project - phase 3)

This research, developed by the FMUSP Preventive Medicine Department and enabled via an Agreement Letter signed in 2019 between FFM and OPAS, and ended in 2021.

protocols for the use of pre sexual exposure prophylaxis (PrEP) in a cohort of individuals with extra risk for HIV infection monitored for a period of four years in public health services.

With that study it was possible to analyze the effectiveness of different clinical schemes and

Consultancy to develop a curriculum and collect data to evaluate parental intervention in a group in Boa Vista

This study, developed by FMUSP's Pediatrics Discipline, and enabled via a contract signed in 2019 between FFM, and the Inter-American Development Bank - IBD, continued in 2021.

The pilot-project involved approximately 800 children, from 19 to 12 months of age, born in vulnerable families of the west side of the São Paulo state capital.

The objective is raising awareness among families on the importance of stimulating their babies, since birth, by talking, playing, and interacting with them in many ways, without the need to rely on expensive and sophisticated toys.

The second stage will be developed in the city of Boa Vista (RR), a city with more than 300 thousand residents, and the goal is impacting all vulnerable children, up to two years old.

Clinical, epidemiological and histological study of neoplasms in the population living with HIV/Aids and in individuals without HIV infection who reached death at ICESP

This project, developed by the HCFMUSP Infectious and Parasitic Diseases Division and enabled by a Purchase Order issued in the name of FFM, by The George Washington University, started in 2018.

In 2019 and 2021, Agreements were signed with NIH subvention to continue the research in 2021 and 2022, respectively.

Its purpose is to comparatively analyze neoplasm in individuals infected and not infected by HIV who died, followed by ICESP.

Effect of inhalation terlipressin on coagulation, tissue perfusion, hemodynamics, respiratory tract mucosa and early mortality in the rescue of controlled hemorrhagic shock in pigs

This research, commenced in 2018 and continued in 2021, is developed by the Digestive System Surgery Discipline of FMUSP's Gastroenterology Department, and was enabled by means of a Partnership Agreement signed between the Ferring Lab, USP, and FFM, whose project was approved in an innovation notice of the company.

The hypothesis is that terlipressin strengthens the "protective" effect of the organ's lesion, given it might have a direct action on the alterations observed in microcirculation. Also, it may have a beneficial hemodynamic effect, preserving systemic pressure and the portal and renal flow.

Reinforcing the assistance upon violence against Women in sexual and reproductive health of primary care in São Paulo

This is a multicultural study funded by NIHR-UK, through Bristol University (UoB) and LSHTM. The study began in 2018, continued in 2021, and is developed by FMUSP's Preventive Medicine Department.

The initiative seeks to implement an intervention for violence against women in eight

basic Health Units (UBS) and evaluate: changes in the identification, reception, and referencing of cases of violence against women; and changes in the sexual and reproductive health in the experiences of violence by the women identified in the services.

Study of the Functional Treatment of Disabling Pain Resulting from Knee Osteoarthritis in a Public Health Service Program

This research, developed by IMRea, was approved in the end of 2018 by the Health Department, within the scope of PRONAS. Its activities commenced in 2021.

This study aims to define a hierarchy for the current rehab treatment of knee osteoarthritis in SUS, in patients with intense pain and accentuated osteoarthritis, associating them to conventional

treatment described by Skou et al., 2015, to cognitive orientation, to the segmental desensitization with paraspinous block (Imamura et al., 2016), or with the

radial and focal shock waves and treatment with intra-articular injection of hyaluronic acid.

Treatment of thyroid carcinoma cervical metastasis by percutaneous thermal ablation guided by ultrasound

This research, developed by ICESP, was approved in the end of 2018 by the Health Department, within the scope of PRONON. Its activities started in 2020 and continued in 2021.

Through this study it will be possible to bring new information about thyroid cancer diagnosis and treatment, notably in the sick who present cervical metastasis lesions that may be subject to percutaneous treatment via thermal ablation.

Evaluation of the impact of the Family Health Program in child development - ROC Cohort

This study, developed by FMUSP's Pediatric Department, by means of a contract signed between FFM and the Swiss Tropical and Public Health Institute, began in the end of 2018 and continued in 2021.

Through this study it will be possible to investigate the impact of the adversities, in the beginning of life, in children and adults and identify the most critical interventions to improve the population's health in low and average income countries.

Randomized trial on enteral use of glutamine to minimize thermal lesions - RE-ENERGIZE

This study, developed by HCFMUSP's Anesthesiology Department, was enabled by means of a contract signed in 2018 between the Kingston General Health Research Institute, HCFMUSP, and FFM, and continued in 2021.

Its objective is obtaining information about the use of glutamine as a nutritional supplement in severely burnt patients, which are under greater risk of developing infections.

The effect of the Visitation Program for Young Pregnant Women over Child Development: A Pilot Study

This research was initiated in the end of 2018 by FMUSP's Psychiatry Department, via a contract signed between FFM and the Lemann Institute, and ended in 2021.

This study consisted in the encoding and secondary analysis of data collected as part of a research project in São Paulo, Brazil ("Father-son interactions and child language development in low-income families in Brazil").

Its main objective was to identify the amplitude of the variation in the quantity and quality of language inputs that mothers, in a poor urban area in Brazil, use during the playful interaction with their children at 12 months of age, determine its variations and understand the similarities and differences in language inputs from parents in Brazil versus the United States.

Randomized clinical essay controlled by clusters to reduce the blood pressure among the elderly with hypertension and depression attended by the Family Health Strategy in São Paulo, Brazil.

This study, developed by LIM 23, by means of a contract signed between FFM and the Harvard T. H. Chan School of Public Health, was approved in the end of 2018 and ended in 2021.

In that study it was possible to compare the effectiveness and the cost-effectiveness and the improvement in the control of blood pressure between the control group (routine care) and the group that received psychosocial intervention.

Classifiers for early diagnosis of Autistic Spectrum Disorder using sight tracking

This project, developed by IPq, was approved in the end of 2017 by the Health Department, within the scope of PRONAS. Its activities commenced in 2020 and continued in 2021.

Its main goal is developing computational methods that contribute with an early and more

objective diagnosis of the Autistic Spectrum Disorder (ASD), based on sight tracking signs, as well as developing cluster ratings and analysis to define ASD subtypes.

Breast Portraits

This project, developed by ICESP, was approved in 2016 by the Health Department, within the scope of PRONON. Its activities started in 2019 and continued in 2021.

Through this study it will be possible to analyze the molecular alterations of breast cancer via

complete exoma sequencing; correlate the molecular findings with the other data; and develop a computerized system that integrates different data bases of patients with breast cancer for integrated analyses.

Randomized study to prevent vascular events in HIV – REPRIEVE (A5332)

This research, developed by the FMUSP Disciplines of Immunology and Preventive Medicine, through agreements signed between FFM and Partners Healthcare (founded by Brigham

and Women's Hospital and Massachusetts General Hospital), with NIH subvention, started in 2017.

Its goal is to evaluate, in patients treating HIV infection, the effects of pitavastatin in the prevention of major cardiovascular adverse events.

From basic science to clinical practice: infusion of modified lymphocytes to promote viral eradication - Study BELIEVE

This research was started in 2017 by LIM 60, via a contract signed between The George Washington University and FFM, with NIH subvention, and ended in 2018. In 2018, the sponsorship of the study was transferred to Joan & Sanford I. Weill Medical College of Cornell University and ended in 2021.

With that study it was possible to comprehend ways to enhance the ability of cytotoxic T lymphocytes in eliminating HIV; amplify the function of NK cells; and utilize T cells, NK cells, and antibody-mediated responses in the context of HIV infection in adults and children.

Binding and retaining people with HIV in public health services: a demonstrative project in the city of São Paulo, Brazil.

This research, developed by the FMUSP Preventive Medicine Department, via an agreement made between FFM and the Aids Healthcare Foundation Brazil, began in 2017 and continued in 2021.

binding and different retention patterns of people infected by HIV in public health services in the city of São Paulo, as well as analyzing the effects of health technologies, which aim to reduce those events in the Brazilian context.

It will enable studying the frequency, the access barriers, and the vulnerability profiles of

TOC Project - Research of Brain Markers associated to Obsessive-Compulsive Disorder

This research developed by IPq, through a contract signed between FFM and the Research Foundation for Mental Hygiene (The New York Psychiatric Institute) with NIH subvention, began in 2017 and continued in 2021.

The study will enable to identify reproducible brain markers that correspond to obsessive-compulsive disorder (OCD) behaviors, which may eventually be used to reveal manifestations of OCD and other mental disorders.

Arbobios: A Translational study to identify, characterize, and validate severity biomarkers in arboviruses infection

This study, developed by USP's IMT, via an agreement between FFM, USP, FAPESP and BioMérieux S/A signed in 2017, continued in 2021.

that allow an early stratification of the risk of developing evolutionary forms of the diseases that represent greater morbidity and mortality.

It will enable identifying prognostic biomarkers for the diseases by Dengue, Chikungunya and Zika,

Clinical Trial phase III for the evaluation of the effectiveness and safety of Dengue 1, 2, 3, 4 (attenuated) vaccines of the Butantan Institute

This research was initiated in 2017 by LIM 60, via a contract signed between FFM and the Case Western Reserve University, with NIH subvention. In 2020, the sponsorship of the study was transferred to Emory University and ended in 2021.

The vaccine was produced with weakened viruses, which have no potential to cause the disease, and should protect against the four dengue serotypes with a single dose.

Clinical Trial phase III for the evaluation of the effectiveness and safety of Dengue 1, 2, 3, 4 (attenuated) vaccines of the Butantan Institute

This study, developed by HCFMUSP's immunology Department, was enabled via a Technical-Scientific Cooperation Agreement signed in 2016 between the Butantan Foundation, HCFMUSP, and FFM and continued in 2021.

At this time, there is no licensed vaccine for dengue prevention with protection against the four dengue serotypes. Thus, its objective is evaluating the effectiveness and safety of Dengue 1, 2, 3, 4 Vaccine (attenuated) produced by the Butantan Institute.

Study of the Incidence of influenza among children and youth in Araraquara, Brazil, 2016-2017

This study, developed by IMT-FMUSP, through a contract signed between HCFMUSP, FFM and Sanofi Aventis Farmacêutica Ltda., commenced in the end of 2016 and continued in 2021.

It is an amendment to the project called "Study of the Incidence of dengue in Brazil, in municipalities with high and medium endemicity

Goiânia - GO and Araraquara- SP" (page 83 of this report), whose main goal is to determine the incidence of symptomatic infections by the influenza virus and other respiratory viruses in the cohort studied, which could subsidize the evaluation of future vaccination strategies against dengue.

A double-blind 2b/3 phase on the safety and effectiveness of injectable cabotegravir compared to daily oral tenofovir disoproxil fumarate/emtricitabine for pre-exposure prophylaxis in HIV-uninfected cisgender men and transgender women who have sex with men

This research, developed by the FMUSP's Disciplines of Immunology and Preventive Medicine, through agreements signed between FFM and Family Health International, with NIH subvention, started in 2016 and continued in 2021.

Through this study it will be possible to compare HIV incidence among patients; make evaluations of the factors related to HIV infection, hepatitis, or sexually transmitted infections; and analyze potential drug interactions among sexual hormone therapies for transsexuals.

Programs and policies for obesity prevention in countries with low, average, and in transition income - studies in support of evidence and assessment of programs

This project, developed by NUPENS/USP, via a contract signed between FFM and the The University of North Carolina at Chapel Hill, began in 2016 and continued in 2021.

Through this research the following shall be produced: studies about dietary consumption; studies on the prevalence of obesity, high blood

pressure, diabetes, and other chronic diseases related to nutrition in Brazil; studies about the elasticity of prices for non-essential foods and beverages; and database with the nutritional composition of industrialized foods and beverages marketed in Brazil.

Use of Laser fluorescence with SPY ELITE, PINPOINT and the FIREFLY Robotics Platform systems in Surgical treatment of Cancer

This project, initiated by ICESP in 2016 and continued in 2021, was approved by the health department, within the scope of PRONON.

Through this study it will be possible to determine the incidence of complications related to short- and medium-term postoperative tissue ischemia; analyze and compare the influence of

circulatory mapping; evaluate the effectiveness of the method to identify lymph node structures and treatment of patients with digestive, urological and gynecological tumors; and evaluate the impact of local and systemic complications and the influence of the use of fluorescence on the hospital cost of surgical cancer treatment.

Participation of astrocytes located on the ventrolateral surface of the bulb in ventilatory responses to hypercapnia and hypoxia

This study, developed by ICB-USP, via an agreement signed in the end of 2016 between FFM and The Ohio State University, with NIH subvention, was ended in 2021.

The incomplete maturation of neural cells, involved in respiratory control, causes a significant alteration in homeostasis, and such alterations may

be crucial for life. A basic comprehension that neural networks are necessary and how they are harmed in pathological conditions was key to finally be able to think about pharmaceutical interventions for certain pathologies that affect the respiratory system and improve the population's survival rate.

Multiplex Test for the evaluation of Chagas disease cure

This study, developed by LIM 46, by means of a contract signed between FFM and the University of Georgia, with NIH subvention, was approved in the end of 2016 and continued in 2021.

Its goal is developing a cure test that may identify individuals previously exposed to the infection by the *Trypanosoma cruzi* protozoa and that have evolved to cure, either with or without therapeutic treatment.

Cohort study with pregnant women to assess the risk of congenital malformations and other adverse consequences for pregnancy after infection by Zika Virus - ZIKAlliance Consortium

This research was initiated in the end of 2016 by FMUSP's Infectious and Parasitic Diseases Department, via contracts signed between FFM and the European Union (represented by the European Commission), and was continued in 2021.

Its objective is evaluating the causal relationship between the infection by the Zika virus during pregnancy and the congenital malformations.

Production of recombinant proteins from different systems of expression

This study, developed by LIM 25, via a contract signed between Ouro Fino Saúde Animal Ltda., FMUSP and FFM, began in 2015 and ended in 2021.

The main goal of this project was enabling the unprecedented recombinant production of

therapeutic proteins of interest in animal health, in a way to preserve the in vivo biological activity of these proteins both in lab animals and in target species.

Study of the Incidence of dengue in Brazil, in municipalities with high and medium endemicity Goiânia - GO and Araraquara- SP

This study, developed by IMT-FMUSP, via a contract signed between Sanofi Aventis Farmacêutica Ltda., HCFMUSP, and FFM, began in 2014 and continued in 2021.

Its main objective is to outline and implement epidemiological studies that subsidize the evaluation of future vaccination strategies against dengue.

Perspectives of eliminating residual malaria in the rural Brazilian Amazon: strategy for the investigation of Plasmodium vivax reservoirs

This study, developed by ICB-USP via an agreement made between FFM and the Health Department in the end of 2013, continued in 2021.

Its goal was implementing and evaluating a strategy to detect both symptomatic and

asymptomatic parasite carriers in areas of residual malaria transmission, centered on the monitoring of potential transmission hotspots around clinical episodes diagnosed by an active or passive search of fever cases.

Research Center for Biomarkers in Neglected Tropical Diseases of São Paulo-Minas

This research was developed, through 2012 and 2017, by HCFMUSP's LIM 46, via a contract signed between FFM and NIH. A new contract, signed with the NIH in 2017, enabled the project's continuity until 2022.

The long-term target is establishing a center of excellence for research in Biomarkers of neglected Infectious Diseases in Brazil. The initial focus will be Chagas disease, with the aim of finding biomarkers that may be used to infer the risk of disease progression.

Peruvian/Brazilian Amazon Center of Excellence in Malaria

This research, started in 2010 by ICB-USP, via a contract signed between the University of California and FFM, with NIH subvention, and ended in 2018. In 2019, with aim to continue it, a contract was signed between FFM and Yale University, also with NIH subvention.

It shall enable to determine the diversity of malaria vectors found in that region and evaluate the impact of different economic activities in the populational structure of the vectors.

These activities continued in 2021.

Study of specific immune response and genetic aspects in HIV-1 infected patients who are not long-term progressors or slow progressors for Aids

This study, enabled by an agreement signed between FFM and the Health Department in the end of 2010, is developed by LIM 56 and started in the end of 2011 and ended in 2021.

The Slow Progressor Individuals (SP) remain free from Aids progression for many years and make up approximately 1-3% of the total of HIV-infected individuals. Those individuals remain asymptomatic

and with a stable number of T CD4⁺ lymphocytes, and above 500 cells/mm³ of blood, without any use of antiretroviral (ARTs) treatment for more than 8-10 years. This study intends to analyze HIV- 1⁺ PL individuals by comparing with typical and rapid Aids progressors, matched by time and evolution and matched by gender and age.

Prospective evaluation of the use of isoniazid in the prevention prophylaxis of pulmonary tuberculosis (PT) in HIV-infected patients

This research, developed by LIM 56, enabled via an Agreement between FFM and the Health Department in the end of 2010, was initiated in the end of 2013 and continued in 2021.

In spite of the many studies indicating isoniazid (INH) as a prophylactic to reduce Tuberculosis (TB)

incidence in the HIV-infected population, this measure is not broadly used in all services in Brazil.

This study aims to evaluate TB incidence in individuals, adherence to prophylaxis, as well as its effectiveness compared to a historical series of the service.

Clinical Studies

For any type of research to be carried out in the FM/HCFMUSP System, it is necessary to obtain a free and educated consent from participants, maintain the privacy and confidentiality of the information, and obtain project approval by CAPPesq



Illustrative Image

In 2020, a year of unexpected challenges and amid the chaos brought by the global pandemic, FFM, while solidifying its legacy of support to FMUSP and its HCFMUSP, managed a total of 509 clinical studies. Among them, 33 were international research projects that were still active, and from that total seven were dedicated to the study of COVID-19. All studies were approved by the Ethics Committee and coordinated by researchers members of the FM/HCFMUSP System.

Besides representing an important role in clinical research, the projects are essential in the training of human resources and contribute to the generation of financial resources, which enabled investments in the field, and for future publications, with credits to the researchers and HCFMUSP.

It should also be noted that clinical studies, also referred to as clinical trials, are considered the major instrument to validate innovation in the health sector, having the objective of ensuring the researches are carried out within technical-

scientific, ethical, and legal parameters determined by international consensus.

For any type of research to be carried out, it is necessary to obtain a free and educated consent from participants, maintain the privacy and confidentiality of the information, and obtain approval of the project by CAPPesq

FFM fully supported the clinical studies related to COVID-19, without prejudice to the other projects, providing the maximum assistance to research projects dedicated to prevention and treatment of diseases that affect the health of the Brazilian population.

In that sense, the teams mobilized in broadening the research spectrum for the disease caused by Sars-Cov-2 could rely on FFM's unconditional support to perform and obtain the prospected results.

In 2021, FFM managed **577 clinical studies** (quantity on 12/31/2021).

Qualification Projects



TRAINING PROJECTS

The qualification projects aim to convey knowledge, in an ethical and innovative manner, with a high quality level.

Main Training Projects

Electronic Education and Training Platform in Remote Surgery Based on Synthetic Reality

This project, developed by HCFMUSP's Urology Division, was enabled by means of a Donation Term signed in 2021 between the Associação UMANE, HCFMUSP, and FFM.

It shall enable to contribute to the formation and enhancement of surgery technique applied to

Renal Transplant and other high-complexity surgeries, through investments in an electronic education and training platform for remote surgery based on synthetic reality and dependent tutor, for doctors, nurses, nursing technicians, instrumentators, and clinical engineers.

Qualification Course for Primary Care/Family Health Strategy professionals (FHS) for Phantom Limb Pain of amputees

This study, forwarded by IMRea, via FFM, to the Health Department for presentation and approval of projects within the scope of **PRONAS**, was approved in the end of 2021.

The general goal of the course is qualify health professionals in recognition for better diagnosis of phantom limb pain and secondarily create a platform of information and care for that type of patient.

Qualification Course for Primary Care/Family Health Strategy (FHS) professionals for integration of Rehab to the Line of Care for Adults with Stroke

This study, forwarded by IMRea, via FFM, to the Health Department for presentation and approval of projects within the scope of **PRONAS**, was approved in the end of 2021.

The general goal of the course is qualifying and enhancing technical and scientific knowledge to

prevent incapacities with early referencing to the rehab network for the person victim of Stroke, in an integral manner, with actions coordinated between primary care and tertiary level rehab.

Training course for health professionals in the Basic Care Network, in the assistance and follow-up of people with disabilities in Primary Care

This project, forwarded by IRLM, via FFM, to the Health Department for presentation and approval of projects within the scope of **PRONAS**, was approved in the end of 2020 and commenced in the end of 2021.

It shall enable to offer a qualification and continued education course specific for health

professionals of the Primary Care network in the municipality of São Paulo, with aim to enhance the care provided to people with impairments, prioritizing the exchange of clinical experiences based on the evidence and latest research on the subject.

Training for physicians in Allogeneic Skin Transplantation

This study, developed by HCFMUSP's EEP, was enabled by means of an Agreement Letter signed between OPAS and FFM, in the end of 2020, and continued in 2021.

Its objective is to update the knowledge of health professionals in burn victim centers and units for diagnosis, indication, and performance of skin transplantation in Brazil

Training in basic and advanced laparoscopy in a program associated with the PUC-Chile Medical School in the city of Santiago

This study, developed by HCFMUSP's Department of Surgery of the Digestive System and Coloproctology, was enabled by means of a Private Instrument of Educational Fund signed between Johnson & Johnson and FFM, it started in the end of 2020, and continued in 2021.

Its goal is to provide training in basic and advanced laparoscopy for Trainers of the Training Center (On-line) in a program associated with the PUC-Chile Medical School, developing basic video-surgery skills via simulated models.

Professional training program in the field of pharmaceutical products research and innovation

The objective of this project, developed by FMUSP's Gastroenterology Discipline, via an agreement signed in 2020 between Brainfarma Indústria Química e Farmacêutica S/A, USP, FMUSP, and FFM is extending the training of health professionals who shall work in multicentric

research in Uniprofessional residency in Pharmaceutical Care, whereas part will be performed in the field of practice of HCFMUSP's residency and part in the Research and Development Center of Brainfarma.

These activities continued in 2021.

Workshop to train participants on molecular and serological diagnostics of arbovirus

This workshop, that includes the participation of professionals from the HCFMUSP Infectious and Parasitic Diseases Division was enabled via a contract signed between Fondation Mérieux and FFM, in the beginning of 2020.

Its goal is practical and theoretical training of those professionals in molecular and serological matters related to arbovirus diagnosis.

Those activities were ended in 2021.

Specialization Course in Health Education of the Universidade de São Paulo for Professors from the Health Sciences School at the Amazonas State University

This project, created by the FMUSP Medical Clinic Discipline and started in the end of 2019 via a contract signed between FFM and the Amazonas State University (UEA) continued in 2021.

It aims to develop a Specialization Course in Health Education of FMUSP for the faculty of the UEA Health Sciences School, whose proposal to

train health professionals in the XXI century is transforming education based on conveying content into a content integration education. Such paradigm shift depends basically on the transformation of the educator; therefore, changing the training starts in developing faculty.

Upgrade Course on the Production and Maintenance of Lower Limb Prosthesis, Fixed and Articulated Suropodal Orthoses, and Maintenance in Means of Locomotion

This study, forwarded by IOT, via FFM, to the Health Department, for presentation and approval of projects within the scope of **PRONAS**, was approved in the end of 2018, started in 2020, and awaits PRONAS analysis for the extension period.

The course is focused on the enhancement of orthosis and prosthesis workshop workers, with aim to enhance technical skills and abilities for the process of manufacturing and producing orthosis, prosthesis, and wheelchair suitability.

Training in Critical Oncology Patient Care and Imaging Diagnosis in Oncology

This ICESP project, approved in the end of 2016 by the Health Department, within the PRONON scope, would start in the end of 2018, but had its execution suspended for reanalysis in 2019.

Its objective is to qualify professionals that work in the SUS network in the care for critical

cancer patients to perform exams of Magnetic Resonance Imaging, Computed Tomography, Bone Densitometry, Contrast Exams, Mammography, Radiological Protection, and Digital Radiology.

Tutoring Activity for the State of Tocantins

The objective of this project, developed by the Liver Transplant Service of HCFMUSP via an agreement signed between the Health Department and FFM, in the end of 2013, was aiding the implementation of the service of organ transplant donation in the State of Tocantins, promoting the

enhancement of the already authorized services and qualifying the local health professionals, enabling the development of multiple organ collection and cornea and kidney transplants.

Those activities were ended in 2021.

Tutoring Activity for the State of Roraima

The objective of this project, developed by the Liver Transplant Service of HCFMUSP via an agreement signed between the health Department and FFM, in the end of 2013, was aiding the implementation of the service of organ transplant donation in the State of Tocantins, promoting the

enhancement of the already authorized services and qualifying the local health professionals, enabling the development of multiple organ collection and cornea and kidney transplants.

Those activities were ended in 2021.

Qualification Projects Health Policies



HEALTH POLICY PROJECTS

The Health Policies projects are dedicated to the definition of processes and technologies dedicated to the improvement of diagnosis and treatment of diseases, among others.

The impact of the exposure to multiple air pollutants in maternal-child health: using the Environmental Surveillance Coordination

This project, to be developed by CEDI-FMUSP, was enabled via an agreement signed in the end of 2021 between the Health Department and FFM.

It will enable developing a set of guidelines of atmosphere pollution for Brazil, in a way to ensure healthy environments for the birth and development of children, with aim to formulate

public policies on pollutant emission, which shall contribute to reduce infancy respiratory problems, an important cause of child morbidity and mortality, in addition to the reduction in the number of premature, light weight, and congenital anomaly births.

Genomic epidemiology of malaria in a gold mining area in Pará, Brazil

This study, developed by IMT-FMUSP and enabled through a Cooperation Term was signed in 2021 between FIOTEC, FFM, and the researcher.

Through this initiative it will be possible to generate data-for-action and characterize the

parasite population and the transmission dynamics in gold mining regions in the municipality of Jacareacanga, State of Pará.

How to render interventions in labor and its outcomes more visible to the information systems?

This project, developed by the Public Health School of USP and enabled through a Cooperation Term signed between FIOTEC, FFM, and the researcher, started in 2021.

Through this initiative it will be possible the increase visibility, the granularity, and the quality of the SINASC variables associated to labor assistance to analyze how the proper or improper use of interventions impacts the maternal-child outcomes.

Using a database of multiple environmental pollutants to establish critical limits of exposure to air pollution in maternal-child health in Brazil

This study, developed by CEDI-FMUSP and enabled through a Cooperation Term was signed between FIOTEC, FFM, and the researcher, started in 2021.

Through this initiative it will be able to establish critical limits of exposure to environment

pollution by multiple agents, by building exposure-response model curves in maternal-child health, evaluating the outcomes of maternal deaths, fetal deaths, neonatal deaths, prematurity, and congenital malformation.

A validation study for a dietary evaluation instrument to capture the consumption of ultraprocessed foods in several countries

This study, developed by NUPENS via a Grant signed between the London School of Hygiene & Tropical Medicine and FFM, began in 2021.

Through this research it will be possible to adapt and validate in India, Equador, and Senegal an

ultraprocessed food consumption tracker that is developed and validated in Brazil, as well as initiating an implementation process for the tracker in the health surveillance system of those countries.

Improvement of Civil Aviation Accessibility

This project, developed by FOFITO-FMUSP and enabled through a Contract signed between FAI-UFSCar, FMUSP, and FFM, started in 2021.

Through this initiative it will be possible to collaborate in the development of a diagnosis related to the accessibility conditions in Brazilian

airports; in the analysis of the best practices in accessibility in national and international civil aviation; and in the development of an Accessibility Manual in air transportation contemplating assessment methodologies and indicators.

Work and Mental Health: The work of the Prosecutors and Servants of the National Treasury Attorney-General's Office

This project, developed by FOFITO-FMUSP and enabled through a Contract signed between the Regional Administration Superintendence of the Treasury Department in São Paulo and FFM, was initiated in 2021.

Through this initiative it will be possible to map and diagnose mental health and the work environment at the National Treasury Attorney-General's Office in the 3rd Region, so the relevant actions may be taken to improve the labor quality of the environment and its employees.

Review of the Happy Child Program Improvement

This project, developed by CEDI-FMUSP and enabled through an Agreement signed between the Lego Foundation FMUSP, and FFM, started in 2021.

Via this initiative it will be possible to review the contents, materials, and methods of the

program for parenthood and stimulation in the first period of childhood promoted by the Department of Citizenship, Special Secretariat for Social Development, called "Happy Child Program".

Direct and indirect costs of measles outbreaks in Brazil, from 2018 to 2020: An economic analysis of the social perspective

This study, developed by the FMUSP Preventive Medicine Department and enabled via an Agreement Letter signed between FFM and OPAS, both started and ended in 2021.

Its main goal was estimating the economic impact of the measles outbreaks occurring in Brazil from 2018 to 2020.

Rapid Evaluation of Assistive Technology

This project, developed by IMRea and enabled via a Purchase Order issued in the name of FFM by the World Health Organization, started and ended in 2021.

Through this initiative it was possible to estimate the prevalence of the need, access, and use of assistive products among individuals in rehab in the Municipality of São Paulo, and understand the

additional aspects related to the demand, the barriers, and the facilitators of the populations' access to assistive products and the associated services, including user satisfaction. Those results shall be used as additional inputs for the WHO-UNICEF Global Report on Assistive Technology, to be launched in 2022.

Promoting responsive care and proper nutrition among pregnant teenagers and young women, adolescent fathers and mothers, and their children

This project, developed by the IPq and enabled via a Contract signed between UNICEF and FFM, started in 2021.

Through this initiative it will be possible to develop and monitor the implementation of a house call methodology, supported in the First Bonds project, focused on pregnant adolescents and young women and/or with small children,

which may be adapted to the Happy Child Program; and develop and monitor the implementation of educational instruments and materials in electronic format on the subject of proper and healthy nutrition of the child and the teen herself, to be produced and distributed for implementation in the Urban Centers Platform territories.

2030 PROVME Study - development and application of dynamic models for the analyses of provision and requirements of physicians and specialists in Brazil.

This study, started in 2020 by the FMUSP Preventive Medicine Department, was enabled via an Agreement Letter signed between FFM and OPAS, and continued in 2021.

Its main goal is creating the demand and offer Indicators for medical workforce applied to the Brazilian reality.

Investigation on the Medical Workforce in São Paulo and Maranhão

This study, started in 2020 by the FMUSP Preventive Medicine Department and enabled via a letter issued by the Queen Mary University of London to FFM, continued in 2021.

Through this research it will be possible to understand the different ways the Brazilian economic crisis affects the health system and its workforce, particularly doctors.

Research program about the environmental impact of Brazilian diet

This study, initiated in the end of 2019 by NUPENS via a Grant signed between the Climate and Land Use Alliance and FFM, continued in 2021.

Through this research it will be possible to evaluate Brazilian's diet, simultaneously

considering its nutritional quality and environmental impacts, and identify feasible ways to optimize it as to these two dimensions.

The Judicialization of the Incorporation of technologies in the Public Health System (SUS) and in Complementary Health

This project, developed by FMUSP's Preventive Medicine Department, was enabled via an agreement made in the end of 2019 between FFM and the Health Department, and was continued in 2021.

The research aims to understand why patients resort to Justice to obtain health technologies; what

are the technologies, medications, and treatments claimed in the legal suits filed against SUS and the health insurance policies in the State of São Paulo; as well as the understanding of the Judiciary and eventual gaps in the regulation before these claims.

Development of technical support to subsidize decision making at ANVISA, in particular those associated to technology assessment processes, creation of the Agency's regulatory benchmark, and production of studies with regulatory impact

This project, begun in 2019 and continued in 2021, was created by NIT-HCFMUSP and enabled via a contract signed between ANVISA, HCFMUSP, and FFM.

It aims to develop technical-scientific support

services to subsidize decision making at Anvisa, in particular those associated to technology assessment processes, creation of the Agency's regulatory benchmark, and production of studies with regulatory impact

Research Project to Implement the Intestinal and Multivisceral Transplantation Program in the Public Health System - SUS

This project, developed by HCFMUSP's Digestive System Surgery Department, was enabled via an Agreement made in the end of 2019 between FFM and the Health Department, and is still under the analysis of the Health Department.

If its execution is approved, the study will enable building a complete and consistent history for the procedure, creating opportunities for the

survey of costs and development of work processes and clinical protocols on which to base the creation of an Intestinal Transplantation Program in SUS in the future, in addition to opening precedents for new therapeutic perspectives in the treatment of chronic intestinal failure in the country, offering quality of life and social benefit for the patients affected and their families.

Health Insurance Policies in Brazil: judicialization, regulation, and interfaces between Public and Private sectors

This research is developed by FMUSP's Preventive Medicine Department, and was enabled via an agreement made in 2018 between FFM and the Health Department.

Through this study it will be possible to map and systematize the data in order to point out

trends associated to medical-hospital activity prices, private expenditures, and use of health services.

Those activities commenced in 2019 and continued in 2021.

Intestinal and Multivisceral Transplant Program

This program, developed by the FMUSP Liver Surgery and Transplantation Discipline and funded by the Health Department via an agreement made with FFM, in 2011, derived from the interest of the National Transplantation System (SNT) of the Health

Department in relying on reference institutions to implement that assistance modality in Brazil.

The activities were initiated in 2016, waiting for the approval of the project budget items relocation, and were ended in the beginning of 2121.

ARENA Project (Organ and Tissue Donation for Transplants)

The Arena Project, developed by OPO - Organ Seeking Organization of HCFMUSP, via an agreement made between the Health Department and FFM in the end of 2013, was ended in 2021.

The initiative sought only and specifically to raise awareness of the population as to the importance of donating organs, providing information that conveyed more security to decide

on the act of donation and, eventually, reduce the high rates of family refusal observed until now.

The project included collection and transplant centers under development in the States of Acre, Amazonas, Goiás, Maranhão, Mato Grosso do Sul, Pará, Paraíba, Piauí, Rio Grande do Norte, and Rio de Janeiro.

Institutional Projects



INSTITUTIONAL PROJECTS

The institutional projects are primarily dedicated to the enhancement, expansion, and maintenance of the physical and technological infrastructure of the FM/HCFMUSP System installations.

Renovation of the ICHC Gynecology Division

The renovation and suitability project of the ICHC Gynecology Sector, which has not received investments in infrastructure for more than 20 years, was enabled via two Transfer Contracts signed in the end of 200 and 2021 between FFM, CEF, and the Health Department.

That renovation, whose works have not yet started, shall contribute to the improvement in the care provided and the creation of technical protocols for several pathologies, among them infertility treatments.

Renovation of HCFMUSP's LIM 31

The project was enabled via a Transfer Contract signed in the end of 2021 between FFM, CEF, and the Health Department and aims to

renovate HCFMUSP's LIM 31, with the goal of adjusting it to the Biosafety 1 and 2 levels (NB1 and NB2).

Renovation of the ICHC Microbiology Lab

This project, coordinated by ICHC's Microbiology Lab, was enabled via a Transfer Contract signed in the end of 2020 between FFM and the Health Department, and continued in 2021.

With the execution of the renovation and suitability, whose works have not yet started, it will be possible to install automated equipment, in a lending model, which cannot be acquired due to the lack of space and current infrastructure.

Renovation of the ICHC Gastrosurgery Ambulatory

This project, coordinated by ICHC's Surgery of the Digestive System and Coloproctology Division, was enabled via a Transfer Contract signed in the end of 2020 between FFM, CEF, and the Health Department, and was continued in 2021.

Its goal is the renovation and suitability of that unit, whose works have not yet been started, which provides integral and quality care to overweight and obese patients, emphasizing pre and post surgery outpatient attention.

Renovation of the ICHC Trauma Center

This project, coordinated by ICHC's General Surgery and Trauma Department, was enabled via a Transfer Contract signed in the end of 2019 between FFM, CEF, and the Health Department, and was continued in 2021.

With the renovation, whose works have not begun, the diagnosis and treatment of critical patients will be performed in the same physical location, encompassing the phases of reanimation, endovascular interventions, and invasive surgical procedures.

Revitalization Project of the Digestive System Surgery Inpatient Unit

Through a Partnership Agreement signed between ABDIB, FFM, and HCFMUSP in the end of 2020, ABDID committed to disclose the information about this project to their members, with the aim of fomenting resource donation to carry it out.

The renovation of the hospitalization beds will ensure more privacy to patients, readjusting the number of beds per room (from four to two), providing a more efficient control of hospital infection and greater patient safety.

These activities continued in 2021.

Replacement, due to obsolescence, of MRI equipment for InRad and IOT

This project, approved in the end of 2021, was enabled via an agreement signed between FFM and the Health Department.

It aims to replace the magnetic resonance equipment installed in InRad and IOT, which had

outdated technologies and lacked advanced diagnostic tools, which directly impacted patient care.

Replacement, due to obsolescence, of equipment for the IHCH Geriatrics Service

This project, approved in the end of 2021, was enabled via an agreement signed between FFM and the Health Department.

It aims to replace equipment with outdated technologies installed in the ICHC Geriatrics Service.

Acquisition of equipment for the ICHC Gastroenterology Diagnostic Center

This project, approved in the end of 2021, was enabled through an agreement made between FFM and the Health Department and has the objective of acquiring an endoscope reprocessor and a flexible

videoendoscopy system for performing high and medium complexity procedures at the ICHC Gastroenterology Diagnostic Center.

Acquisition of Equipment for HCFMUSP's LIM 04

By means of two agreements, signed in the end of 2019 and 2021, between FFM and the Health Department, LIM 4 will be equipped to: **a)** perform a research in therapeutic strategies for the

treatment of breast implant encapsulation after radiotherapy; and **b)** promote a distance monitoring program for patients bearing chronic wounds, with the use of an application.

Acquisition of equipment for the ICHC Neurosurgery Division

This project, approved in the end of 2021, was enabled via an agreement signed between FFM and the Health Department, and aims to acquire an ultrasonic Aspirator for the Neurosurgery Division

of ICHC's Neurology Department, aiming to reduce surgical time, morbidity, and the risk of operative sequelae.

Replacement, due to obsolescence, of equipment for the ICr

Through two agreements, signed in the end of 2019 and 2021, between FFM and the Health Department, the ICr will be equipped to: a) perform digestive endoscopies, bronchoscopies,

colonoscopies, and endoscopic retrograde cholangiopancreatographies; and b) adequate neonatal transport.

Replacement, due to obsolescence, of equipment for the IHCH's Obstetrics Service

This project was enabled via an agreement made in the end of 2020 between FFM and the Health Department, and was continued in 2021.

It aims to replace equipment with outdated technologies installed in the ICHC Obstetrics Division.

Acquisition of computer for HCFMUSP's Computerize Project

Since 2013, the "Computerize Project" was created to implement the Electronic Medical History in all institutes of the HCFMUSP Complex, seeking to offer greater agility and effectiveness in outpatient appointments, urgency and emergency assistances, surgeries, hospitalizations, lab exams and medication distribution.

Through parliamentary amendments, this project, enabled by agreements signed in the end of 2020 between FFM and the Health Department, aims to acquire 94 computers to be installed in several of HCFMUSP's institutes.

These activities continued in 2021.

Acquisition of Electroencephalographs for InCor

This project was enabled via an agreement signed in the end of 2020 between FFM and the Health Department and aims to acquire Electroencephalographs equipped with the

technological innovation required to assist post surgical cognitive dysfunction and perform non-invasive treatments at InCor.

These activities continued in 2021.

Acquisition and Replacement, due to obsolescence, of equipment for the IHCH Surgical Center

This project was enabled via an agreement made in the end of 2020 between FFM and the Health Department, and was continued in 2021.

It aims to acquire and replace, due to obsolescence, several equipment and materials

used by the IHCH Surgical Center, which shall enable a better turnover of the rooms, better productivity, and greater offer of high-complexity surgeries for SUS.

Replacement, due to Obsolescence, of video endoscopy system for LIM 26

This project was enabled via an agreement made in the end of 2020 between FFM and the Health Department, and was continued in 2021.

The replacement of the video endoscopy systems is focused on the teaching of simple and advanced endoscopy procedures, within the scope of surgical endoscopy.

Replacement, by Obsolescence, of a Neuroendoscope for IPq

This project was enabled via an agreement made in the end of 2020 between FFM and the Health Department, and was continued in 2021.

The Neuroendoscope is a key instrument to perform endonasal surgeries of the pituitary region. Currently, the equipment installed in the IPq is obsolete and needs to be replaced.

Modernization of the IOT Orthopedics Workshop

This project was enabled via an agreement made in the end of 2020 between FFM and the Health Department, and was continued in 2021.

It aims to modernize the IOT Orthopedics Workshop, which will enable to improve quality and reduce time of manufacturing and delivering orthotics and prostheses.

Acquisition of equipment for Neonatal Hearing Screening of the ICr

This project, approved in the end of 2020, was enabled via an agreement signed between FFM and the Health Department, and continued in 2021.

It aims to acquire equipment for Neonatal Hearing Screening of the ICr, which is currently borrowed from other areas.

Acquisition of Permanent Equipment and Materials for IMRea

Two agreements, signed in the end of 2017 and 2019 between FFM and the Health Department, enabled the acquisition of permanent equipment and materials dedicated to the inpatient and outpatient areas of the IMRea.

The activities related to the Agreement signed in 2017 were concluded in 2021, whereas those related to the Agreement signed in 2019 continued in 2021.

Replacement, due to obsolescence, of equipment for ICESP

Two agreements, signed in the end of 2020 and 2021 between FFM and the Health Department,

enabled the replacement, due to obsolescence, of 137 computers of ICESP.

Technological upgrading of ICESP equipment

Via three agreements signed in the end of 2017, between FFM and the Health Department, the following were enabled: **a)** technological updating at ICESP of Monitors, Laparoscopy Video

System, Rigid Endoscopes of the Surgical Center, and replacement of Servers due to obsolescence; **b)** technological updating of equipment in ambulatories, Surgical Centers, Material and

Sterilization Center, Assistance, Physiotherapy, Day Hospital, Hospitalization, Radiology Rehabilitation, ICU and other areas; and **c)** the acquisition of radiological diagnostic monitors and flexible endoscopes, used in diagnostic imaging.

Those acquisitions started in 2019 and continued in 2021, except for item c), which was ended in 2021.

Multiuser Equipment Network Program

With aim to stimulate research and innovation activities of the FM/HCFMUSP System, the Board of FMUSP and Executive Board of the LIMs created the Multiuser Equipment Network (**PREMIUM**). This Program has the goal of creating conditions for all researchers of the FM/HCFMUSP System, and those outside of it as well, to have access to the latest contemporary biomedical research technologies and, concurrently, optimize the application of specialized financial and human resources.

The implementation of that Network hence has the objective of preventing equipment duplication and underuse, enabling researchers to have access to the latest technology installed in the Institution and required for the several types of Experimental and Clinical Research.

Organized as services, the labs involved in this program are coordinated by researchers with recognized experience in their respective fields of activity.

The equipment part of the PREMIUM are state-of-the-art and operated by highly qualified professionals to offer the best result possible.

The services provided by the multiuser centers are available in an own website with forms, orientation, and procedure standards available in that webpage. (www.premium.fm.usp.br).

The Program is structured in a way that each equipment, set with the same purpose, functions as a multiuser center. The Network today has 42 active centers. The equipment and services currently offered are distributed among the following groups:

Equipment:

- Cytometry;
- Experimental Models;
- BioBank;
- Structural and Functional Genomics;
- Special Analyses;
- Imaging; and
- Microscopy and Microscopic Technique;

Services:

- Scientific Documentation;
- Publishing;
- Authentication of Cell Lines; and
- Biological Samples Storage Center;
- Waste Commission;
- Cytology and Histopathology;
- Clinical and laboratory evaluation;
- Internal Biosafety Commission.

In 2021, the infrastructure for IMRea's research and development, including its Neuromodulation and Robotics Applied to Rehabilitation Lab, became part of the PREMIUM Network.

Among the equipment currently available are devices and accessories for electroencephalography (EEG), functional near-infrared spectroscopy (fNIRS), eye tracking, hybrid neurostimulation, neurofeedback, transcranial magnetic stimulation (TMS), and electromyography (EMG), in addition to a supercomputer with high processing capacity.

Maintenance of the Research and Innovation Infrastructure of the FMUSP and HCFMUSP System

This project, coordinated by the LIMs Executive Board, was enabled via an Agreement signed in the beginning of 2019 between HCFMUSP, FFM, and Finep, and was continued in 2021.

The aim is to ensure, via preventive maintenance services and parts acquisition, the maintenance of two important research

infrastructures, namely the Multiuser Equipment Network Program (PREMIUM Network) and the FMUSP Central Vivarium, which serve the entire research community of the FM/HCFMUSP System, national and internal external researchers, from public and private sectors.

Infrastructure for Multidisciplinary research in Medicine, Engineering, and Physiotherapy – INFRALIMS 2018

In 2019, an agreement was signed between FINEP, HCFMUSP, and FFM to develop two sub projects of the PREMIUM Network, which have a strong multidisciplinary character, intense interaction with Engineering, they explore the

expertise of researchers and the already existing infrastructure, and shall enable the introduction of new lines of research and training for professionals prepared for innovation projects.

These activities continued in 2021.

Infra-LIMs 2015 - Expansion of the equipment park of the HCFMUSP PREMiUM Multiuser Network

HCFMUSP and FMUSP's Academic System relies on the PREMiUM Network - the HCFMUSP and FMUSP Multiuser Equipment Network Program.

In the end of 2017, an agreement was signed between FINEP, HCFMUSP, and FFM to expand and update that Network with the introduction of the following technologies to develop new lines of research in technological levels that at the frontier of knowledge: **1)** Creation of a 3D printing Center of

nano, micro and macrostructures for application in regenerative medicine, anatomical models, and others; **2)** Creation of the Multiuser Center for Cardiac Optical Coherence Tomography and expansion of the Imaging Platform in the Autopsy Room; **3)** Expansion of the Multiuser Center for Bioinformatics and the Information Technology Center.

These activities continued in 2021.

Maintenance, Operation and Consolidation of PREMiUM - the FMUSP-HC System Multiuser Equipment Network Program

With aim to consolidate PREMiUM – Multiuser Equipment Network Program of the HCFMUSP and FMUSP System, an agreement was signed between Finep, HCFMUSP, and FFM, in 2017, which continued in 2021.

The general goal of the project is to enable preventive and corrective maintenance of high-cost and advanced technology equipment installed in the Network; in addition to the acquisition of equipment that complement the existing centers and hiring highly specialized workforce.

ABBREVIATIONS IN THIS REPORT

AAAFMUSP	Alumni Association of the Faculdade de Medicina da USP
ABDI	Brazilian Industrial Development Agency
ABDIB	Brazilian Association of Infrastructure and Basic Industry
ANVISA	National Sanitary Vigilance Agency
AMA	Medical Ambulatory Assistance of the Municipal Health Secretariat of São Paulo
APAC	Authorization of Ambulatory Procedures
AUDESP	Electronic Audit Division of São Paulo – Court of Auditors of the State of São Paulo
CAPPesq	Ethics Committee for the Analysis of Research Projects at HCFMUSP
CARF	Commission on Accreditation of Rehabilitation Facilities
CCEX-FMUSP	FMUSP Culture and University Extension Service
CCIH	Hospital Infection Control Commission
CCR	Rebouças Convention Center
CEAF	Specialized Component of Pharmaceutical Assistance
CEBAS	Charitable Social Work Entity Certificate
CEDEM	Center for the Development of Medical Education "Prof. Eduardo Marcondes" of FMUSP
CEDI-FMUSP	FMUSP Child Development Center
CEF	Caixa Econômica Federal
CEGH-CEL	Center for the Study of the Human Genome and Stem Cells at USP
CNPq	National Scientific and Technological Development Council
DRS-1/SES	Regional Health Department 1 of the São Paulo Municipal Health Secretariat
EEP	Permanent Education School
EPI	Personal Protective Equipment
FAI-UFSCar	Foundation for Institutional Support to Scientific and Technological Development of the Universidade Federal de São Carlos;
FAPESP	Research Support Foundation of the State of São Paulo
FFM	Fundação Faculdade de Medicina
FMCSV	Maria Cecília Souto Vidigal Foundation
FMUSP	Medical School of the Universidade de São Paulo
FOFITO	Department of Speech Therapy, Physiotherapy, and Occupational Therapy at FMUSP
FZ	Zerbini Foundation
GCIH	Hospital Infection Control Group
HAC	HCFMUSP Cotoxó Auxiliary Hospital
HAS	HCFMUSP Suzano Auxiliary Hospital
HCFMUSP	The Clinics Hospital of the Universidade de São Paulo Medical School
Hemominas	Foundation of the Hematology and Hemotherapy Center of Minas Gerais
Hemope	Hemope Foundation (Pernambuco)
Hemorio	Arthur de Siqueira Cavalcanti State Hematology Institute (Rio de Janeiro)
ICB-USP	Biomedical Sciences Institute of the Universidade de São Paulo
ICESP	Cancer Institute "Octavio Frias de Oliveira" of the State of São Paulo
ICHC	Central Institute of HCFMUSP
ICr	HCFMUSP Children and Youth Institute
IMRea	HCFMUSP Physical Medicine and Rehabilitation Institute
IMT	Tropical Medicine Institute of São Paulo, USP Medical School
InCor	HCFMUSP Heart Institute
IOT	HCFMUSP Orthopedics and Traumatology Institute
IPq	HCFMUSP Psychiatry Institute
IRLM	Lucy Montoro Rehabilitation Institute
ITACI	Children's Cancer treatment Institute of the HCFMUSP Children's Institute
LIM	HCFMUSP Medical Investigation Lab
LIM 04	Microsurgery Lab - Plastic Surgery
LIM 05	Environmental and Experimental Pathology Lab
LIM 23	Psychopathology and Psychiatric Therapy Lab
LIM 25	Cellular and Molecular Endocrinology Lab

LIM 26	Experimental Surgery Research Lab
LIM 40	Immuno-Hematology and Forensic Hematology Lab
LIM 46	Medical Parasitology Lab
LIM 56	Dermatology and Immunodeficiencies Investigation Lab
LIM 60	Clinical Immunology and Allergy Lab
LSHTM	London School of Hygiene & Tropical Medicine;
MEC	Education Department
MS	Health Department
NIHR-UK	National Institute for Health Research-UK
NIH	National Institutes of Health
NIT-HCFMUSP	HCFMUSP Technological Innovation Center
NUPENS/USP	Center of Epidemiological Research in Nutrition and Health, Faculty of Public Health, University of São Paulo
WHO	World Health Organization
ONA	National Accreditation Organization
OPAS	Pan American Health Organization
OPM	Orthoses, Prostheses and Means of locomotion
PAMB	HCFMUSP Ambulatory Building
UNDP	United Nations Development Programme
PROADI-SUS	Public Health System Institutional Development Support Program
PRONAS/PCD	National Program of Health Care Support for the Disabled
PRONON	National Oncology Care Support Program
RRLM	Lucy Montoro Rehabilitation Network
SES-SP	São Paulo State Health Secretariat
SI-PNI	Information System - National Immunization Program
SINASC	SINASC Coordination Center for Epidemiology and Information (CEInfo) of the Municipal Health Department of São Paulo
SSO	Occupational Health Service
SUS	Public Health Service
SVOC	Capital Death Verification Service
UBS	Basic Health Units of the São Paulo Municipal Health Secretariat
UNICEF	United Nations Children's Fund
USP	University of São Paulo

FFM ADMINISTRATION

Board of Trustees - 2021

President: Tarcísio Eloy Pessoa de Barros Filho, PhD

Members:

Alfredo Luiz Jacomo, PhD	Mr. Jacson Venâncio de Barros (until Sept/21)
Antonio Corrêa Meyer, PhD	Paulo Rossi Menezes, PhD
Mrs. Berenice Maria da Costa Santos	Sandra J. Ferraz Ellero Grisi, PhD (until Sept/21)
Flavio França Rangel, PhD (until Oct/21)	William Carlos Nahas, PhD
Francisco Vidal Luna, PhD	Priscilla B. Costa, student (until Apr/21)
Giovanni Guido Cerri, PhD	Pedro de Oliveira Lima Ferraz, student

Advisory Board - 2021

President: Tarcísio Eloy Pessoa de Barros Filho, PhD

Members:

Mr. Afrânio Pereira	José Osmar Medina Pestana, PhD
Andrea Sandro Calabi, PhD	Jose Otavio Costa Auler Junior, PhD
Antonio Corrêa Meyer, PhD	José Renato Nalini, High Court judge
Antonio Rugolo Junior, PhD	Leila Mejdalani Pereira, PhD
Carlos Antonio Luque, PhD	Luiz Carlos Ferreira, PhD
Carlos Ari Sundfeld, PhD	Maria Eugenia F. Pedroso de Lima, PhD
Claudio Ferraz de Alvarenga, PhD (until Apr/21)	Paulo Chapchap, PhD
Eleuses Vieira de Paiva, PhD	Paulo Ermírio de Moraes Macedo, PhD
Fernanda Tovar-Moll, PhD	Regina Szylit, PhD
Fernando Ganem, PhD	Rose Setubal, PhD
Francisco Vidal Luna, PhD	Rubens Naves, PhD
Giovanni Guido Cerri, PhD	Sergio Adorno, PhD
Ingo Plöger, PhD	Sidney Klajner, PhD
Irineu Tadeu Velasco (until Sept/21), PhD	Vahan Agopyan, PhD (USP's Dean)
Jofre Salies, PhD	Vanderlei Macris, PhD
José Antonio de Lima, PhD	

Board 2021

Director General: Flavio Fava de Moraes, PhD

Deputy Director General: Jose Otavio Costa Auler Junior, PhD

Superintendency 2021

Financial Superintendent Mr. Amaro Angrisano

Managers 2021

Angela Porchat Forbes – Projects and Research	Ludemar Sartori – Materials
Arcênio Rodrigues da Silva – Legal Advice	Marcus César Mongold – Controllership
Berenice Maria da Costa Santos – Financial Dep.	Silvia Dalla Valle – Human Resources
Elisabete Matsumoto – IT Dep.	Valéria Pancica Blanes – Invoicing and Control
Fabília C. Giancoli Goes – Complementary Health	

STAFF

Production

Fundação Faculdade de Medicina

Director General

Prof. Dr. Flavio Fava de Moraes

Deputy Director General

Prof. Dr. Jose Otavio Costa Auler Junior

Coordination

General Management of Projects and Research

Research, draft, graphic project and final texts

Irene Faias

Photos and Texts

FFM Archive

Internet

HC On Line

FFM Journal

FMUSP Clinics Hospital Archive

USP Medical School Archive

The information in this report was provided by all areas of FFM and the FM/HCFMUSP System and by the Coordinators of the projects herein described.

Fundação Faculdade de Medicina

Rebouças Ave., 381, Cerqueira César

São Paulo, SP, 05401-000

(11) 3016-4948

www.ffm.br

ggpp@ffm.br

March/2022