



# 2010 Annual Report



# FFM Bodies of Management

## 2010 Board of Directors

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CEO: Prof. Dr. Flavio Fava de Moraes  
Deputy Director General: Prof. Dr. Yassuhiko Okay



*Prof. Dr. Flavio Fava de Moraes*



*Prof. Dr. Yassuhiko Okay*

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Prof. Dr. Giovanni Guido Cerri (since October/2010)

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# Presentation

# 1 – The adopted strategies

The idea of setting up a foundation that supports the activities of the Medicine University, at USP (FMUSP) and the FMUSP Hospital das Clínicas (HCFMUSP), was completed on September 18, 1986 at the initiative of the Alumni Association of FMUSP. Since then, the Medical School Foundation (MSF) has contributed to the improvement of the FMUSP/HC institutional management system, giving greater agility, efficiency and credibility to the academic activities and assistance in the health field.

During its twenty four years, it has sought to constantly improve its standard of services and dedicate simultaneously to the achievement of its objectives and to meet the needs of its partners. The ongoing modernization of its technical infrastructure, adapting to current technological demands and the training and specialization of its team of professionals are other priorities, so the investment in human resources and internal infrastructure and the maintenance of the FMUSP/HC System are translated by many positive indicators, obtained during its existence.

The FFM bases its activities in the standards, rules and decisions established by its Board of Trustees and the collegiate decision-making from the FMUSP/HC System. The decision process favoured the shared vision of the corporate objectives, strategies and management practices that allowed to unify the musical perception, understanding and participation.

The financial guidance remained the pursuit of positive working capital, basing its decisions on expenditure or investment in the previous requirement of the existence of financial resources to do so.

In 2010, there has been continued its program of valuation of the direct employees of the FFM, where the re-analysis of positions, functions, framing and merits continued to be the focus of action by the Board. In parallel, the Capacity Training and Training of its team of professionals resulted in the improvement of outcomes of the Foundation.

The organizational structure of the FFM, established to sort and match their skills and responsibilities in

the development of teaching and research assistance, is divided by strategic areas of specialization, in order to better meet the needs of its partners and the public. They are:

- Medical Audit
- Comptrollership
- Invoicing Control
- Juridical Coordination
- Invoicing
- Financial
- Technology
- Materials
- Pólo Cultural Pacaembu
- Projects e Researches
- Human Resources
- Supplementary Health

It keeps a cooperation agreement with the Ministry of Health, since 1988, which provides a series of management activities, ranging from the invoicing for services of medical and hospital care and the human resources management of the FMUSP/HC System, even renovation and equipment and supplies purchases, among others. Furthermore, it develops, together with the FMUSP/HC System, partnerships with institutions interested in the development of medical sciences, such as: Ministries, State and Municipal Departments, research auxiliary agencies, hospitals, pharmaceutical industries, private sector, among others . It also supports programs from the FMUSP/HC System, its extension courses, events, research projects, among other initiatives.

A key part of its institutional strategy is transparency, given the extensive monitoring that is submitted. The FFM's activities are audited by the Public Ministry Trusteeship, by independent external audit and the Court of the State, and the accountability of its projects for agencies such as Ministries, Secretaries of State and the City, and various public and private, national and international institutions. In the relationship with partners, it operates according to regulations agreed on a case by case, always ensuring transparency and austerity in management. Because of the credibility that FFM inspires its sponsor departments, amount volume managed by the FFM has increased significantly year after year. Given the substantive evolution of revenues, projects, contracts and agreements, the FFM has received significant amounts of income from

financial investments, fully reversed in favor of the operation itself and the projects executed by the FFM.

In fiscal 2010, it was obtained a consolidated surplus of about R\$ 173 million, with a cash balance of about \$ 277 million. The financial management of these resources is through the handling of accounts of the Management Centers, or MC's (approximately 1,800 active accounts), according to the guidelines approved by the FFM Board of Trustees, the HCFMUSP Deliberative Council and the FMUSP Congregation.

The Management Contracts, signed between 2008 and 2010 and included in the FFM activities are a natural reflection of this outlook and led to a growth in operations as a whole, occurred on a sustained, solid way and guided the expansion, improvement and training of its human resources. Management Contracts were signed from the qualification of FFM as a Social Organization, necessary for the formation of a partnership with the Public Administration for the development of community services.

Paralelamente, a FFM deu continuidade ao gerenciamento de 149 programas/projetos assistenciais, de ensino e pesquisa, além de 342 estudos clínicos, desenvolvidos no Sistema FMUSP/HC.

The Restoration Project and the FMUSP Modernization, developed between 2000 and 2008, had major support from the FFM, which divided with the FMUSP, the project coordination and fundraising. The initiative aimed to enhance the

historic heritage and to adapt its facilities to the activities which are developed nowadays, improving infrastructure and logistics work processes. The project promoted a reform not only physical, but a profound human and cultural change throughout the community of the FMUSP/HC System. Maintenance work continued in 2010, now incorporated into the FMUSP functioning routine.

In 24 years of existence, the FFM gained public recognition for its performance as a social care charity entity, by obtaining and maintaining several certifications, which include, among others:

- Declaration of Public, Federal, State and Municipal Utility;
- Certificate of Registration and Certificate of Social Assistance Beneficent Entity - with the National Council for Social Assistance - under the registration number 71010.000905/2004-41;
- Registry Certificate number 0308/SP/2000 with the State Council for Social Assistance;
- Certificate number 018/2008 of Qualification as Social Organization of the Municipal Management of the São Paulo City Hall;
- Qualification Certificate as a Social Organization of Health of the Health Department of the State of São Paulo;
- Registry Certificate number 647/2002 of the Municipal Council of Social Assistance;
- Registry number 1088/ CMDCA/2004 in the Municipal Council for the Rights of Children and Adolescents.

## 2 – The FFM organizational structure

Established in order to adjust and sort its responsibilities and skills in the development of assistance, education and research, the organizational structure of the FFM is divided into strategic areas of specialization, in order to better meet the needs of its partners and the public.

The Human Resources Department conducted, in 2010, 13,319 employees, between staff of direct administration of the FFM, the FFM staff to service the FMUSP/HC System, personnel allocated to specific projects of assistance to people. Of this total, 346 employees are located in direct administration, focused on support for hundreds of social programs of the Entity, as well as for welfare activities, development of comprehensive health care and public health care developed by other professionals. The latter are hired in complementary or full day, seeking thereby to stimulate the production of didactic work, assistance and research, through material support and adequate compensation. Following a strategy to develop its direct employees, it continued the Program of Training and Training of personnel (6,491 hours/class), which, seeking to develop skills in team work, resulted in the improvement of outcomes of the Foundation. In parallel, it developed recruitment activities and selection in the entire FMUSP/HC System, as well as on new projects and existing ones (3,840 jobs), administration and payment of social benefits and wages, involving expenditures on payroll of about \$ 372 million, in addition to coordinating the process of hiring, firing, holiday, vacation, jobs and wages, basic-needs grocery package, meal ticket, transportation allowance, among others. In 2010, for example, it was offered about 214,000 basic-needs grocery package for all collaborators of the FMUSP/HC System, for the various projects, including retirees.

Revenues from services provided by different units of the FMUSP/HC System is performed by the Department of Revenue of the FFM. Among the other activities undertaken by this Department in 2010, it can be highlighted:

1. Printing of the Invoicing Examinations of the ICHC ICHC SUS Internees for the invoices prepared by the Division of Medical Files - ICHC;

2. Availability of Reports on SCOL - On-Line System Consulting, including reports from SUS Billing Inconsistencies and SUS Revenue Report by Billing Clinic;
3. Invoicing Process Automation, including: Invoicing Reports by Agreement; AIH Invoicing Report by CG, and IAI's Reject Report, in addition to improvement in processing invoices and Rejected AIH Report, besides improving invoicing processing and in the receiving process of agreement invoices;
4. APAC (Cost and High Complexity Procedure Authorization) Implantation Procedure Permanence;
5. Implementation of the Table entitled "Supplement Health Unified Terminology"
6. Continuing process of the out of date invoice agreement recovery.



*Front of FFM Head Office at Rebouças Avenue, in São Paulo*

The completion of charging operations, control and distribution of values for the services provided by different units of FMUSP/HC System to clients of the SUS (AIH - internment, ambulatory, including APAC - Authorization of High Complexity Procedures) and patients of Supplementary Health (Agreements) is performed by the FFM Invoicing Control Department. Besides, it was also developed other activities, which are:

In the Field of Supplementary Health:

- Gloss recovery of previous years, through financial negotiations held with CABESP operators, Medial Saúde and e Saúde Bradesco;
- it was developed a system, in partnership with the Department of Technology, that allows searching for professionals a profile of transfer related to payment of medical fees;
- Improvement of procedures for returns, together with the institutes;
- Standardization of Gloss Resources Processes;
- Distribution of credit (identified), in the month of receipt of competence;

In the Field of Unique Health System - SUSS:

- It has been deployed, in partnership with the Technology Department, an automated mechanism for distribution of the monthly payment of the amount fixed SUS AIH and Ambulatory (High and Medium Complexity);
- Contribution for the report development to a new evaluation of the SUS amount distribution, using invoicing as a base;
- Provision of module for a consultation and/or AIH invoicing report emission and Ambulatory;
- Improvement of the procedure of rejected AIH control procedure for the appropriate monitoring of resubmissions;
- Consultation Improvement and AIH mirror printing, aiming verification/analysis.

Established in 2006, the Department of Supplementary Health continued in 2010 for actions aimed at increasing procurement of alternative sources of resources to the revenue of the FMUSP/HC System through the participation of the Supplementary Health segment, with the excellence of its differential Medical Staff and the permanent incorporation of new technologies in the medical field. In the administrative area, in 2010, we can highlight:

- a) Qualification of the Medical School Foundation as a Collaborating Centre Regulatory Agency of the Department of Supplementary Health. The qualification is given to entities with proven ability to develop research and knowledge of the Department of Supplementary Health.
- b) Permanent status negotiations with the Operators of Private Health Insurance, aiming to expand the contracted services and improvement in the remuneration and payment terms and conditions, particularly the intensification of contracts with the UNIMED System.
- c) Operating system of Supplementary health data, that is the only operating system with the concept of

integration and standardization for all FMUSP/HC System institutes under the management of FFM;

d) Standard for electronic exchange of Supplementary health information further established by the National Health Agency, which guarantees the attendance, invoicing and reception process safety, adding this year the implementation of the Unified Supplementary Health Table – USHT in the fullness of the operation of the Supplementary Health of the FMUSP/HC System;

e) Contracts with Hospital Entities and Laboratories in order to provide services to raise FMUSP/HC System revenue, with particular attention to the area of Hematology.

f) Management of new CIH report to the Health Ministry, kept in constant improvement to keep pace with changing regulations and incorporation of new services. In 2010, sales of Supplementary Health recorded a growth of 3.99% over the previous year and an accumulated growth of 48.14% since the implementation of the Department of Supplementary Health.

The Department of Medical Audit is dedicated to analyzing medical records (laboratory medical reports and other documents of patients) to assess whether the procedure performed versus invoicing the patient is really billed according to the current standards of the Health System (SUS) services, enforcing the legal requirements dictated by the Ministry of Health.

It also acts as an authorizer (issue of AIH - Authorization for Hospitalization and high-cost procedures) and promotes the educational process (guiding the CG's) in order to improve the quality of the revenue produced by the CG's.

The Financial Department completed the second phase of the Operating Payment Project, the Electronic Payment Request, with the training and deployment of the tool SP-e for all FFM external users.

For Receipts, the Electronic Receipt Request pilot project was completed - SR-e, which shall be introduced in steps during 2011, after training all FFM external users.

In 2010, it was administered in a decentralized manner, payments and receipts by 07 different corporate taxpayer registries, moving an average balance of R\$ 260 million deposited in 196 bank accounts, representing hundreds of Management Centers.



It is intended for 2011, the launching of accessories for the Payment and Receipt tools, SP-e and SR-e, and adding features, agility and transparency in the exchange of information and commands for the settlement of payments and receipts, given thus the growing demands of the FFM.

The Department of Technology, continuing to service the process of technological innovation, adaptation of new systems, customer service and modernization of information technology, provided to the FMUSP/HC System in 2010, developed the following activities:

- a) Realization of 14 projects in the area of human resources for the improvement of administrative routines in the areas of benefits and recruitment/selection, yet the average time reduction during the payroll process;
- b) Providing Contracts information in an on-line SCOL system, the implementation of creditors and customers records and new filters for the management reports of the Juridical Coordination Counsel;
- c) Completion of 16 projects in the Supplementary Health, including the implementation and control in the scheduling routine and deployment of Supplement Health Unified Terminology Table to the Agreements;
- d) Projects of unification of accounts and records of the refinements of the DIRF generator system;
- e) Sales Management Module Implementation, which enabled the issue of electronic invoices;
- f) Delivery of 17 projects in the area of Invoicing, which showed improvement in the routine of ambulatory invoicing, accountability reports for billing, AIH billing system revision, management controlling reports, of protocol and other routine records;
- g) Integrations in the creditors and the customer register and customization in the Registry and movement of Credit Note, which improved the routine in the financial area;
- h) Development of Electronic Purchase Requisition to the area of Materials, which aimed to establish an on-line document covering all the necessary information for the instruction of the purchasing process;
- i) The MEDEX Project has 29 pharmacies in the capital, Greater São Paulo and country side, with 26 pharmacies that have been integrated into the inventory system;
- j) Within Corporate, 27 projects were undertaken, aimed mostly at the modernization of network infrastructure resources, maintenance and expansion of the technological equipment and

modernization of Telephone Exchanges, and the Information Technology Area consists of 60% devices with high processing capacity, all updated with recent versions of desktop applications and 20% have installed the operating system Windows 7.

In 2010, the Research and Project Management has continued the viability studies, implementation and monitoring contracts/agreements signed with public and private, national and international departments concerning the proposed activities by its partners, particularly from the FMUSP/HC System. It has performed the analysis of all non-operating accounts of the institution, which represented in 2010 about R\$ 193 million in revenue. In December of this year, there were active in FFM 491 academic, scientific, research, health care, production of scientific and technology knowledge, health policies, institutional and clinical studies projects, which benefit the population directly or indirectly. Of these 491, we can highlight 149 projects subsidized with public and private, national and international resources, and 342 clinical trials sponsored by the pharmaceutical industry.

In 2010, the Communication area of Project Management and Research developed and made available to employees of the direct administration the new FFM Intranet, an interdepartmental communication channel. Its innovative layout gives users easy and fast search for information, documents, reports, manuals, forms, access to integrated systems and various other features, for all managers of FFM. It maintained the FFM website in permanently updated ([www.ffmpeg.br](http://www.ffmpeg.br)), making available to users of the FMUSP/HC and the general public useful information about the institution. It was also responsible for the FMUSP Modernization and Restoration Project website ([www.ffmpeg.br/restauro](http://www.ffmpeg.br/restauro)) and for the elaboration and edition of FFM 2007-2010 Management Report, FMM 2009 Activity Report and the FFM Relationship Manual. It coordinated the preparation and distribution of editions of the bimonthly FFM Journal and the entire institutional material (2011 calendar, business cards, stamp commemoration for its 25 years, etc.).

All assets control of the institution, the accounts, cash flows and book keeping operations are also managed by the Foundation, which counts about 150,000 records per year, in addition to document management of active and inactive files. The

centralization of these activities is the responsibility of the FFM Comptroller Department.

All purchases of materials, equipment and services, and administration of construction and renovation, among others, are made by the staff of the Department of Materials / National Purchase, always keen to get the best deals for the FMUSP / HC System, with a progressive economy in relation to market prices. In 2010, the Department moved the volume of purchases / contracts in the amount of R\$ 208.3 million, equivalent to 2712 cases. The savings generated in 2010 were R\$ 8.0 million, representing 3.7%, based on the lowest value presented by the original suppliers and the actual price negotiated / contracted by the FFM. These figures include acquisitions for the FMUSP / HC System, Specific Projects and the Units managed by FFM in the form of Social Organization: State-ICESP and IRLM; Municipal: Western Region - AMAS And UBSs, PS Butantã and PS Lapa;

The Department of Materials / Imports managed the import of supplies, equipment, subscriptions to periodicals, enrollment in courses and conferences for the Medical Research Laboratories, USP University of Medicine, the whole complex of the FMUSP Clínicas Hospital, ICESP and several specific projects, in a volume of US\$ 9.6 million, equivalent to 302 cases. Regarding 2009, it was observed that there was a lower volume of US\$ 23.9 million. That year (2009), the impact was related to purchases of equipment for ICESP, which was in the deployment phase of its technological area.

The Department of Legal Coordination serves the civil, administrative and labour fields by avoiding the

advisement of outsourced Law firms. Their activities not only focus on the needs of representation in litigation, but mainly in the control of righteousness in national and international contracts and agreements, signed by the institution, yet all documentation and regular tax before public departments. Besides ensuring that the process of certification of public utility and philanthropy, in 2010, was dedicated to the development, promotion and expansion of its activities, since the preparation and administration of hundreds of contracts and agreements until the coordination of labour disputes, civil and tributary, judicial and extrajudicial. It made the monitoring of court cases to the departments of the judiciary, Public Ministry, municipal, state and Federal Departments, The Court of Auditors, Social Councils and others and issued several legal opinions.

Besides the works of renovation, recovery and maintenance of buildings, gardens, parking lots and infrastructure of the state, which continued in 2010, the Pólo Cultural Pacaembu - PCP developed the following activities: a) preparing a "Preliminary Regime" to regulate the use of the parking lot by the FMUSP people b) participation in public hearings on the Review of Strategic Urban Planning of the City of São Paulo, c) participation in meetings with the committees of councilors and leaders of the City Council of São Paulo, to treat the correction of the erroneous release of PCP as a residential area, through the launch area as a Zone of Special Occupation (NR3), without damaging the preservation of the area as is required by DEPAVE, CONPRES, CONDEPHAAT, SEHAB, SEMPL and SVMA.

### 3 – The FFM institutional activities

Throughout 2010, the FFM has received through donations, the amount of R\$ 14.431.858,00 which was reversed for the purchase of equipment and medicines for the Medical School of USP and the fulfillment of the FMUSP/HC System and ICESP.

From 2007, the FMUSP/HC System through FFM, became the recipient of some donations as a replacement for collective moral damage compensation, arising from civil lawsuits filed by public prosecutors of the Labour Ministry against some companies. These donations in 2010 were R\$ 2.260.000,00 and benefited the Children's Institute and the Institute of Physical Medicine and the HCFMUSP Rehabilitation.

The social and assistance projects developed with the support of the FFM were the result of partnerships with various governmental and private departments, such as:

- Presidency: Human Rights Special Bureau - SEDH;
- Presidency: National Antidrug Bureau - SENAD;
- Health Ministry - MS;
- Science and Technology Ministry: FINEP – Project and Study Backer;
- Science and Technology Ministry: CNPq – Technological and National Council of Scientific Development;
- Culture Ministry;
- National Institute of Land Reform - INCRA;
- National Company of Agricultural Research - EMBRAPA;
- São Paulo Bureau of Health - SES
- State Bureau of Education: Foundation to the Education Development – FDE;
- State Bureau of the Rights of the Disabled;
- State Bureau of São Paulo Public Safety;
- Catavento Cultural and Educational;
- Fundação CASA – Social and Educational Adolescent Centre;
- Municipal Bureau of Health in São Paulo;
- Municipal Bureau of Education in São Paulo – SME;
- Municipal Bureau of the Disabled and Reduced Mobility in São Paulo;
- Municipal Council of the Children and Adolescent Rights – CMDCA;
- World Health Organization – OMS;
- Pan-American Health Organization – OPAS;
- United Nation Organization for Education, Science and Culture – UNESCO;
- United Nations Organization for Education, Science and Culture – UNESCO – CRIANÇA ESPERANÇA;
- United Nations Office on Drugs and Crime – UNODC;
- United Nations Development Programme – UNDP;
- Environment and Energy Institute;
- Information Centre of Health and Alcohol-CISA;
- Administrative Development Foundation – FUNDAP;
- Research Support and Extension Foundation – FUNAPE;
- Technology Support Foundation – FAT;
- Furnas – Centrais Elétricas S/A;
- Maria Cecilia Souto Vidigal Foundation
- Alfa Group;
- Dixtal Biomédica Indústria e Comércio Ltda.;
- União da Agroindústria Canavieira do Estado de São Paulo - UNICA
- Alzira Denize Hertzog da Silva Beneficent Association- ABADHS
- National Institute of Health – NIH;
- World Health Organization;
- Blood Systems Research Institute;
- London School of Hygiene & Tropical Medicine;
- International Centre for Genetic Engineering and Biotechnology – ICGEB;
- International Aids Vaccine Initiative - IAVI
- University of Cincinnati;
- University of Virginia;
- University of Pittsburgh;
- University of California;
- University of Wisconsin
- Maastricht University – School for Mental Health and Neuroscience;
- The Smile Train;
- The J. David Gladstone Institute;
- The Ford Foundation;
- International Atomic Energy Agency – IAEA
- Ludwig Institute for Cancer Research;
- The Brain and Behavior Research Fund – NARSAD.

In 2010, the FFM actively participate, as a Member or a Consultant, in the following Comissions, Committees, Workgroup and other FMUSP/HC System initiatives:

- ✓ Continuing Education School Committee;
- ✓ Committee of the National Network of Clinical Research;
- ✓ Monitoring Commission for Restructuring the University Hospitals;
- ✓ Commission for Financial Support to FMUSP Students of Medicine;
- ✓ Evaluation Committee of the Operational Plan;
- ✓ Commission of Plan Composition of jobs and salaries;;
- ✓ Clinical Study of the HCFMUSP Clinical Board;
- ✓ Implementation Commission of the Ciclotron Project
- ✓ FMUSP Research Commission;
- ✓ Control and Planning Commission of the HCFMUSP Deliberative Council;
- ✓ HCFMUSP Strategic Planning Commission;;
- ✓ Medical Residency Commission;
- ✓ Vivarium Commission;
- ✓ Pólo Pacaembu Real State Commission;
- ✓ LIM's Building Commission;
- ✓ Health Committee –TISS Aplicative;
- ✓ Information Technology Committee;
- ✓ Managing Committee of the Management Contract of the West Region with the Municipal Department of Health;
- ✓ FMUSP Congregation;
- ✓ Zerbini Advisory Council Foundation;

- ✓ Advisory Board of the FMUSP Institute of Psychiatry;
- ✓ HCFMUSP Deliberative Council;
- ✓ ICESP Directing Council – São Paulo Cancer Institute;
- ✓ Orthotics, Prosthetics and Special Materials Study Group;
- ✓ Western Region Technology Group Project;
- ✓ Group Manager of the HCFMUSP Corporate Implementation System
- ✓ HC/FMUSP/FFM Operating Group;
- ✓ Core People Management, and
- ✓ Technological Urban Planning.

The FFM also supports the agreements in the fulfillment of its several events. In 2010, it was participating in the organization and coordination of the following technical-scientific and institucional events: V Course on HIV Pathogenesis - LIM 60; Emilio Ribas Support Project of Restoration – Dinner at Rubayat Restaurant; Support Paulista Congress of Medical Education - CPEM 2010; IX ICAS Support - Brazilian Congress Interdisciplinary Home Care, Support V CONASS - National Congress of Social Service Health; X Support Discussion Forum for Social Policies - Update on Social Security; IX Forum Support Hospital Hospitality; Support VI National Congress of Nurses, Hospital das Clinicas - CONAENF, and International Conference on Epidemiology - EPI CVE – Epidemiology Surveillance in the 21 Century.

Furthermore, it financially supported the FMUSP/HC System in the following technical-scientific and/or institucional initiatives, which objectives were in line with its Social statute:

Approval	Event
12/17/09	4th Symposium - Advances in Medical Research of Medical Laboratories Research from the HCFMUSP
12/17/09	3 <sup>rd</sup> Course - Introduction on the League of Otorrinolaringologic Abilities
12/17/09	Paulista Congresso f Medical Education – CPEM 2010
12/17/09	International Theoretical Course on Viral Hepatitis and Human Host
12/18/09	V CONASSS – National Congresso f Social Services in Health VIII SIMPSSS – Social Service in Health Symposium
01/06/10	University Health Day - JUS
02/25/10	III Introductory Course on the Pedriatic Emergency League
02/25/10	LV Introductory Course on the Combat Against Rheumatic Fever League
02/25/10	XII Introductory Course on the Intensive Therapy League
02/25/10	Clinic Emergency League
02/25/10	Syphilis Combat League and Other Sexually Transmitted Diseases

02/25/10	XXIX CFMUSP University Medical Congress - COMU
02/25/10	X Social Politics Discussion Forum – Social Security Update
02/25/10	Freshman Reception Week
05/04/10	Trauma Surgery League
04/05/10	PDT 2010 – VI International Colloquium of Psychopathology and Psychotherapy of Work and I Congress of the International Association of Psychodynamics and Psychopathology of Work
04/05/10	III Introductory Course to the Surgical Technique and Experimental Surgery
04/05/10	Immunodeficiencies League
04/05/10	II Introductory Course on Thyroid
04/07/10	XIII League Update Course in Anesthesiology, Pain and Intensive Care, FMUSP
04/07/10	Project Diagnosis Leishmania – LIM 46
04/30/10	Introductory Course on the Clinic Neurology
04/30/10	XII Electrocardiogram Course
04/30/10	IX CIAD – Interdisciplinary Home Care Brazilian Congress
04/30/10	Symposium on Neglected Diseases in Primary Health Care
04/30/10	Congress Asset Protection of Public Prosecutor of the State of Sao Paulo
05/27/10	Symposium on Stem Cells, Potentialities, Ethical Implications and Prospects in the Health Area
05/27/10	Introductory Course on the League of Gynecologic Surgery
06/01/10	IV Journey of Phonoaudiology, University of São Paulo
07/01/10	Symposium Paulista of Trauma Leagues
07/01/10	Course of the League of Surgery and Surgical Technique
08/20/10	Brazilian Workshop on Developmental Origins of Health and Illness - DOHaD
07/01/10	São Paulo Advanced School on Primary Immunodeficiencies: Unraveling Human Immuno-Physiology
07/12/10	League of Sleep Disorders
08/20/10	Generation Meeting 2010
08/20/10	IX Hospital Hospitality Forum
08/20/10	FITx 2010 – International Forum for Digestive Transplant
08/20/10	V Hepatology International Meeting between the University of São Paulo and the University of Barcelona
08/20/10	Bandeira Científica Project
08/20/10	6 <sup>th</sup> Event of the Public Servant Day
08/20/10	Introduction Course and Admission Test - Multidisciplinary Care Prenatal League
08/20/10	XXX Course: Introduction to the League of Control of Mellitus Diabetes
08/26/10	II Introductory Course on the League of Autoimmune Diseases
08/26/10	XXII Introductory Course on the League of Primary Care for Women
08/27/10	XIX Course: Introduction to the League for the Control of Epilepsy
09/03/10	III Course: Introduction to Academic League of Cognitive Neurology and Behavior
09/16/10	ICC League and Heart Transplantation in Children
09/16/10	57 <sup>o</sup> Brazilian Congress of Anesthesiology
09/30/10	XV Introductory Course on the League of Neurosurgery
09/30/10	III Introductory Course to Academic League of Phonoaudiology Functions in the Face

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09/30/10	IV Introductory Course of the League of Metabolic Syndrome
09/30/10	III Introductory of Academic Phonoaudiology in Dysphagia
09/30/10	The cultic feast Daycare / Central Pre-School
09/30/10	International Conference on Epidemiology – EPI CVE – Epidemiological Surveillance in the 21st Century
10/04/10	Pre-College Course MedEnsina - Selection
10/28/10	League of Clinical Neurology – material purchase
10/28/10	Extended Academic Medical - equipment purchase
10/28/10	XII Study Day on Aging and Oral Health - Aging Smiling Project
12/09/10	Meeting of the Division of Clinical Infectious and Parasitic Diseases

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## Part 1:

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# FFM partnerships and its role in comprehensive health care and quality of life

# 1 – FFM role as a Social Organization – Management Contracts

## Introduction

Conceptualized as non-profitable private corporations, whose activities are directed to education, scientific research, technological development, protection and preservation of the environment, culture and health, social organizations are entities that receive the title of their own Public Administration and are authorized to hold with it management contracts, to perform social services that are not exclusive to the State.

From the classification of the FFM as a Social Organization, fulfilling its main objective, which is to promote the development of health care for the benefit of the whole community, between 2008 and 2010, the FFM has signed four management contracts, whose activities were inserted to their operations on a sustained, sound and based form on the expansion, improvement and training of its staff.

On the extent of Federal Level, they were entered into two contracts with the State Bureau of Health (SES). In 2008, the FFM signed a contract to manage the activities of the Cancer Institute of the State of São Paulo "Octavio Frias de Oliveira" - ICESP. In 2010, the FFM has signed a contract for the management of activities and health services at the Lucy Montoro Rehabilitation Institute.

Two other agreements were signed under a Municipal Level with the Municipal Health Bureau of São Paulo, together with the FMUSP. In 2008 it was held a contract to manage the actions and health services in the Butantã / Jaguaré Microregion Region. In July 2010, it was held a contract to the management of health services and actions of the Lapa Municipal ER (Professor John Mezomo Catarina) and Butantã Municipal ER (Prof. Dr. Caetano Virgilio Neto).

## A - The ICESP State Management Contract

In 2008, FFM signed a management agreement with the State Bureau of Health (SES), in managing the activities of the Cancer Institute in the State of São Paulo "Octavio Frias de Oliveira" - ICESP, highly specialized tertiary care hospital in the cancer treatment, which receives patients referred from throughout the State to care for complex cases. Aiming to provide the Office of the necessary conditions to position itself as a research centre of international reference in the cancer field, the triple teaching, research and extension to the community are the basis of the performance of the FFM, with the FMUSP / HC System cooperation. This is an innovation, since it is the first time that teaching and research are included in such contract.

Opened in May 2008, the ICESP is the largest cancer hospital in Latin America, it is automated with the latest in technology and the latest equipment. The Head Office, next to the FMUSP / HC System encloses a hexagonal building with 112 meters and 28 floors (there are 4 basements), built in an area of approximately 84,000 m<sup>2</sup>.



*Front of ICESP Building*

The Institute currently serves more than 6,000 appointments per month and is about 60% capacity already deployed. The goal is to transform ICESP in a research centre of international reference in the cancer field, including the study of new drugs and innovative treatments for the disease.



In 2010, the ICESP had already the following structure:

- 235 beds for medical and surgical inpatient;
- 44 ICU beds;
- 61 armchairs for chemotherapy;
- 9 surgical rooms;
- 62 active doctor offices;
- 6 tomographers;
- 2 magnetic resonance imaging.



*ICESP room in a starry sky environment simulation*

An Interventional Radiology and 2 more Magnetic Resonance Imaging 2 PET-CT and 1 SPECT are being implemented.

## B – The Lucy Montoro State Management

In 2010, the FFM Management signed a contract with the State Bureau of Health (SES) for the management of activities and health services at the Lucy Montoro Rehabilitation Institute. The main objective of Lucy Montoro Rehabilitation Network is to deploy in the State of São Paulo, an Assistance and Rehabilitation Network to meet the needs of expansion and decentralization of care and supplying of prosthesis and mobility aids, and promote technological development in the area and ensuring the qualification of human resources

Opened in September 2009, the Lucy Montoro Rehabilitation Institute, a unit of the network in the district of Santo Amaro, was designed to be a centre of excellence in treatment, teaching and research in rehabilitation. The 10 story building and 13,500 m<sup>2</sup>, fully adapted, homes ambulatory treatment and hospitalization in an environment that does not refer to a "hospital".

The unit serves people of all ages, however, there are an entire floor to the young audience, because it requires a different approach. The setting was designed for children to join in the fun therapies, being a place completely decorated having the furniture suited for them.

This is the first unit in Sao Paulo hospital to offer hospitalization for patients in a severe stage. In comfortable and functional rooms, the patient receives the care from a specialized team in rehabilitation twice a day and can immediately start specific treatment for the deficiency.



*Hospital facilities in São Paulo*

The new unit has 80 single rooms, 20 offices and diagnosis wards of a thousand square meters. Still under implementation, 40% of the 80 beds are being used. By the end of 2011, the estimated attendance is 12 thousand people per month in consultations, rehabilitation, occupational therapy and cutting edge treatments.

## C – The Municipal Management Contract of the Western Region Project

It was established from 2008 through the management contract between the Municipal Bureau of Health of São Paulo and the FFM, together with the FMUSP, a partnership for the reorganization of health care within a defined population area, which includes families enrolled in Family Health Program of the Butantã / Jaguaré Microregion. This reorganization of health care, integrated in a hierarchical way, with emphasis on strengthening primary care, consists the FMUSP teaching care platform and serves as an interface for performing teaching, research and technological development.



*1<sup>st</sup> floor aisle from Vila Dalva UBS before restoration*

Arquivo UBS Vila Dalva

management of information systems, the formation of teams committed to results and oriented to the needs of the population, and the construction and development of technologies that can be replicated elsewhere in SUS.

The contract provides for the management of public health facilities in the region (Basic Health Units (UBS), AMAS, specialty ambulatories and emergency rooms), in addition to human resources management at the city hall area, with the necessary complement to a performance of quality.



*Basement aisle from Vila Dalva UBS after restoration*

Sabrina Pereira

Consisting of six Administrative Districts (Butantã Morumbi, Raposo Tavares, Rio Pequeno, Vila Sônia and Jaguaré), this microregion is located in the west part of the city and has a total population of about 420,000 inhabitants. The objectives of the partnership are to develop a platform for education, research and extension, harmoniously combining the academic and the activities of assistance. The plan provides for comprehensive health care in a hierarchical way with reference and against reference system between primary, secondary and tertiary care, improving the capacity of planning and management of the facilities involved, starting from the development of technologies and the

Through the project, the primary care equipments are integrated into the secondary care (Universitarian Hospital, Mario Degni Hospital and Specialty Centre) and tertiary level (Hospital das Clinicas FMUSP Complex). It is under deployment an electronic chart platform in order to allow online performance of references and against references. With it, you can create a quality platform for the integration of the three levels of health care (primary, secondary and tertiary).

Currently, the Project operates in a population of 400,000 people, and within three years it will cover the population of 1.5 million people.

## D –Municipal Management Contract of the Emergency Rooms

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In July 2010, it was held a Management Contract with the Municipal Bureau of Health to manage the actions and health services of the Lapa Municipal ER (Professor John Mezomo Catarina) and Butantã Municipal ER (Prof. Dr . Caetano Virgilio Neto).

The Municipal emergency rooms are part of the network services of the Municipal Bureau of Health, whose function is to provide unscheduled medical and dental care and attend emergencies and medical emergency patients referred to pre-hospital mobile health units or Primary Care units. The inclusion of these two new emergency rooms increases the scope of care, as the Butantã ER is located in a region near the UBS that are already part of the contract, but the Lapa ER is totally situated in a new region.

Another important difference is that the demand for care to emergency rooms is spontaneous, while UBS serve only registered patients. Integral part of the service network of the Municipal Bureau of Health, the emergency rooms have the function to meet emergencies and medical emergencies referred from the pre-hospital mobile units or Primary Care units. That is where seriously ill patients are treated, who get under 24-hour

observation, after that being released or sent to other referral hospitals when needed. The Butantã ER provides care in Internal Medicine, Pediatrics, General Surgery, Orthopedics and Traumatology and Dentistry. The management contract provides an average of 4,000 calls per month, referring the health units in the Butantã subdistrict.



*Lapa Municipal ER*

Lapa's Municipal ER is in Vila Leopoldina and provides care in all Butantã ER fields and also Psychiatry. There, the monthly appointments should be around 8,000 per month. The reference is to the the health units in the regions of the Pinheiros and Lapa.

## 2 - The FMUSP/HC System

Since its establishment in 1986, the vast majority of agreements signed by the FFM looked for supporting and benefiting the activities of the University of Medicine of São Paulo (FMUSP) and the Clínicas hospital (HCFMUSP), its main partners.



*USP University of Medicine aerial view and a part of Clínicas Hospital*

The Academic Health system built from the USP University of Medicine is currently called the FMUSP / HC System and is conceptually an academic health system, that is, a system consisting of a medical school and another school or program associated with the health area, and at least one teaching hospital itself or in combination. The academic health systems represent large and complex organizations that provide services, basically of high complexity of some parts of society, as the poor and those with serious illnesses. These organizations are committed to

improving the health of patients and the public through the integration of teaching and education, research and innovation, and culture and extension. The system is complemented and supplemented by partnerships, agreements, and integrations with other institutions.

Today, the FMUSP / HC System is the largest in the country, comprising, besides the University of Medicine, Institutes specialized in high-complexity care (tertiary care), hospital of medium complexity (secondary care), auxiliary hospitals, special units for comprehensive care of patients with HIV / AIDS, Health Centre (primary care), Basic Health Units (primary care) and Laboratory of Medical Investigation (LIM).

In the three levels of care, it serves about 2.5 million patients annually, is responsible for about 7% of all research conducted in the area of health in Brazil (3% in all fields of knowledge), it has 1,400 undergraduate students in their 4 courses, 1,500 post graduate students (strict sensu) and about 1,000 residents.

Research activities include Basic Research, Basic Research linked to the Application or Applied Research, and Clinical Research. Considering that the generation of knowledge preceding the application, preferably without a large gap between one and another, it is very important to ensure that this transfer is done continuously and quickly.

The University of Medicine Foundation is responsible for managing a series of aid projects that directly affect society. Elderly, children, needy families and people with disabilities and HIV receive assistance through partnerships and agreements established between the FFM and other institutions connected to the FMUSP / HC System.

### 3 – USP University of Medicine - FMUSP

The FMUSP / HC System is the oldest Brazilian university system of health and has its origin in the creation, in 1912, of the University of Medicine and Surgery of São Paulo (today, University of Medicine of the University of São Paulo, incorporated into the University of São Paulo in 1934). With support from the Rockefeller Foundation, it was established in the country a new model of medical education, with the reorganization of the research teaching and the establishment, in 1944, of a teaching hospital linked to the university.

Today, FMUSP is the mother cell of a complex system involving academic health care centers, research, education and professional qualification. The most traditional and respected medical school in the country, built over nearly a century, unquestioned leadership in the development of teaching and research and in the application of this knowledge to improve population health.

In 2008, it held the 88th and the 162th position between the medical schools of America and the world respectively. In 2009, it improved its performance, ranking in the 68th and 111th, in accordance with the *Higher Education Evaluation and Accreditation Council of Taiwan* (ranking among the best latin schools).

The FMUSP activities are characterized by the integration between teaching, research and assistance and are aimed at: a) Provide, develop and improve the teaching of undergraduate and postgraduate (strict sensu and lato sensu) in the areas of medicine, physiotherapy, speech therapy and occupational therapy, b) Conduct research in the field of health sciences and those who for their purposes may contribute to the progress of medicine, physiotherapy, speech therapy and occupational therapy in all its branches; c) Extend services to the community, seeking integration with the institutions for the solution of medical-social problems.

In this context, the FFM has developed an important role in supporting education and research developed at FMUSP, regarding the project of restoration and modernization. Developed between 2000 and 2008, it had major support from the FFM, which split with the FMUSP Project coordination and fundraising. The initiative aimed to enhance the historic heritage and adapt their space to the activities developed nowadays, improving infrastructure and logistics work processes. The project promoted not only a physical reform but a profound human and cultural change throughout the community of FMUSP / HC System. The maintenance work continues, now incorporated into the routine functioning of FMUSP.



*A sequel of images from the FMUS building: on the left, the building in 1931 after its opening; in the middle, the back of the building before the restoration and on the right, after restoration.*

## Butantã School Health Centre

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The Samuel Barnsley Pessoa School Health Centre (CSEB) - CSE Butantã is a teacher-care unit of the USP University of Medicine, under the responsibility of the Departments of Preventive Medicine, Pediatrics, Internal Medicine and FOFITO (Speech Therapy, Physiotherapy and Occupational Therapy), focused on the Butantã population.

Since 1977, the CSEB has contributed to the development of practices of primary health care in Brazil, particularly through its training activities and research service. The Centre develops joint activities with the Western Region Project.



*Samuel Barnsley Pessoa School Health Centre*

In 2010, 15,056 ambulatory procedures were made.

## USP University Hospital

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Opened in 1981 as the first teaching hospital of community character, it is dedicated to graduation in Medicine, Pharmaceutical Sciences, Dentistry, Nutrition, Nursing, Physiotherapy, Speech Therapy, Occupational Therapy and Psychology. It acts only on general areas such as Internal Medicine, Surgery, Obstetrics and Gynecology, Orthopedics and Pediatrics, with the support of Ophthalmology and Otolaryngology and the areas of diagnostic support as Anesthesiology, Endoscopy, Pathology and Radiology.

The UH has distinguished action on the integration between primary and tertiary care, being a hospital with a medium complexity. In research, the UH has been distinguished in epidemiological studies, such as the Longitudinal Study of Adult Health, the Study of Morbidity and Mortality of Stroke and several unpublished research, which determined the profile of microbial agents associated with diarrheal diseases and respiratory diseases.



*Front of the USP University Hospital*

The UH is maintained by USP with only an agreement signed with the SUS. The emergency unit serves 550 to 950 patients per day, the ambulatory serves 20,000 patients per month and in the hospitalization unit, with 220 beds, 1,500 hospitalizations are made per month.

## 4 - The FMUSP - HCFMUSP Clínicas Hospital

The Clínicas Hospital of the University of Medicine is an agency of the State of São Paulo linked to the Bureau of Health for coordination and management associated with the USP University of Medicine for education, research and actions that provide health services for the community.



*Aerial view from HCFMUSP*

In terms of health services, it operates through the actions of health promotion, disease prevention, medical and hospital care at the tertiary level of complexity and rehabilitation of sequelae after the treatment of diseases.

Since its opening, in April 19, 1944, the FMUSP Clínicas Hospital is considered one of the most Brazilian important centers for the dissemination of technical-scientific information, and also a centre of excellence and reference in the field of education, research and assistance. It consists of 7 Institutes, 2 Auxiliary Hospitals, Medical Research Laboratories, specialty units and other support areas such as the Administration Building and Annexes, the Rebouças Convention Centre and the School of Continuing Education.

The whole Complex is situated in a 365.099,24 m<sup>2</sup> area. There are eleven hospital units, each one serving a specific patient, specializing in tertiary

serving. They are: Central Institute – ICHC; Traumatology and Orthopedics Institute – IOT; Institute of Psychiatry – IPq; Child Institute – ICr; Heart Institute – InCor; Radiology Institute – InRad; Physical Medicine Institute and Rehabilitation – IMREA; Aids House – CAids; Suzano Auxiliary Hospital – HAS; and Cotoxó Auxiliary Hospital – HAC.

The secondary care is performed at the University Hospital of USP and the primary care in basic health units in the Midwest region of the county. This structure provides a systemic view of health, which integrate the three levels of care - primary, secondary and tertiary.

As a teaching hospital, it is used as a field training of professionals and students of health, maintaining excellence in the quality of teaching. In the area of research, it contributes to health promotion, prevention and treatment of diseases and for the scientific development of the country.

The range of work of the institutional research is also broad, ranging field from epidemiological research to clinical research, through the cellular and molecular biology. The FMUSP / HC System unites all links in the chain of research and the development of healthcare, from basic research to clinical research from the science aspect to the socio-economic aspect, building the largest assistance centre in Latin America.

The FFM has a fundamental role in supporting the development of integrated health care in the FMUSP / HC System in its various institutes and units, ensuring the poor a continuity in care by medical and hospital SUS System - at rates above 94%.

## The Institutes, Auxiliary Hospitals, Specialized Units of Health, LIMs and CCR

The University Agreement, held since 1988, between the Health Bureau and the FMUSP Clínicas Hospital, with the FFM intervention, it allows FFM the realization of billing and collection operations,

the control and distribution of values for the services provided from the several HCFMUSP units of the SUS clientele, whose performance in 2010 is described below and can be summarized as follows:

### Performance of the Institutes, Auxiliary Hospitals and HCFMUSP Specialized Units in 2010

Institute / Hospitals	Hospitalizations	Procedures	Beds	ICU beds
ICHC + PAMB	36.554	7.215.250	1.034	157
INRAD	-	335.089	08	-
ICR + ITACI	5.266	382.038	169	53
IOT	5.684	314.548	150	12
IPq	3.108	163.208	-	01
IMREA	-	180.779	-	-
CAids	187	28.481	9	-
HAS	1.528	7.504	120	-
HAC	1.232	457	48	-

#### Legenda

ICHC	Central Institute	IOT	Traumatology and Orthopedics Institute
PAMB	Ambulatory Buildings	IPQ	Institute of Psychiatry
INRAD	Radiology Institute	IMREA	Physical Medicine Institute and Rehab
ICR	Child Institute	HAS	Suzano Auxiliary Hospital
ITACI	Institute of Child Cancer Treatment	HAC	Cotoxó Auxiliary Hospital

## The Central Institute – ICHC

The Central Institute - ICHC is composed of the Central Institute and the Ambulatory. It concentrates most of the HCFMUSP Complex medical specialties: Surgical Clinic (General, Digestive System, Liver, Head and Neck, Thoracic, Vascular), Internal Medicine (Hematology, Endocrinology, Pulmonology, Nephrology, Allergy and Immunology, Rheumatology, Gastroenterology, Geriatrics), Clinical Neurology and Surgery, Urology, Gynaecology, Obstetrics, Dermatology, Plastic and Burns, Ophthalmology, Otorhinolaryngology, Endoscopy, Infectious and Parasitic Diseases among others. This building is also the largest Surgical Centre and Central Laboratory Division. It is the first laboratory of the public service in the country to receive the ISO 9002.



ICHC Central Building

The Ambulatory Building is directly connected to the Central Institute and offers treatment to outpatients, and rely on areas of diagnostic and therapeutic support. It has in its structure the Pharmacy Division, responsible for the system of individualized doses of medicines to serve the beds of the Institute as a way to increase patient safety in hospital and have greater control and waste combat.



Ambulatory Building Area

In 2010, through FFM, the billing of 36.554 hospitalizations and 7.215.250 ambulatory procedures were performed.



## Radiology Institute – InRad

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The Institute of Radiology - INRAD is a centre of excellence and national and international reference in Radiology, with pioneering technology in diagnosis, imaging therapy and oncology treatment. Performs services in the areas of General Radiology, Ultrasound, Computed Tomography, Magnetic Resonance Imaging, Vascular Radiology, and Interventional Neuroradiology, Diagnostic by Imaging of Breast Diseases, Radiotherapy and Nuclear Medicine.



*Front of the Radiology Institute*

The modernization of its equipment with the latest technology, combined with qualified professionals, contribute to greater efficiency in the diagnosis and therapy of various pathologies, raising the quality standard of services provided to patients.

It was the first Latin American institution to apply the techniques of nuclear medicine and the first South American institution to have brachytherapy equipment of a high dose rate. It was also the first hospital in the country to have installed a unit of production and development of positron-emitting radiopharmaceuticals in nuclear medicine (Ciclotron Project) to use it in diagnostic tests of small tumors and in research projects in the area of molecular imaging.



*Front of the Nuclear Medicine Centre*

It was conducted, in 2010 by the FFM, the billing of 335,089 ambulatory procedures.

## Traumatology and Orthopedics Institute – IOT

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The Institute of Orthopedics and Traumatology - IOT provides specialized care to patients with orthopedics and traumatology issues, it is a centre of excellence in orthopedics and traumatology care with teams in various sub-specialties, such as: Knee, Hip, Foot, Hand, Physiatry, Spine, Cerebral Palsy, Bone Tumors and replantation of limbs and prosthetics.

The Laboratory of Movement Studies is specialized in the assessment of functional movement and capable of performing all tests related to exercise physiology. We can also highlight in the Institute, the Tissue Bank of the Muscle-skeletal System, the Division of Prosthetics and Orthotics and the Emergency Referred Unit for treatment of orthopedic trauma of high complexity.



*Front of the Traumatology and Orthopedics Institute*

It was conducted in 2010 by the FFM, the billing of 5,684 hospitalizations and 314,548 ambulatory procedures.

## The Institute of Psychiatry – IPq

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The Institute of Psychiatry - IPq is an advanced centre for assistance, research and education in psychiatry and functional neurosurgery. For nearly six decades, it has combined human sensibility and scientific progress, bringing together some of the best professionals in the country to offer patients personal attention in a high level. The IPq is a pioneer in the creation of specialized programs and services, covering all psychiatric disorders in different stages of life

Its structure includes ambulatories, inpatient units, laboratories, diagnostic services, day hospitals, rehabilitation centers, psychotherapy, dentistry for psychiatric patients, as well as a modern centre for functional neurosurgery.



*Front of the Institute of Psychiatry*

It operates by means of services, groups and specialized clinics, focusing on the different subspecialties in psychiatry, among which are:

- SEPIA – Adolescent and Children Psychiatric Service;
- GREA – Drug and Alcohol Study Group;
- GRUDA – Affective Disease Group;
- AMBAN – Anxiety Ambulatory;
- PROJESQ – Schizophrenia Project;
- PROTOC – Obsessive-compulsive Disorder Project;
- AMBULIM – Bulimia Ambulatory, Anorexia and other food disorders;
- PROTER – Senior Project;
- PRATO – Obese Serving Project;
- PROSEX – Sexuality Project;
- AMJO – Pathological Ambulatory;
- Psychotherapy Service;
- CRHD – Reference Centre;
- Referral Group;
- Day-Hospital.

It was performed in 2010, 3,108 hospitalizations and 163,208 ambulatory procedures, whose billing was through the FFM.

## Child Institute– ICr

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Considered a a a National Reference Centre in Child Health by the Ministry of Health, the Child Institute - ICr is recognized for the quality of their care, training of its professional staff and incorporation of the most modern treatment resources, gathering the pediatric subspecialties of the FMUSP Clínicas Hospital.

It assists children and adolescents between 0-19 years with high complexity diseases. It has twenty one subspecialties. The use of advanced technology by skilled professionals enables the performance of high complexity diagnostic and therapeutic procedures. These procedures include liver transplants, kidney and bone marrow, chemotherapy and dialysis for children, treatment of newborns at high risk, intensive care, and ambulatory care and hospitalizations for chronic and complex diseases in childhood and adolescence, always valuing humanization.



*Front of the Child Institute*

In 2010, the joint production of the ICR and ITACI - Institute of Child Cancer Treatment was 5,266 admissions and 382,038 ambulatory procedures, whose billing was done by FFM.

## Physical Medicine Institute and Rehab – IMREA

The FMUSP Clínicas Hospital Physical Medicine Institute and Rehab - Imre, former Division of Rehab Medicine - DMR, is a reference to matters pertaining to the field of rehabilitation and pioneer of medical-care to promote the rehab treatment of patients with different stages of rehabilitation in the pursuit of social inclusion.



Professional and interdisciplinary team attending people with disabilities

Consisting of three units - Vila Mariana, Lapa and Jardim Umarizal - serves people with disabilities or potentially disabling diseases, developing their physical, psychological, social, professional and educational potential. It provides rehabilitation and social inclusion at units in Vila Mariana, Umarizal and Lapa. The sessions are conducted by a multidisciplinary team specialized in rehabilitation, which has complete infrastructure and the most modern technology for diagnosis and treatment.

IMREA performance at units in Vila Mariana, Lapa and Jardim Umarizal, in 2010, is summarized in the tables below:



Vila Mariana Unit

### IMREA performance - Vila Mariana Unit - 2010

Ambulatory / Consultations	Quantity
Triage	1.151

New Medical Consultations/Return	10.965
Extra Consultation	274
Performed Exams	4.056
Scheduled Consultations	14.632
Performed Consultations	12.390
<b>Multiprofessional Attendance</b>	<b>Quantity</b>
Total Patients Served per year	89.788
Total Patients Served per year	
Functional Pool	5.016
Provided Care/General	163.082
Total Patients	469
Day/Average/General	

### IMREA Performance - Lapa Unit - 2010

Ambulatory / Consultations	Quantity
Triage	1.754
New Medical Consultations/Return	6.077
Extra Consultation	291
Performed Exams	132
Scheduled Consultations	9.715
Performed Consultations	8.122
<b>Multiprofessional Attendance</b>	<b>Quantity</b>
Total Patients Served per year	224.895
Total Patients Served per year	
Functional Pool	16.772
Provided Care/General	226.132
Total Patients	1.055
Day/Average/General	

Note: Patient day - average General\_ Calculation : Total of Performed Exams + Performed Consultation + Served Patients by Multi Team + Served Patients at Funcional Pool Year/Working Days per year.

### IMREA Performance - Jardim Umarizal Unit - 2010

Ambulatory / Consultations	Quantity
Triage	822
New Medical Consultations/Return	5.954
Extra Consultation	229
Performed Exams	41
Scheduled Consultations	8.155
Performed Consultations	7.005
<b>Multiprofessional Attendance</b>	<b>Quantity</b>
Total Patients Served per year	50.763
Total Patients Served per year	
Functional Pool	0
Provided Care/General	124.829
Total Patients	244
Day/Average/General	

## Suzano Auxiliary Hospital – HAS

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Located in the city of Suzano, the Suzano Auxiliary Hospital - HBP acts as the rearguard of the various institutes of the FMUSP / HC System and aims to assist medical care assistance specialized in care for long-term patients of the hospital. By its peculiarity it has the distinction of hospitality in attendance, where all the multidisciplinary teams act as one.

At the hospital, various humanization actions are developed with patients, families and staff, with the aim of improving the quality of life and avoiding the disruption of social and family ties due to long hospitalization time .



*Suzano Auxiliary Hospital*

In 2010, 1,528 admissions were made and 7,504 ambulatory procedures, billed by the FFM.

## Cotoxó Auxiliary Hospital

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Located in the district of Pompéia, the Cotoxo Auxiliary Hospital - HAC acts as a rearguard hospital, providing medical care assistance specialized in intermediate care for patients transferred from the Heart Institute, the Child Institute and Central Institute, which are in a sub-acute non-critical clinic situation. The hospital serves as the School of Health Administration and is the field of teaching and research in hospital management and it is making managers through its Program for Advanced Studies in Hospital Administration and Health Systems - PROAHSA.

In 2010, 1,232 admissions were made and 457 ambulatory procedures, whose billing was made through the FFM.



*Front of Cotoxó Auxiliary Hospital*

## Aids House

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The Extension Service to the HIV / AIDS Patient Care - the Aids House has been in operation since 1994. It's ambulatory and day hospital is destined to teaching, research and assistance to adults living with human immunodeficiency virus - HIV and AIDS. It serves approximately 3,300 adult patients with HIV / AIDS and has the administrative support of FFM since 2004.

In the area of education, 90% of college-educated professionals, who taught are being highlighted as follows:

- Theoretical-practical development of activities of the Residence Program to R-1, R-2 e R-3;
- Supervised training for foreign doctors from Angola and Mozambique;

- Supervised training for doctors of the FMUSP complementary training program;
- Class development and activities from the HIV/Aids of FMUSP prevention league;
- Lectures given to students of the 4<sup>th</sup> year of graduation at FMUSP;
- Lecture delivered at the Postgraduate Course in Tropical Medicine Public Health from the Goiás Federal University;
- Development of the activities of a Training Program in Psychology, Social Work and Hospital Dentistry at HCFMUSP;
- Supervised training for graduate students of nursing from USP Nursing School and from Santa Casa;

- Continuing Education Program for professionals, employees and contractors who work at SEAP HIV/Aids.
- In the research field, 88% of professionals, including the administrative area, who participate in the research project:
  - 7 scientific publications were made;
  - Realization of Scientific Journey, whose presentations were focused on the results of finished projects;
  - Oral presentation of the results from the Cost-Effectiveness for Incorporating of the Meningococcal C Vaccine Conjugated in the Immunization National Program Routine” research, at the invitation of the Ministry of Health;
  - Lecture about “Resistent Tuberculosis and Immigration” at the “XIV Congress de la Sociedad Española de Enfermedades Infecciosas y Microbiología Clínica”.



Aids House in the Central Area of São Paulo

In the care area, 100% of professionals are involved in individual assistance and 78% in interdisciplinary care. 3,206 patients were followed. The service is offered in the areas of infectious diseases, mental health (psychiatric and psychological), women's health (gynecology), ophthalmology, cardiology, dental health and nutrition. It has a day hospital with nine beds, and pharmacy for dispensing antiretroviral and complementary drugs. In the table below, we can see the welfare activities undertaken by the House of AIDS in 2010.

Aids House Performance in 2010	
Activity	Quant
Patients being followed	3.082
Medical Consultation performed	15.658
Dentistry Consultation	919
Nurse Attendance	3.533
Psychology attendance	1.038
Social Work Attendance	1.268
PPD Test – tuberculin test	719
Patients vaccinated against influenza virus	692
Patients vaccinated against A H1n1	2.700
Day hospital daily	597
Antiretroviral medicine receipt served	30.093

## Medical Investigation Laboratories – LIMs

The Medical Investigation Laboratories at the Hospital of the FMUSP (LIMs) are a reference to the scientific quality in the country, compared to the best institutions in the world with similar purposes, with national and international projection, providing the core reference and excellence in research. It has played, particularly in the last decade, an invaluable role in the University of Medicine of São Paulo and has maintaining the processes of creation of original knowledge, training new researchers and helping them to improve the education and academic education of students, teachers Physicians and other professionals in the Clinicas Hospital

In 2010, the LIMs completed 35 years of foundation. Connected to the Clinicas Hospital of the Medical

School of USP, now numbering 62 laboratories, covering more than 200 research groups, with the participation of 791 professionals, including 335 doctors. The results of research reach and gain global visibility, with hundreds of original papers published in journals indexed in ISI (*Institute for Scientific Information*), the largest reference when it comes to publications and recognized by the international scientific community.

LIMs are designed to develop scientific researches, standardize new techniques and methods allowing its deployment to care for patients in other hospital units of the FMUSP / HC System. It promotes the formation of researchers in basic and applied research and serves as the field of education and training to students from schools of higher

education, whose curricula are related to health sciences. It also serves the field of development and training for health professionals and conducts courses in medicine and health.

Using data provided by the Ministry of Science and Technology, it can be seen that the scientific system of FMUSP / HC represents 7.27% of the Brazilian publication in health and biomedical sciences and 3.34% of Latin American publication in the same areas (Source MCT 2002, latest data available).



*Commemorative publication of 35 years of the LIMs*

It is being done today, a significant percentage of multicentre projects with other national and international universities and the pharmaceutical industry. The sources of funding, and budget resources, including FAPESP, CAPES, CNPq, FINEP, pharmaceutical industries and also agreements with other public and private entities.

## Rebouças Convention Centre

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2010 was a period of growth and recognition for the Rebouças Convention Centre - RCC. It hosted 334 events, 71% sponsored by the the Clínicas Hospital.

There have been investments in the modernization of the Grand Auditorium, which capacity holds 617 seats, and that gave it an even more modern and cozy environment.



*CCR Grand Auditorium*

A tool is available - Managing Business Opportunities in which you can record the history of all contacts and actions developed with future prospects. The Check-List module was also finished and it is responsible for storing on-line the detailed information about the events.

The recycling project of waste generated by events continued. There were more than 15 tons, an increase of 106% compared to 2009, the year the project started.

Besides the presence in the traditional Fair Exposystems, the Rebouças participated with a stand for the first time, at the Brazil Promotion Fair in 2010 - an event intended to exhibit products and services for events.

Some activities continued to work like "cinema with popcorn," Camerata" and "cultural lecture" to more than 750 employees from the FMUSP / HC System.

The second edition of the Olympics was held, sponsored by the FMUSP Clínicas Hospital, with the aim of encouraging the practice of sport and integration of employees. Over 700 employees were enrolled in the competitions, between individual and collective arrangements which resulted in 18 indoor soccer teams, 10 soccer teams, 12 volleyball teams, and more swimming, jogging, judo, karate, jump, among others.

In 2010, the Rebouças was blessed in the last year with the following awards:

- Decade Caio Award – Awarded as the Convention Centre of the decade - "Jacaré de Diamante".
- 2010 Caio Award – elected the Best Convention Centre of the country, in the small and medium size – "Jacaré de Ouro".

## 5 - FFM support to perform other Health Units

Added to the shares of FFM developed from the FMUSP / HCSysystem those targeted at enhancing other Specialized Hospitals and Health Centers.

### Sapopemba Local Hospital– HLS

The Sapopemba Local Hospital "Dr. David Capistrano Filho "- HLS, is located in Jardim Planalto, Southeastern of São Paulo and it has almost 1,900 m2 of built area, also providing low complexity outpatient and inpatient to the population of the districts of Jardim Planalto, Parque Santa Madalena, Vila Industrial Vila Renato and Jardim Angela from the district of Sapopemba that covers about one hundred thousand inhabitants.



*Front of Sapopemba Local Hospital*

It kept a connection with the State Hospital of Sapopemba – HESAP, only until 12/31/2008, since 2009, the administration was transferred to the HESAP SECONCI-SP (Social Work of the Civil Construction of São Paulo). Moreover, the HESAP maintains some connection to the HLS.

The hospital began its activities on 11.21.2005 and was officially opened on 12/18/2005. It currently has the Dermatology Ambulatory, Allergy, Cardiology, Endocrinology, Adult Neurology, Orthopedics, Pain Ambulatory, Pediatric Ambulatory, Emergency Care of the Medical Clinic and the performance of Dermatologic Surgery, Ultrasound and X-ray The inpatient unit serves adults of Medical Clinic and there are 30 active beds so far.

In the table below there are the activities of assistance developed by the Sapopemba Local Hospital in 2010.

Sapopemba Local Hospital Performance in 2010

<b>Activity</b>	<b>Quant.</b>
Emergency Care Consultation	1.520
Hospitalizations	768
Outpatient	18.858
Ambulatory Surgeries	593
External SADT – Radiology	2.952
External SAD - Ultrasonography	2.806

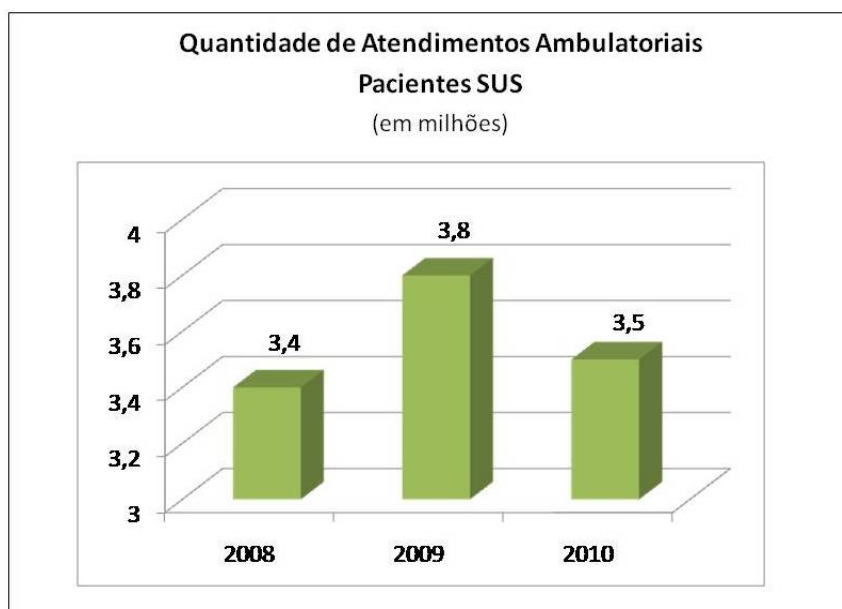
## 6 - The National Health System - SUS

Access and attendance of public patients throughout the hospital complex are guaranteed by the FFM through the allocation of financial resources in the Hospital System, thus enabling that the HCFMUSP reaches levels of SUS attendance

on a percentage higher than 94% as shown in the table below.

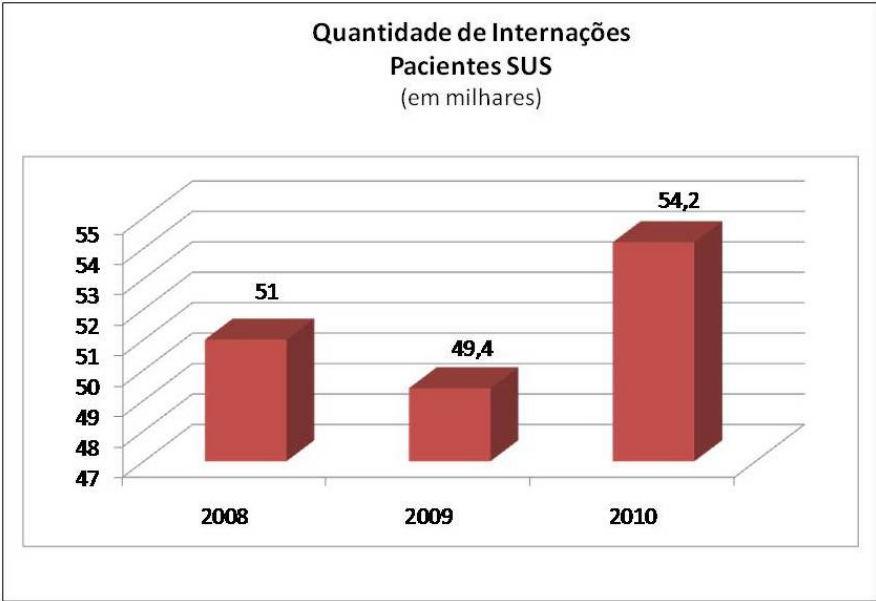
In 2010, the number of attendances is shown in the summary table and graphs below:

FMUSP/HC System Hospital Attendance Number- 2010		
Patients	Number of Patients - Ambulatory	Number of Patients - Hospitalization
SUS	3.497.893	54.245
Agreements	116.650	3.107
Total	3.614.543	57.352
SUS Representativeness	96,77%	94,58%



**SUS Outpatients Quantity (in million)**





**SUS Patient Hospitalizations (in thousands)**

## 7 - The HCFMUSP University Agreement and SUS

### The allocation of financial resources in support of the FMUSP/HC System

The agreement signed in 1988 between the Ministry of Health (SES), the FFM and HCFMUSP called University Agreement, allowed the FFM direct their efforts to promote comprehensive health care to users of the National Health System – SUS. Besides the development of programs and services for the improvement and expansion of operational capacity of the Clinicas Hospital, training and development of human resources in health and the

encouragement of teaching and research. Partnerships with public and private national and international institutes allow the FFM to develop various programs, especially in health and education, which benefit the population. The annual result of these revenues, for the period between 2004 to 2010, can be confirmed by the summary table below:

FFM Consolidated Results							
(In R\$ thousands)	2004	2005	2006	2007	2008	2009	2010
<b>INCOME</b>	<b>284.997</b>	<b>344.595</b>	<b>378.108</b>	<b>407.377</b>	<b>521.136</b>	<b>691.848</b>	<b>863.169</b>
SUS Medical Care	176.594	195.864	197.505	209.576	219.434	223.830	211.941
Private Medical Care	34.116	44.206	45.102	53.268	57.834	62.312	63.671
Subvention and contribution	29.065	49.159	78.052	92.948	178.640	313.072	496.602
Financial income (net income)	15.359	20.973	20.042	16.476	19.368	22.113	26.522
Technical Services	17.834	21.872	23.884	20.619	24.542	26.037	28.571
Other (courses, donation etc)	12.029	12.521	13.523	14.490	21.318	44.484	35.862
<b>EXPENDITURE</b>	<b>251.891</b>	<b>297.023</b>	<b>333.772</b>	<b>370.897</b>	<b>450.896</b>	<b>550.200</b>	<b>690.101</b>
Personal	161.693	183.297	200.587	217.001	258.031	303.463	381.372
Materials for consum	43.676	59.945	61.324	65.654	93.815	116.264	154.080
Professional services	33.991	42.721	56.037	54.394	71.200	88.603	98.765
Other (general, depreciation etc)	12.531	11.060	15.824	33.848	27.850	41.870	55.884
<b>RESULT</b>	<b>33.106</b>	<b>47.572</b>	<b>44.336</b>	<b>36.480</b>	<b>70.240</b>	<b>141.648</b>	<b>173.068</b>

When comparing the total FFM income, there was in 2010 an increase of 203% over 2004. Income from medical services performed by the National Health System (SUS) increased 20% during that period, mainly obtained through revaluations of fixed values set out in formal agreements that regulate the transfers.

It was noticed a percentage increase in SUS revenues, however, quite below the revenue with private healthcare (health plans, individuals, and similar), which increased 87% in the period. This is the result of joint efforts from the FMUSP, to extend their service, and the FFM, in order to improve flow, controlling and recovery. The FFM has completely reversed this trend of operational income, in order to benefit the operation and implementation of projects. The highlight in 2010 was, however, the increase in revenue from subventions and

contributions, which increased 59% over the previous year.

The FFM provides, along with the HCFMUSP, the access and care of SUS public patients throughout the hospital complex, allocating the financial resources of the system in the FMUSP / HC System itself, as shown in the table below.

Investments in infrastructure and equipment made by FFM in 2010 were approximately R\$ 136.4 million. R\$ 50.5 million were invested in the HCFMUSP, R\$ 7.1 million in FMUSP, R\$ 75 million in ICESP and R\$ 3.1 million in other agreements. The administration of FFM made investments of about R\$ 700,000, with emphasis on equipment and computer systems.

FFM Consolidated Results								
(In R\$ million)	2003	2004	2005	2006	2007	2008	2009	2010
<b>TOTAL</b>	<b>27,6</b>	<b>23,7</b>	<b>29,3</b>	<b>35,0</b>	<b>37,0</b>	<b>33,6</b>	<b>106,5</b>	<b>136,4</b>
Equipments	17,5	12,7	8,2	10,8	12,2	14,8	41,0	77,6
Buildings and Facilities	5,3	6,6	15,5	19,1	17,7	8,1	51,3	46,6
Technology	2,8	3,0	3,6	2,5	4,1	4,5	6,6	5,2
Other (furniture, vehicles, etc)	2,0	1,4	2,0	2,6	3,0	6,2	7,6	7,0

## Part 2:

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# FFM participation in supporting Social Care Projects

## Introduction

In order to fulfil its statutory role as a certified and recognized charity, the FFM develops several social programs for the poorest segment of the population, with no damage to the patient care of the National Health System - SUS. 2010 ended with 491 active projects, financed by public federal, state and municipal departments. Through private initiative (national and international), clinical trials, the project of restoration and modernization of the University of Medicine, whose first stage was completed in late 2008.

Major initiatives have been put together by the following operating areas, classified as follows: A) Treatment and AIDS Prevention and Sexually Transmitted Diseases; B) Care for Disabled; C) Care for Children and Adolescents, D) Family and Women Care; E) Health Policies; F) Research Projects, G) Clinical Studies and H) Institutional Projects.

### A) Treatment and AIDS Prevention and Sexually Transmitted Diseases

#### Prospective evaluation of the use of isoniazid prophylaxis in the prevention of pulmonary tuberculosis in HIV-infected patients

Despite several studies indicating the isoniazid (INH) as a prophylactic to reduce the incidence of Tuberculosis (TB) in HIV-infected population, this measure is not widely attended in all services of Brazil. Therefore, this study aims to evaluate the incidence of TB in individuals as well as its effectiveness is compared to a series of our service.

Assess the impact of the use of INH in patients with a PPD reactor (considering  $\geq 5$  mm) and the incidence of TB; c) determine the incidence of PPD in non-reactive PPD individuals; d) study the specific HIV-positive immune restoration in individuals cured of tuberculosis who have a presumed immune restoration by the use of antiretroviral therapy (TAR).

This project was funded by the Health Ministry in late 2010 (with the intervention of FFM) and it will be developed by the HCFMUSP LIM 56 – Medical Investigation Laboratory in Dermatology and Immunodeficiencies, and will have as objectives: a) Prevalence of reactivity to PPD in HIV patients b)

These data may indicate the relevance to the tuberculosis program and become a more effective policy to have INH, given that TB remains the most frequent disease in HIV-infected population in Brazil.

#### Antiretroviral Treatment of HIV / AIDS in Monitoring People in the Public Health Services in Brazil

The AIDS control requires the maintenance of adequate levels of patient adherence to antiretroviral treatment. The non-adherence to treatment threatens the clinical effectiveness of the treatment and may contribute to increase

transmission rates, as well as the spread of virus-resistance. Patient adherence to antiretroviral therapy (TARV) is crucial to the AIDS control programs worldwide.

This research was initiated in late 2009 and continued in 2010. It was developed by the FMUSP Department of Preventive Medicine, through a contract with UNESCO, with the intervention of FFM, it aims to analyze the prevalence of joining the treatment among people following up TARV in Brazil and estimate the risks of non-joining according to the characteristics of health services and of the people. It also aims to develop a measurement system that makes possible the monitoring of joining as well as helping to conduct operational research for all levels of the program.

This is an epidemiological study that will examine the national and regional prevalence of joining and factors associated with non-joining, including the organization's quality of healthcare. To this extent,

### Clinical and laboratory follow-up of patients undergoing therapy for HIV vaccine based on autologous dendritic cells primed with inactivated autologous virus

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This research was approved in late 2010 and will be developed by the HCFMUSP LIM 56 - Dermatology and Immunodeficiency Investigation Laboratory, through a Technical Cooperation Agreement signed with the UNODC - United Nations Office on Drugs and Crime, with the intervention of FFM .

Since the epidemic beginning, many products are candidates for anti-HIV vaccine and have been studied with the aim of inducing an immune response. In a therapeutic context, the use of vaccines based on dendritic cells has been shown to be a promising strategy, widely used in several diseases, being able to stimulate the immune system and allow the body to a more effective fight against the target of vaccination. Prototype vaccines with dendritic cells (DCs) were originally developed from observations that in neoplasia, such as metastatic melanoma and renal tumors, there was a dysfunction of DCs and a significant reduction of these. The idea that the same phenomenon could occur in HIV infection has boosted research in determining the number and function of DCs in patients with HIV / AIDS. Immunotherapy with dendritic cells primed with inactivated virus is in a

the study will also use the *Qualiaids* System evaluation of service quality in the analysis of services. One method of verifying joining that will be used is a pictorial analog electronic questionnaire, which will be installed in the offices of the sample and will allow the establishment of a computerized system for monitoring joining to all levels of the AIDS program in Brazil.

In summary, the aim of this study is: a) estimate the prevalence of joining rate according to characteristics of health services, b) to delineate the demographic, social, lifestyle and co-morbidities of people c) outline characteristics of major illness and treatment; d) develop and test a joining monitoring system in health services.

safe and successful procedure, in that the manipulation of the immune response to HIV control in chronically infected patients has shown good results.

Regarding specifically to HIV infection, in which the affected individual is unable to eradicate the virus, the immune system should remain "alert" constantly, thus controlling the infection. Despite the large number of studies, the lack of knowledge of the correlates of immune protection in HIV infection results in the absence so far of biomarkers that could predict clinical response. Thus, the search for HIV vaccine is a priority not only to the knowledge of the correlates of protection, but also to the dynamics of the establishment of immune memory against a prominent product.

The proposed project aims to study possible parameters of immunogenicity induced in a cohort of HIV-infected individuals undergoing vaccination with a product consisting of autologous dendritic cells pulsed with autologous inactivated HIV, correlating them with the data efficiency.

## Study of specific immune response and genetic aspects in patients infected with HIV-1 long term non progressors or slow progressors for AIDS

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Nonprogressors individuals for Long Time (*long term non progressors* - LTNP) or also called slow progressors (PL) remain free of progression to AIDS for many years and are about 1-3% of all HIV-infected individuals. These individuals remain asymptomatic and a number of CD4 + stable and above 500 cells./mm<sup>3</sup> of blood without any use of treatment with antiretrovirals (ARTs) for over 8-10 years. The factors that determine the non-progression or slow progression of these individuals are not fully understood and there have been little studied in our country. T lymphocyte responses against HIV have a key role in immune control of HIV and in the vaccination strategies, prophylactic or therapeutic.

This study, funded by the Health Ministry in late 2010, with the intervention of FFM will be developed by the HCFMUSP LIM 56 - Dermatology and Immunodeficiencies Investigation Laboratory intends to analyze HIV-1+ PL compared with typical

progressors and rapid ones to AIDS matched for period of evolution and matched by sex and age.

It will be held as: A) Detection of viral genetic markers associated with the phenotype of slow progression from AIDS infection, the polymorphisms in immune system components involved in viral infection as the deletion of 32 based pairs in the CCR5 gene. In addition to polymorphisms in the promoter region of CCR5 (CCR5-P-59029A / G) CCR2-V64I and SDF-1-3'A, B) Determination of HLA haplotypes that may be associated with the progression of the disease; C ) Verification of anti-HIV immune response *in vitro* by the determination of specific T lymphocytes against *pools* of peptides from gag, *nef* and RT with subtype B. A cohort of HIV-infected patients from various specialized services in attendance in the State of São Paulo will be formed, aiming to select 100 individuals with pre-defined criteria for slow progression.

## Study of the aggravating health problems from the use of antiretroviral drugs to people living with HIV / AIDS, attended in reference services in Brazil: from 2003 to 2008

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This research was initiated in late 2009 and continued in 2010 and is being developed by the FMUSP Department of Preventive Medicine through a contract with UNESCO with the intervention of the the FFM.

The project is constituted in the extension of a study examining the occurrence of severe toxicity in people living with HIV and AIDS related to the use of ARV drugs in the cities of Fortaleza, Porto Alegre, Rio de Janeiro, Salvador and São Paulo. Sites will be added in the north, notably Belém and Manaus, and the state of Minas Gerais. In total, 1,705 new patients will be added to the cohort.

Data will be collected, which includes people with adult HIV-1 and that started TARV in the study services, excluding pregnant women with exclusive use of medicines for the prevention of vertical transmission.

The study will contribute to the improvement of a rational use of antiretrovirals (ARV) policy, supporting the Ministry of Health in the development of the therapeutic consensus and guiding the decision of health professionals in prescribing a more effective and efficient treatment, with less degree of toxicity and appropriate to the profile of people with HIV in Brazil.

The importance of the study is done because in Brazil the occurrence of toxicity of ARV is little known, due to the limited number of studies and the absence of a structure of drug-surveillance. The studies on the toxicity of ARV drugs will also increase the knowledge about similar drugs produced by a domestic pharmaceutical industry, helping to establish consistent parameters for improving the technological development of the pharmaceutical policy in the country.

## Support for assessment of toxicities associated with use of antiretroviral therapy for HIV Health Services in São Paulo

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Through the agreement signed with PAHO - Pan American Health Organization, with the intervention of the FFM, this study, initiated in late 2009, was continued in 2010. Developed by the FMUSP Department of Preventive Medicine, it aims to support State and Municipal health services to systematize information from medical records of HIV patients, collecting data on the use of drug therapies and the occurrence of injuries due to toxicity, including the consequences for service health, such as the need for hospitalization, exchange of schemes and the existence of sequels.

Its specific aims are: 1) Select, hire and train teams of field researchers for systematization of information of people living with HIV and AIDS in

the Reference and Training Centre STD / AIDS from the State of São Paulo, Emilio Ribas Hospital, the USP University of Medicine CAids and clinics of the São Paulo AIDS Municipal Health Department; 2) Prepare banks and data records of HIV patients who started antiretroviral treatment in public health from the municipality of São Paulo in the period 2003 to 2008, 3) Organize information, approximately 2,750 patients in two references state services, which are the Centre for Reference and Training in STD and AIDS and the Institute of Infectious Diseases Emilio Ribas, a service of teaching and research at the University of Medicine, and in the twelve clinics in the municipal Health and 4) prepare descriptive reports on adverse events occurred in patients treated in the health services included in this level of work.

## Chemoprophylaxis for HIV Prevention in Men, Transvestites and Transsexual Women

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This study, initiated in 2008 continued in 2010. Developed by the HCFMUSP Immunology Laboratory through a contract with The J. David Gladstone Institutes, with the intervention of the FFM that seeks to assess the safety and efficacy of a combination of antiretroviral drugs, such as pre-exposure prophylaxis to prevent infection with HIV-1 in people with high vulnerability, using standard prevention interventions.

A total of 3,000 participants from six countries will participate in the study of eleven research centers. The HCFMUSP is the only centre in São Paulo and includes 200 of the 600 volunteers who participate in Brazil. All volunteers are healthy people (men, transvestites, transsexuals) with high vulnerability to HIV infection and counseled about safe sex and handing out free condoms.

In addition, volunteers are assigned in a random order, to receive once-daily study drug or placebo

for a period between 48 and 144 weeks. Every month, volunteers make testing for HIV clinical and regular laboratory examinations in order to verify the adverse events and concomitant sexually transmitted infections. The recruitment of volunteers is done in the community with direct interaction of the research team, advertisements in public places and registration via the Web at the FMUSP ([www.iprex.org.br](http://www.iprex.org.br)). The study results will be useful to offer an addition to current strategies for preventing HIV infection in vulnerable populations.

The main objectives of this trial are: 1 - Determine whether the FTC / TDF through daily oral is associated with rates of adverse events (AEs) comparable to placebo among not infected men with HIV-1 and who had sex with men (MSM), 2 - Determine whether the FTC / TDF through daily oral reduces the *soro*incidence of HIV-1 among HIV-uninfected MSM-1.

## "Development and Instrument Validation for Assessing Patient Joining to Antiretroviral Treatment in SUS" Project

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This research, initiated in 2008 continued in 2010. Developed by the FMUSP Department Preventive Medicine through a Technical Cooperation Agreement signed with the UNODC - United Nations Office on Drugs and Crime, with the intervention of the FFM, aims to develop and validate the applicability of instruments used to verify joining to operational research in the collective context and for the individual clinical use, as to contribute in monitoring and evaluating the joining by the health teams of the National PN STD / AIDS.

This is the methodology:

a) Development of questionnaires for joining verification based on literature and focus groups and interviews with patients and consultation with professionals of two referral services;

b) Analysis of validity and reliability of questionnaires developed by the electronic monitoring measurement as the gold standard in a sample of a patient referral service; c) Analysis of the applicability of validated questionnaires based on interviews and structured observations and semi-structured in different services of the SUS network.

The recruitment of patients to the electronic monitoring validity test was initiated on 8/19/2009. Three questionnaires were developed: an analog pictorial self completion questionnaire for web language and two questionnaires for individual use in the clinical setting by healthcare professionals. The questionnaires were directed in a reference service.

## "The context of vulnerability and human rights: conceptual boundaries and technologies for HIV / AIDS prevention " Project

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This project, initiated in 2008 and completed in 2010, was developed by the FMUSP Department of Infectious and Parasitic Diseases and the Institute of Psychology at USP through a contract with the Ford Foundation, with the intervention of the FFM.

Its main objective was to systematize the knowledge and critical thinking in the field of DST / AIDS and sexual health promotion in the last research and experience decade of action experiences in human rights and vulnerability having the psychosocial emancipation. In the process, in order to improve prevention technologies to produce and disseminate narratives about programmatic actions in this regard, contributing to the definition and evaluation of public policies in the prevention of STD and AIDS, as well

as promotion and protection of the prevention rights and sexual rights, especially the most vulnerable to HIV infection and people living with AIDS.

The results were obtained as follows: a) 4 workshops were performed b) Identification of inconsistencies, raising gaps and choices of "classic" texts ever published on the theoretical situation Vulnerability and Human Rights; c) Production of the 1st version of 43 texts d) Production of the 2nd version of 21 e) the formulation of educational goals, structure, curriculum, bibliography and detailed agenda for the 1st Specialization Course on HIV / AIDS Prevention in the context of Vulnerability and Human Rights Specialization Course on Prevention HIV / AIDS.

## "Deciphering the genetics and KIR function on Recent infection with HIV-1 by bioinformatics" Project

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This study was initiated in 2009 and continued in 2010. Developed by the HCFMUSP Immunology Laboratory through a contract with the University of California, with the intervention of FFM aims at a long-term development of new immunological methods for the prevention and control of HIV-1.

The intention is to map the genetic variants of the KIR (*killer Ig-like receptor*) and then compare them to disease markers and to the NK cells function in an adult cohort newly infected with the HIV-1. These receptors are potent and polymorphic regulators of the Natural Killer (NK) cells that bind to alleles of



HLA class I. Active before the responses of T cells, NK cells are an effector component of the fast innate immune response and may have a key role in combating HIV-1. Its functions are controlled by a group of regulatory molecules of surface among

which we highlight the polymorphic KIR. Our work aims to map the pathways by which NK cell responses can be modulated to generate a new mechanism protection against HIV-1.

## HIV-1 Protease CD4+T cell Epitopes and Drug-Induced Mutations

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This research, coordinated by the HCFMUSP Laboratory of Immunology, and approved and signed by the FFM and the NIH - National Institutes of Health, was initiated in 2007 and continued in 2010. The main objective of this project is to investigate whether neoepitopes from the protease of HIV-1 caused by mutations selected by protease inhibitors (PI) are targets of responses from CD4 + T cells and assess whether these responses affect the virological control in patients carrying the mutations selected by PI.

During the second year, the team was focused on experiments that are part of Goal 1 (HIV-1 protease sequencing and HLA typing of all 81 samples collected in the first year, and CFSE proliferation assay of 58 samples) as well as collect blood samples of patients for the longitudinal study (Goal 2).

It was also analyzed, the proliferative response of CD4 + and CD8 + T against HIV-1 peptides

protease by testing CFSE diluted in PBMC. To examine the profile of proliferative responses of peptides protease, we took into account only those patients whose sequence of endogenous proteases included a combination of 100% with the tested peptides. Only 17% of these patients recognized an identical peptide to its own endogenous protease sequence. Paradoxically, the most frequent pattern recognition (83%) was the PBMC, which recognized peptides dissimilar to sequences of endogenous proteases, failing to recognize identical endogenous peptides to endogenous sequence (nonspecific recognition). This indicated that the lack of recognition of endogenous sequences was not due to spurious variations in the not included sequence in the endogenous peptides, but the lack of real recognition of such a combination of endogenous peptides. In order to achieve Goal 2, 60 enrolled patients of the 81 infected patients with HIV-1 underwent therapy of protease inhibitors (PI) after one year of the first run of blood.

## Study on the immunomodulatory function of monocyte derived dendritic cells pulsed with autologous virus or HIV antigens

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This project, initiated in 2007 and continued in 2010, is coordinated by the HCFMUSP Dermatology and Immunodeficiencies Investigation Laboratory and passed through an agreement signed between UNESCO and the FFM.

This is a study that aims to establish a methodology capable of assessing the immune response to isolated antigens or inactivated HIV presented by dendritic cells, identifying the immune mechanisms related to anti-HIV protection. The evaluation of alternative methods of infection / transfection of dendritic cells with viral antigens may improve the therapeutic vaccine previously used (Lu *et al*, 2004),

representing an alternative strategy for individuals not especially responsive to the vaccine. Moreover, the study may help in the selection of candidates potentially responsive to the vaccine therapy, in view of the possibility of *in vitro* evaluation of the dendritic cells ability, pulsed with inactivated virus or viral antigens to stimulate a specific cellular immune response.

The results obtained during the years 2009 and 2010, regarding the testing to obtain alternative methodologies of DCs transfection, using samples from serodiscordant individuals, showed that lymphocytes from 10 out of 20 healthy HIV-exposed

individuals but uninfected (discordant pairs) proliferated and produced IFN forward to stimulation by HIV antigens. In relation to tests of viral isolation and culture of DCs from HIV-infected patients, the study included 20 patients of whom 15 were obtained isolated and 13 of viral stocks for testing, and relating to the transcriptome of monocyte

derived dendritic cells, tests were conducted with samples from nine patients and three healthy subjects in three separate cell culture: in an immature or basal state or transient post-pulse with chemically inactivated HIV-1 and in the mature or matured state with proinflammatory cytokine.

## A cryptic reading vaccine for prevention of HIV Infection – University of São Paulo

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This study was initiated in late 2009 and continued in 2010 and is being developed by the HCFMUSP Immunodeficiencies Laboratory through a contract signed with IAVI - International AIDS Vaccine Initiative with the intervention of the FFM.

The objective is to predict immunogenic epitopes of T cells in arrays of cryptic translation of HIV-1 and synthesize peptides for testing in immunogenicity assays.

## Tools for creation and analysis of indicators of clinical and molecular data of HIV patients for management and decision making of the PN-STD-AIDS

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The Department of STD, AIDS and Viral Hepatitis need bioinformatics tools to help analyzing its results. This project is funded by the Ministry of Health with the intervention of the FFM, and developed by HCFMUSP LIM 31 - Laboratory of Molecular Genetics and Hematology. It aims to: 1) technical capability to understand the computing environment and the source code of the systems: DBCollHIV, HIVdag and extraction and analysis of clinical and molecular data indicators; 2) domain and application of techniques for classification and analysis of clinical and molecular data, as well as the automated identification of associations between mutations and drug resistance; 3) development of the algorithm for identification of mutations taking as a starting point a sequence files

in FASTA format; 4) transactional systems for integration of a clinical and molecular reliable data and available on the Internet.

In other words, the goal is the development of computational tools for creation and analysis of clinical and molecular data indicators of patients for HIV management and decision making of the Department of STD, AIDS and Viral Hepatitis, as well as the Implementation of Genotyping Test to detect mutations that cause resistance to entry inhibitors - Enfuvirtide - in patients undergoing HAART, but without prior treatment with this class of drugs. This study was initiated in late 2010.

## Alcohol consumption and sexual risk behavior in HIV-infected people

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The general objectives of this research, funded by SENAD - National Anti-Drug Department, with the intervention of the FFM, and developed by GREA - HCFMUSP Group of Studies on Alcohol, Drugs of IPq are as follows:

1) Assess the relation between alcohol consumption and sexual risk behavior in HIV + in antiretroviral treatment.

2) Assess the impact of a behavioral intervention focusing on social skills training and problem solving in alcohol consumption in this population. The specific objectives are:

1) Assessing sexual behavior by the following criteria: use of condoms in sexual acts, number of partners, relationship status with sexual partners, sex for drugs, money, shelter and / or food, sex practices under influence of alcohol and / or other drug use and previous history of contamination by

other sexually transmitted diseases (STDs) like syphilis, gonorrhea, hepatitis B, among others;

2) Assess the frequency of alcohol, tobacco and other drugs in life, during the last year and within thirty days prior to the interview before and after the intervention;

3) Assess the repertoire of social skills (assertiveness) and solving problems before and after the intervention;

4) Assess symptoms of depression and anxiety before and after the intervention;

5) Develop behavioral intervention focusing on social skills training (assertiveness) and problem solving;

6) Assess the effectiveness of the intervention ( social skills training (assertiveness) and problem solving) in alcohol consumption, through the reapplication of the instruments, one, three and six months after its completion;

7) Check the change in sexual risk behavior after the intervention.

This initiative started in 2010.

### **Vif-specific response by CD8 in individuals that control HIV replication (Vif-specific CD8 Responses in Individuals That Control HIV replication)**

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This research was initiated by the HCFMUSP LIM 60 - Laboratory of Clinical Immunology and Allergy in 2010 in collaboration with the University of Bahia and the University of Wisconsin, Madison, United States with the intervention of the FFM.

The study aims to define the role of T CD8 + lymphocytes to control HIV infection. It is believed

that this project shows that the rare HIV-infected individuals who are able to control the multiplication of viruses have special immune responses mediated by T CD8 + lymphocytes and special types of HLA. Knowing these aspects in detail can help finding new ways to control HIV in infected people and help developing an effective vaccine.

### **The biology of HIC Transmission (“AMPLIAR 020 Protocol– Prospective Cohort Study of HIV Transmission Biology version 1.1 in 02.10.2008 sitio version)**

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This research started in 2010 by HCFMUSP LIM 60 - Laboratory of Clinical Immunology and Allergy funded by the University of California with the intervention of the FFM and its objective is to collect demographic information, behavioral and biological samples for the study of HIV to host immune response and immunogenetic factors and treatment related to HIV transmission to the viral balance point in infected individuals .

It is a prospective cohort study of infected individuals with acute and recent infection caused

by HIV and their partners to the understanding of the biological mechanisms of HIV transmission. The information generated by this research will be important for developing strategies of preventive vaccines regarding the characteristics of the viral presence before the development of the immune response which is a contribution to any decision on therapeutic intervention in recently infected patients with HIV . In addition, the program will evaluate low cost technologies that could contribute substantially to the management aspects of public health related to HIV / AIDS in Brazil and in the world.

## B) Attention to Disability

### “Deployment, implementation and accomplishment of the Lucy Montoro Rehabilitation Network” Project

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In late 2008 an agreement between the the HCFMUSP Institute of Physical Medicine and Rehabilitation and the State Bureau of the Rights of People with Disabilities in Sao Paulo with the intervention of the FFM and its objective is for the development of the Lucy Montoro Rehabilitation Network in the State of São Paulo. Its main objective is to deploy a network of Assistance and Rehabilitation within the SUS parameters to meet the needs of expansion and assistance decentralization and orthosis supply, mobility aids coupled with the promotion of technological development in area and ensuring the qualification of human resources for rehabilitation.

In this context, the first hospital of the Lucy Montoro Rehabilitation Network in Santo Amaro was opened, in September 2009. With 13.5 thousand square feet and a ten-storey hospital, it will be a comprehensive rehabilitation centre reference with complex medical procedures and technologies – there is nothing similar in Brazil. There are 80 single rooms in the

new unit and 20 offices and diagnostic wards of one thousand square meters. This structure will allow 12 thousand people per month in consultations, rehabilitation occupational therapy and cutting edge treatments.

The institute serves patients needing intensive and sequentially treatment and they are screened according to the clinical indication criterion. Cases coming from the countryside of Sao Paulo - the most so far with no possibility of adequate services in their cities and without opportunity for travelling and accommodation in large cities - will have priority for admission in individual apartments and will be with caregivers escorts often important on rehabilitation. The cases may be forwarded to the new Lucy Montoro Rehabilitation Institute of public health units of the capital and countryside of São Paulo, through the Regional Health Departments.

These activities were continued in 2010.

### “Hospitalization Unit of the HCFMUSP Physical Medicine Institute and Rehabilitation” Project

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Through an Addendum to the Agreement signed with the State Health with the intervention of the FFM, the HCFMUSP Institute of Physical Medicine and Rehabilitation - IMREA has an inpatient unit - UI-IMREA, which will act as a body attached to that Office, in Vila Mariana, sharing support services and administrative structures but with different arrangements and work toward its specific goals, since teams will be provided with its own therapeutic teams and nursing.

This inpatient unit will be the axis of Lucy Montoro Network, a network of units devoted to the rehabilitation of disabled people throughout the State of Sao Paulo, which represents a real possibility of care in rehabilitation of people with restrictions on attendance at outpatient centers of rehabilitation. It will also allow treatment and guidance in terms of rehabilitation, to those people living in distant regions of the state who do not have such resources at their place of residence.

Since the reversal of structural damage is not often possible, the rehabilitation of UI-IMREA should

pursue its activities in training and encouraging the development of functional independence in their patients. Another fundamental aspect of the performance will be the orientation of patients, families and caregivers about their current clinical status, treatment options and goals of rehabilitation during hospitalization, and the starting process of planning for life after the discharge. In addition, the UI-IMREA is focused on training of skilled manpower and the development of procedures that serve as parameters to other centers.

The works of the Institute of Rehabilitation of the Clínicas Hospital are scheduled for completion in 2011. With investments of R\$ 25 million, it should be treated 10,000 patients per month. The unit will have a sports court, therapeutic workshops, workshops for orthotics and prosthetics, special hydrotherapy pool, pulmonary function laboratory and analysis of movement, space for physical conditioning, rooms for physiotherapy and occupational therapy.

## Lucy Montoro Mobile Unit of Rehabilitation Network – Public Civil Actions

The HCFMUSP Institute of Physical Medicine and Rehabilitation - IMREA, recipient of some donations as a substitute for collective moral damage compensation, arising from civil lawsuits filed by public prosecutors of the Labour Ministry against some companies could raise at the end of 2008, together with the State Bureau of the Rights of the Disabled, with the intervention of the FFM, the Lucy Montoro Mobile Unit of Rehabilitation Network, which will visit the cities of the State to provide medical evaluations and orthosis, prosthesis, wheelchairs and bath and other resources for people with physical disabilities.

Only in Brazil, the vehicle is 15 meters long and 2.60 m wide and weighs 20 tons and has special

facilities for care, including a hydraulic lift to assist people in wheelchairs or stretchers and fully adapted bathrooms to the needs of people with disabilities. The mobile unit also features a waiting room, a doctor's test room, a tiny kitchen, an office, reversible stage and orthotics and prosthetics workshops, which are distributed in deprived areas.

The team that conducts the sessions is composed of two physiatrists, two orthosis and prosthesis technicians, a physiotherapist, an occupational therapist and a nurse, who may use the plaster, machinery and evidence rooms and the medical practice within the Unit. The table below shows the activities in 2010.

PERÍOD	VISITED PLACES	NUMBER OF PATIENTS TREATED
January	Avaré Sorocaba and Capão Bonito	17  196
February	Taubaté Piracicaba	19 102
March	Sorocaba and Capão Bonito Campinas	 132 147
April	Jaú	50
May	Avaré	8
June	Piracicaba Sorocaba	82 16
June-July	Campinas	46
July	São José do Rio Preto Peruibe	52 91
August	Jaú	24
September	Piracicaba	31
Sep-Oct	Campinas	15
October	São José do Rio Preto	18
November	Peruibe	32
<b>Total</b>		<b>1.078</b>

## ICESP Rehabilitation Centre – Public Civil Action

The HCFMUSP Institute of Physical Medicine and Rehabilitation - IMREA, beneficiary of donations that come from public civil action filed by the Labour Ministry against a company, held by way of substitution of collective moral damage repair, made possible in 2008, the facilities of the Centre for Rehabilitation of the Octavio Frias de Oliveira Cancer Institute – ICESP, opened on 09/22/2008.

The ICESP Department of Rehabilitation has directed its activities to assist people with disabilities, temporary or permanent, to optimize

their functional potential in the physical, psychological and social participation area. Rehabilitation focuses on stimulating the functional potential and independence, but also helps patients to adapt to their limitations in order to live in a fully and independently way as possible. There are physiatrists, physical therapists, speech therapists, neuropsychologists, occupational therapists, rehabilitation nurses and a physical educator.

The team performance permeates the entire institute and monitor its growth. It operates in

hospitalization units, which have a room dedicated to the inpatient rehabilitation, in the ambulatories and at the Rehabilitation Centre, dedicated to

outpatients. These activities were continued in 2010.

### São Paulo Rehabilitation Centre of the Military Police (CPMR)

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The CPMR was the result of talks held in 2004 between the Bureau of State Public Security, São Paulo Bureau of Health and the Fundação Faculdade de Medicina (FFM) in order to perform the services of Reference in Physical Medicine and Rehabilitation under the coordination of the HCFMUSP Institute of Physical Medicine and Rehabilitation.

This Centre has the capacity to serve 500 patients per day and provides a physical and mental rehabilitational medical care to the disabled (motor and senso-motor) that needs to receive care in different rehabilitation programs. The objective of this initiative was to develop the remaining potential of these patients, allowing them to a better functionality, through action or set of varied services. This action covers the north region of São Paulo, which occupies an area of 729.6 km<sup>2</sup> and a population around 2 million inhabitants, which represents 20% of the population of the municipality.



*Military Police Rehabilitation Centre in the city's north region*

The activities conducted in 2010, at the CRPM involved the continued implementation of assessment protocols and neurochemical blocking. Introduction of a care teamwork routine with standard models, the establishment of a single medical record, with medical information and multidisciplinary team information. Training and education of police officers, through courses and supervised training and development courses for family caregivers.

These activities were concluded in June 2010.

### Technologists in Care of People with Disabilities - Formative Course based on Interactive Tele-education

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This project, to be funded by the FAT - Foundation for Support of Technology, with the intervention of the FFM, started in late 2010, by the FMUSP Telemedicine Discipline and has the general objective of structuring course with multidisciplinary team approach based on Interactive Tele-education, in order to train professionals to care for people with disabilities, focusing on planning and promoting quality of life for people with disabilities.

Its specific objectives are detailed below: 1) A structured course with a thematic approach in administration / secretarial, behaviors and attitudes, rights of people with disabilities and accessibility, knowledge of nutrition, oral health and safety in the

home environment and general notions of health of people with disabilities 2) Development of organizational planning forms and forms of warning signs of injury / health 3) Creation of an Internet-based educational environment for the qualification of professionals with an environmental assessment 4) Creation of a Social Network for the participating students of the course 5) Development of educational modules based on multimedia (educational video and audio): a) EDVD elaboration with 8 sequential videos b) 15 educational reinforcement audio.

### Production Centre and Orthopedic Product Development and Auxiliary Mobility Means

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Through an Addendum to the University Agreement, the Production Centre and Orthopedic Product

Development and Auxiliary Mobility Means allowed the establishment of the Laboratory of

Bioengineering and Assistive Technology, which opened in December 2006.

Coordinated previously by the FMUSP Institute of Orthopedics, (IOT) from the end of 2008 it was transferred to the HCFMUSP Institute of Physical Medicine and Rehabilitation (IMREA), aiming to unify the activities that are already being developed in IMREA - Lapa Unit and to support the technological activities involving the dispensing of orthosis and prosthesis through the Workshop School of Prosthetics and Orthotics and provision of adaptations in wheelchairs through the Centre for Technology in Wheelchairs.

Its main goals are: 1) Integrate the Bioengineering Laboratory with the Workshop School of Prosthetics and Orthotics and the Centre for Technology in Wheelchairs, forming the Centre for Rehabilitation Technology 2) Technical support for the Workshop

School of Prosthetics and Orthotics , Centre for Technology in Wheelchairs, Ambulatory Postural Adjustment of Wheelchairs and technical support in using electrical stimulation in the services of Physiotherapy, Nursing, Occupational Therapy, Clinic of Small Disabled 3) Provide adjustments of seat and back in wheelchairs with CAD-CAM technology 4) Assembling a wheelchair simulator for modeling use of adaptations with CAD-CAM technology 5) Force platform assembling for alignment of prosthesis 6) Provide special assistance to walkers walking with support at the hip and armpit support 7) Cutting and bending devices development to reduce the costs of the seat and backrest repair of a wheelchair. These activities were continued in 2010.

### Technical-Educational Cooperation Agreement with the Paula Souza State Centre for Technology Education (CEETEPS)

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This agreement, signed with the CEETEPS (autarchy of the State Government of São Paulo) with the intervention of the FFM is coordinated by the Department of Forensic Medicine, Medical Ethics and FMUSP Social and Occupational Medicine. Its main objective is to develop educational and technical cooperation aiming the establishment and full functioning of the professional qualification of

orthotics and prosthetics and intermediate health area qualification. In the multiprofessional, theoretical and practical course modality, the content enables students to produce assistive technology equipment (wheelchairs, orthotics and prosthetics, canes, corsets and others). The course is coordinated by the IMREA and developed by its staff. These activities were continued in 2010.

### Worker Management Basic Project of prevention, diagnosis and intervention in the process of schooling of students with special educational needs through the Centre for Specialized Educational Support - CAPE

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The CAPE - Centre for Specialized Educational Support - was created by the State Bureau of Education in 2001 to support school inclusion of students with special educational needs in State Schools. The centre operates in the management, monitoring, and support of the actions of regional special education, in the process of continuing education, in the provision of resources and the articulation of the schools with the community, carrying out guidance and referrals.

This project, supported by the FFM, has undertaken to continue activities in CAPE, in order to ensure a quality of education in public schools statewide, according to the principle of inclusion in school, integrating the education of students with special

educational needs in the teaching school project. Expert teachers and teachers from regular classes for elementary and high school of 89 Directorates of Education in São Paulo, which involves supervisors, technical assistants and 1,422 specialized teachers are the target audience.

The project includes disabled students, parents and community members in general (630 people per year) with the annual material provision for 350 public schools statewide. Its main objectives are:: a) provide support to state schools for the development of the educational process of students with special educational needs with emphasis on supporting the specialized teachers and the ones from regular classes, facilitating their teaching

through a centralized and a decentralized service; b) provide conditions under forum guidance, training and other allowances for these pupils from entering and remaining in public schools by ensuring quality and success until the conclusion of the teaching and learning process. c) contribute to the continuing education of teachers regarding teaching and

pedagogical demands of students with special educational needs and d) provide teaching support subsidizing and developing actions to promote participation and explain to educators and to the school community in general for including and schooling success of students with special needs. These activities were continued in 2010.



## C) Children and Adolescent Care

### “Implementation of a library for children and teenagers on the ITACI Day Hospital” Project

This project was funded by a grant from the Alzira Denise Hertzog da Silva Benevolent Association - ABADHS to the Child Institute of the FMUSP Clinicas Hospital - ICr with the intervention of the FFM in late 2010. The project aims to implement a juvenile library at the Day Hospital which is a unit of ITAC I- Institute of Child Cancer Treatment. There will have children's books, bookshelves in carts, carpets, cushions, tables and various chairs from different heights. The project will serve children in pre-literacy age (0-6 years) and children and adolescents at school age (6-18 years).

The reading of stories will take place interactively with the children and teenagers where they can invent and imagine their own story. Four facilitators will be hired and trained to tell stories and will be able to answer the questions of children and adolescents about their illness without compromising their emotional structure.

The aiming of the project is to organize a collection of 500 books for children that excites the mediators and the juvenile public. The books will be in a

familiar environment for everyone. These books are carefully selected for each level of development of children and adolescents.

The proposal specifically aims to contribute to the quality of care for hospitalized children and transform the hospital environment for a better acceptance and cooperation of the child and adolescent to the procedures and to their own hospitalization. Moreover, the general goals are: 1) Reduce the tension and emotional complications from the proceedings of hospitalization and hospital treatment 2) Provide an improved quality of life for children and adolescents undergoing cancer treatment 3) Promote the rebuilding of a playful space for children and adolescents in hospitalization 4) Enlarge spaces where reading is offered to people with less access and less possibility of acquisition of books 5) Improve the image of hospitalization as a whole and 6) Facilitate the hospital environment integration.

### “Caminho de Volta: the Search of Missing Children in São Paulo”, a project supported by Criança Esperança” Project

In addition to the agreement signed in 2007 between the FFM and the Bureau of Public Security of the State of São Paulo which enabled its extension through the resources of CONDECA - State Council on the Rights of the Child and Adolescent of the State of São Paulo, the project **Caminho de Volta**, coordinated by the Department of Forensic Medicine, Medical Ethics and FMUSP Social and Occupational Medicine, received support from Criança Esperança through a contract signed in late 2008 between UNESCO and the FFM. Its main purpose is to assist in the elucidation of cases of missing children and adolescents in São Paulo using methodologies that involve the area of psychology and psychoanalysis, Molecular Biology, Genetics and Bioinformatics.

This is the methodology to be followed: 1) Identify the main reasons that propitiated the missing of children and adolescents 2) Compare the efficiency of the proposed methodology, based on the provided attendance 3) Arrange a methodology of a clinical

care for cases of missing children and adolescents 4) Cross the information generated during attendance with the Caminho de Volta database 5) Store and analyze the genetic profiles of the biological material from relatives.



Within the Action of Criança Esperança (02/2009 to 02/2010), 187 families, 44 adolescents 12 children and nine people responsible for shelters in the city of São Paulo were interviewed by psychologists from the Caminho de Volta Project at the Second Precinct of Missing Persons Department of

Homicides and Protection of People (DHPP) and the Centre of Forensic Sciences (CenciFor) located at the University of Medicine at the University of São Paulo. It was found that getaway was the main type of disappearance. Mainly associated with domestic violence, physical abuse, sexual abuse, conjugal violence and negligence are the recurring problems of many families interviewed. It was collected biological samples Of all the families for DNA profile analysis (reference bank). It was also included in the DNA bank, biological samples of children and adolescents referred by judges from the Court of Children and Youth. Posters were made from photos of missing people which were submitted by their relatives when interviewed by psychologists from Caminho de Volta. It was developed an Image Bank (photos) that is available on the internet.

After four psychological interviews conducted in the Police Station and the supervision of these cases, whether there was a nominee or spontaneous demand, the cases that would be referred to the hospitalization proposal. A total of 141 individuals,

including parents or guardians as well as missing when found, which was given an opportunity to attend an individual psychological care in 12 sessions in a room at the CenciFor. During the clinical process, it was verified the occurrence of missings in childhood and adolescence in earlier generations, that is, by parents or guardians. The reporting of conflicts between parents and children seemed to be the most emphasized reason when compared with domestic violence itself. The complaints reported by children and adolescents involved feelings of worthlessness by their parents, difficulties in communication with them, and feelings of incomprehension on their desires and actions. It was possible the arrangement of a methodology of a clinical care for cases of missing children and adolescents. However, the multiplication of this arrangement may need a reflection on circumstantial, methodological and psychological factors that may have limited a greater joining of the individuals previously indicated since only 28 individuals began the treatment.

## Institute of Child Cancer Treatment

In 2010 the FFM, in partnership with the State Bureau of Health and HCFMUSP through an Amendment to the University Agreement supported the activities of ITACI - Institute of Child Cancer Treatment

And the HCFMUSP Child Institute - ICr. The ITACI began in 12/17/2002 with the activation of 12 doctor offices and two rooms for procedures at the ambulatory and 12 hospital beds per day for chemotherapy. On 6/16/2003 started the service in the area of hospitalization, opening 6 of 17 beds installed. The teaching, research and care activities are developed for children and adolescents between 0 and 19 years, who suffer from onco-hematological diseases and that came from SUS or private health insurance system. Today, ITACI works to its full capacity of 3,200 beds and serves patients suffering from onco-hematological diseases. There are about 1,100 consultations, 550 chemotherapies and 1,000 attendances from the multidisciplinary team, every month. There is an emergency room, a rest room, 10 doctor offices, 2

non-medical clinics, 4 rooms and 8 beds of rest and observation, a minor surgery room, a nursing room, a remedial room, a surgery room, a recovery room and 19 operational beds.



*ITACI - Institute of Child Cancer Treatment*

In 2010, there were: 56,261 medical consultations (attendances SUS + Agreements); 2,816 surgical procedures (SUS + Agreements), 7,274 hospitalizations (SUS + Agreements) 28 bone marrow transplants, 30 liver Transplants , 8 kidney transplants, and 4,406 chemotherapies.

## Children Sexual Exploitation and Missing of Children and Adolescents

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This project, coordinated by the Department of Forensic Medicine, Medical Ethics and FMUSP Social and Occupational Medicine, was approved by a convention signed in 2007 between the FFM and the Special Bureau for Human Rights of the Presidency.

The initiative aims to establish the relationship between sexual exploitation and missing children and adolescents in São Paulo. The high number of disappearances of children and adolescents in Brazil together with the existence and complexity of sexual exploitation of children and adolescents justified the need to identify and go deep the possible relationship between these issues since there are no national studies that establish this possible linking.

The research focused on analysis of the region of Santos, located on the southern coast of São Paulo, particularly the cities of Santos, São Vicente and Guarujá. Two databases were worked:

- a) The official data of missing people supplied by the Judicial-Interior Police Department - DEINTER 6 (Santos) by means of the Bulletins

of Events (BO) analysis registered between 1995 and 2008.

- b) Data from the non-governmental organization Camará Centre of Research and Support to Children and Adolescents – Camará is located in São Vicente. The collected data included the 1997 period, year of foundation of that institution until 2008.

The field research has been conducted, the data was collected, analyzed and presented in the First International Day of Disappearance and Sexual Exploitation of Children and III Caminho de Volta Seminary ", held in São Paulo on 6 and 7 October 2009.

In 2010, the year of completion of the project, the team tallied the collected data to be published in an international journal in the field of social sciences.

## Preventive Measures in Schools Project– Family School Program

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Project APE - "Preventive Measures in Schools ", developed since 2004 by the Family School Program of the Bureau of Education of São Paulo, has a proposal to support the implementation of a preventive practice for protecting individual and collective health, in the communities of the state schools, assisting teachers in implementing, monitoring and educational policies implementation for health promotion and disease prevention, in a practical, instructional and continuous way.

The Family School Program provides the opening of 2,335 state schools, on weekends, with the goal of creating a culture of peace, the awakening of potential and expand the cultural horizons of its participants in accordance with four guiding principles: Sports, Culture, Health and Labour. In 2010, there was the participation of nearly 5,000 educational professionals, 17,000 students and 15,000 volunteers.

Project APE was expanded in 2010 to the 91 Directorates of Education in the State with the aim of promoting strategic and directed actions in the

units based on a precise diagnosis and the definition of priority themes, seeking the understanding of the importance of self care through practical actions (the community effectively participate and build skills). Besides, it was also developed systematic technical guidelines to the teachers of the program, aimed at strengthening existing projects and assisting in the implementation of new projects according to local needs.

There have been developed activities related to various topics such as hypertension, diabetes, cholesterol, oral health, dengue, sustainability, healthy eating, physical activity, preventive drugs, STD / AIDS, unplanned pregnancy in adolescence, elderly health, among others.

Over 3,000 professional educators were trained and academics of the Program and activities carried out directly with the community resulted in more than 650,000 participations. In 2010, the Family School Program featured a 39% increase in the number of activities offered to the community related to the Axis of Health this year.

## Children and adolescents in street situation at São Paulo city centre: the mental health of this population and the effectiveness of multidisciplinary intervention in the process of a sociofamily reinsertion Coordination – Project Balance

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This project, originated from an agreement signed in 2007 between the FFM and the City Hall of São Paulo, through the Municipal Bureau of Health, is coordinated by the Institute of Psychiatry of the FMUSP Clínicas Hospital - IPq. Its main objective is to work the child's approach with her family and make their social and family reintegration in a supervised environment with expert guidance.

The program offers sports, cultural activities (theater and communication workshop), teaching, tutoring, and psychological treatment, psychotherapy, speech therapy, physical therapy, pediatric, psychiatric and counseling or family therapy, developed in a space devoted to promoting health away from hospitals and different from CRECAs and shelters. In parallel, it develops and measures the effectiveness of a multidisciplinary intervention, mainly on the overall treatment of children and their families, for their social and family reintegration. The initial intervention proposal was structured to evaluate up to 440 children / adolescents in 12 months. After three years of operation, the effectiveness of this intervention has been clinically proven and measured through scientific assessments, published in the leading journal in the field: *Child Abuse & Neglect*. From this finding, the Project Balance was incorporated as a model of service for professionals in training, getting the FMUSP undergraduates for training and residents of the Child and Adolescent Psychiatry of Ipq.

The Program Balance ended 2010 with 399 patients enrolled and 49 medical discharges (the total attendance of 448 children / adolescents in three years), where: a) it was held 13,179 multidisciplinary attendances with an average of 33 attendances per patient; b) average of one new case per week, c) the area of family care held in 1,100 psychological attendances and 168 psychiatric attendances for family members.

All children / adolescents have undergone through medical and psychiatric evaluation, and 88.89% had sufficient symptoms to receive at least one psychiatric diagnosis: 40.4% of drug abuse, 35.3% of affective disorders, 16, 2% of TDAH and 8.8% of anxiety disorders. In this population, the occurrence of abuse, both physical and sexual, is frequent, as well as abuse and negligence.

Virtually all were neglected by their parents, 58.4% had suffered physical or sexual abuse while 13.1% were victims of both.

So far, the rate of family reintegration is 32.53% (146 children / adolescents returned to their families or adoptive). It is considered TREATMENT SUCCESS, 98 cases (67.4%) (living with family, without drug abuse, family relationship and socio-economic stable conditions).

Moreover, the Balance works with the technical staff of the Reference Centers for Children and Adolescents (CRECA), the Courts of Childhood and Youth Protection Council, Agents of Social Protection Service Centre of Permanent Emergency (CAPE) connected to SMADS. In 2008, the Balance was part of the training of over 120 Community Health Agents and Agents of Social Protection, in addition to being monthly paid to discuss cases and guidelines of more than 60 professionals who work in city shelters.

As this is an innovative initiative, it was necessary to know the characteristics and needs of this population, in order to develop the most appropriate interventions. From this knowledge, new interventions have been developed and their effectiveness is continually evaluated through research. The ongoing analysis of results allows the readjustment of therapeutic interventions and activities offered. Thus, the therapeutic activities offered are changing to better meet the needs of users. Until August 2010, there are seven research projects in progress and 3 in development. 5 research scholarships were given by the FFM, a Master's Scholarship by CAPES and a scientific scholarship by CNPq. The scientific production was: 14 papers were presented in Congress, 15 lectures were delivered in scientific meetings, 3 articles were published, two papers were submitted and the program was presented in three chapters of books.

## National Reference Centre for Child Health

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With the agreement signed in 2001 with the Bureau of Health, the FFM, through an Amendment to the University Agreement, it has been supported the actions of the National Reference Centre for Child Health. Located in the HCFMUSP Child Institute, it was continued in 2010. The Centre integrates teaching, research and health care of children with an integral conception of health and aims to implement strategies for promotion, protection, prevention, intervention proposing actions and training of human resources in the children and adolescent health.

The activities conducted by the Centre in 2010 with support from CLM, were focused on:

- 1) Reform, adjustment and maintenance of physical areas of the Butantã health district. Equipment acquisition and maintenance. Development and training of health professionals.;
- 2) International Seminar entitled "Developmental Origins of Health and Disease," held on 25 and 26 November 2010;
- 3) Final process of preparing a book / manual of guidance for installation and deployment of toy libraries in children's hospitals;
- 4) Realization of weekly supervision to the teams of the Butantã Family Health District, performed by two pediatricians;
- 5) Entering data and database evaluation elaboration and implementation of the infant deaths investigation in the south and southeastern regions of Brazil;
- 6) Completion of eight workshops for state reporting and conclusions of the first study to managers and technicians from the state and municipal

departments of health, support and work qualification of the municipal committees;

7) Preparation of the assessment tool of research titled "Lifestyles of the family as a determinant of child health". pre-test in a pilot study with a sample of 30 families for one month: Analysis of the results of the pilot program in a particular program. Re-elaboration of the questionnaire items and pre-testing with other mothers, different from the first pilot. Selection of sample to be searched and the training of field researchers. Implementation of the sample instrument of 200 families;

8) Finalization of the "Study of evaluation of the Rotavirus vaccine Phase 1 - safety, tolerability and immunogenicity evaluation" where the vaccine has proved to be safe, well tolerated and immunogenic in this population;

9) The beginning of the study entitled "Evaluation of Safety and immunogenicity of a tetravalent candidate vaccine against dengue, which is being prepared in two presentations: a liquid formulation and a lyophilized formulation;

10) Finalization of the study entitled "Safety Assessment of tolerability and immunogenicity of candidate vaccines against pandemic influenza A (H1N1) plus adjuvant," whose results allowed the identification of candidate vaccines that may be produced by Butantã Institute;

11) Finalization of the study entitled "Evaluation of Safety and immunogenicity of the vaccine against pandemic influenza A (H1N1) without adjuvant, produced by Sanofi Pasteur Institute in immunosuppressed patients.

## Project "1<sup>st</sup> National Survey on the use of alcohol, tobacco and other drugs among college students from 27 state capitals"

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Drug use is a worldwide phenomenon that has transcended the category of "health problem". In Brazil, alcohol is the most commonly consumed drug and almost 12 million Brazilians have made use of at least one illicit drug.

Faced with the need to better understand the topic from Brazilian college students, since August 2008, the program of the Interdisciplinary Group of Studies on Alcohol and Drugs (GREA) of

HCFMUSP Psychiatry Institute, through an Agreement signed with SENAD - the National Bureau for Policies on Drugs - Institutional Security Cabinet of the Presidency, with the intervention of FFM - has developed this project.

The field work began in May 2009 and was completed in mid-December of that year. A stratified and a probabilistic sample of students enrolled in university graduate programs of Higher Education Institutions (IES) from the public and private schools

from 27 Brazilian cities, recruited by clusters of unequal sizes. The five administrative regions and the type of administrative organization of IES (public or private) were defined as the sampling strata. Across the country, 114 public IES were randomly selected, at least two public IES and two private IES for capital, maintaining a minimum number of IES to calculate estimates of variability. The number of classes chosen was proportional to the number of students in units of IES in the capital, totaling in the country, the allotment of 929 classes of students. In total, 100 (88%) of 114 randomly selected agreed to participate in the IES study, as well as 654 (70.6%) from 929 classes chosen, considering the total participation of 12,711 students. Of this interviews, 6,206/12,711 (48.8%) were conducted with 51 public HEIs and 6,505/12,711 (51.2%) with university students from 49 IES private institutions. Considering the number of students interviewed at the University of São Paulo - USP, one of the eight sub-projects of research, this study had the participation of over 151 classes and over 4,841 students interviewed, totaling in the country, the participation of nearly more than 800 classes of students and almost 18,000 students.

In the national survey the college students were asked to respond voluntarily to a structured questionnaire of 98 closed questions, of selffulfillment, personal and anonymous, and was planned with the aim of understanding the profile and lifestyle of the Brazilian college student with emphasis about drug use, risky behaviors and psychiatric co-morbidities (e.g. depressive symptoms, psychotic and nonspecific psychological distress). As drogas investigadas foram: álcool; tabaco, maconha, cloridrato de cocaína, merla, crack, anfetaminas, anticolinérgicos, tranquilizantes, analgésicos opióides, barbitúricos, esteróides andrógenos anabolizantes, inalantes, alucinógenos,

anticolinérgicos, ecstasy, xaropes à base de codeína, cetamina e heroína. The identification of the drug use has been made through measures of lifetime use (experimental, that is, "at least once in a lifetime"), in the last twelve months (in the year, that is, "at least once in twelve months preceding the interview) and in the last thirty days (in the month, that is, "at least once during the 30 days preceding the interview). The drugs studied were alcohol, tobacco, marijuana, cocaine hydrochloride, merla, crack, amphetamines, anticholinergics, tranquilizers, barbiturates, androgens anabolic steroids, inhalants, hallucinogens, anticholinergics, ecstasy, codeine-based syrups, ketamine and heroin.

In the nationwide survey, the majority of the sample was comprised by: women (55.0%) young people between the ages of 18 and 24 (67.5%). unmarried (80.6%). whites (55.5 %). socioeconomic class A and B (72.0%). Roman Catholics (53.0%) evening courses (36.8%) and the area of the Exact Sciences (47.2%). Nearly 87% of students (86.2%) reported having at least tried alcohol (lifetime use) and almost 46.7% tried smoking. Regarding the use of illicit substances, nearly half of the students (48.4%) reported ever having made such use of it in life, a little over one third (34.3%) over the past 12 months and nearly one quarter (24.6%) over the past 30 days. When analyzed individually, marijuana, amphetamines, tranquilizers, inhalants and hallucinogens were the five most frequent substances used among college students, in that order, for all measures evaluated.

The main research findings were described in detail in the report which was released and posted on a closing seminar held in Brasília on June 23, 2010. This report has been translated into English and Spanish, and they will also be distributed soon.

## Protocol for the Treatment of Patients with Cleft Palate

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The Protocol of Craniofacial Surgery for the Treatment of Patients with cleft palate, developed by the HCFMUSP Division of Plastic Surgery and Burns was funded by a grant from the Smile Train, via FFM, which occurred in late 2008.

This partnership has allowed a rise of medical graduation in this type of surgery, beyond the improvement of surgical skills and extensive experience in treating patients with cleft. During

2010, the situation for completely free care was as follows:

### Smile Train Project Attendance - 2010

Procedure	Quantity
Palatoplasty	29
Unilateral cleft lip repair	22
Bilateral cleft lip repair	7
Alveolar Bone Graft	16
Pharyngoplasty	1
Lip and Nose Review	17
Correction Fistula	6
Total of procedures	98
Total of patients	87

### Capacity Building Project in Mental Health: Fundação Casa Professionals – Capital Module

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Through the agreement signed with the Fundação Casa, with the intervention of the FFM, this study, approved in late 2009, being developed by NUFOR - FMUSP Centre of the Forensic Psychiatry Institute, aims to implement the program of outpatient care in the specialties of psychiatry and General Practice to inmates in a socio-educational, and training of psychologists and social workers of the crowded Fundação Casa in Sao Paulo.

Its goals are: a) work in primary, secondary and tertiary prevention in the field of psychiatry through education and assistance activities in mental health; b) attend as an outpatient, the young inmates of the

Fundação Casa; c) develop individual medical records; d) prescribe medications and periodic re-evaluation of youth subjected to such intervention; e) refer to psychotherapy when appropriate; f) support technical staff of the Fundação Casa (psychologists, social workers, nurses and nursing assistants) in the conduct of cases under psychiatric care; g) produce medical documents (statements), when requested by the judiciary; and h) perform initial psychiatric assessment of young offenders entering into a socio-educational measure with a medical report evaluation to the technical team and the judiciary.

## D) Women and Family Care

### Multivisceral and Intestinal Transplantation Program

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This project was approved in late 2010 and will be developed by the HCFMUSP Transplant Service of the Digestive System through an agreement signed with the Ministry of Health, with the intervention of the FFM. 10 intestinal and multivisceral transplantations are planned in this project and it will be conducted at a frequency of one every 36 days.

The Intestinal Failure (IF) is a condition where the gastrointestinal tract is unable to maintain adequate nutrition, fluid and electrolyte balance, growth and development. The use of home NPT is expensive (US\$ 150,000 per year, not counting the cost of hospitalization) and causes severe complications such as cirrhosis and complications of venous access (infections, thrombosis and catheter loss) and psychological disorders. The continued use of NPT worsens quality of life, leading to frequent hospitalizations and mortality of 5% to 25% per year. In complicated and pediatric patients the mortality reaches more than 60% per year. For these reasons, intestinal transplantation (IT) has been recommended to treat patients with irreversible IF isolation or as a multivisceral transplant, in which the intestine is transplanted with other organs (liver, stomach, duodenum and pancreas) to handle the failure of multiple organs of the digestive tract.

The overall survival of total intestinal transplants performed worldwide is 73% in one year, 59% in three years and 50% in five years. This index is similar to the survival of patients undergoing permanent NPT performed in international centers. However, it is noted the high mortality of patients at home NPT and in patients with TI there were significant improvements in quality of life.

200 people a year are estimated to have indications for these transplants in our country. However, there is no active program of these transplants in Brazil, which limits the treatment. Some patients can legally obtain the right to perform these transplants abroad. This burdens the public service and hampers the development of these transplants in Brazil.

In the past, six intestinal transplants were performed in Brazil. The Clínicas Hospital of the FMUSP University of Medicine pioneered the TI. Transplants were conducted by Professor Okumura in the 60's. Three other institutions have carried out more recently, four intestinal transplantations but the results were disappointing, with early death of all recipients. It is suggested that this project with a better structure and continued planning of this procedure will be able to achieve consistent results with the centers that have performed this procedure as a routine in other countries.

### Project "Expanding Access to Preventive and Malaria Control for Vulnerable Populations in the Brazilian Amazon"

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Through an agreement signed in late 2009 with the Global Fund, with the intervention of the FFM, the FMUSP Department of Pathology is coordinating the project "Expanding Access to Preventive and Malaria Control for Vulnerable Populations in the Brazilian Amazon ". In partnership with the Foundation for Tropical Medicine - FTM, whose objective is to strengthen the capacity of local health services in order to understand the dynamics of the disease transmission and thus guide more efficiently the project's programmatic interventions and regular program actions of malaria control.

The goal is to reduce by 50% the number of malaria cases in the five years of the project in 47 municipalities in the Amazon region, responsible for transmitting 70% of malaria in Brazil in 2007.

The project aims to collaborate in reducing the mortality morbidity in the Amazon region that concentrates 99% of malaria transmission in Brazil, through two recognized impact of interventions:



1) Ensure appropriate treatment with highly effective drugs through a fast diagnosis, strengthening the network of diagnosis and improvements in drug management, and

2) Rapidly achieve high coverage of prevention with insecticide-impregnated nets with a long-term timespan.

## Project "Health Assessment Program in Settlements"

Through an agreement signed in mid-2008, INCRA - National Institute of Agrarian Reform, with the intervention of the FFM, the FMUSP Department of Pathology through the "Bandeira Científica" team, involving the areas of Medicine, Physiotherapy and Engineering, is developing the project "Health Assessment Program in Settlements", whose objective is to assess the health characteristics of the population living in settlements of agrarian reform and correlate these aspects with the social, epidemiological and economic characteristics as

well as based on these characteristics, promote continuing actions for health promotion. In 2010, there was no transfer of resources because of lack of funds, which is why the visits were suspended. It is expected that in 2011, the project can be continued.

These are the results so far:

DESCRIPTION	TOTAL UNTIL 2009
Participants - Academics	115
Participants - Professionals	54
Served People	3.250
<b>Activities</b>	
Total Number of Attendances	4.352
Total Number of Exams	1.403
Total of Activities	5.635
<b>Attendances</b>	
General Medical Attendance	2.560
Gynecology	162
Pediatrics	1.428
Physiotherapy	312
Total of Attendances	4.352
<b>Exams</b>	
Fingertip Glycemia	1.325
Cytological exams	78
Total of Exams	1.403
Lectures/Workshops	175
Interviews	86
Meetings with Managers/Field Professionals	34
Material Collections	9

## Project "Bandeira Científica 2010"

The Bandeira Científica is an academic university extension project, which involves students from multiple units of the University of São Paulo. The group holds an annual expedition to needy communities in health care with particular situations or health care, developing social activities of teaching, research and assistance for cities in the country with shortages in health care.



FMUSP students in the first edition of Bandeira Científica in 1958

In the period from 11 to 22 December 2010, with support from Sanofi-Aventis Pharmaceutical Inc., FFM and the intervention of the expedition of the "Bandeira Científica 2010", coordinated by the

FMUSP Department of Pathology, served in the city of Inhambupe, State of Bahia, 170 km from Salvador. In this expedition, the following results were obtained:

DESCRIPTION	TOTAL 2010
Participants - Academics	175
Participants - Professionals	58
Participating Universities	03
Served People –assistance activities	4.304
Served People – total of project	5.168
<b>Activities</b>	
Total Number of Attendances	7.820
Total Number of Exams	1.986
Total of Activities	9.806
<b>Attendances</b>	
Medical Attendance	5.152
Physiotherapy	532
Nutrition	546
Psychology	86
Odontology	1.420
Speech Therapy	84
Total of Attendances	7.920
<b>Exams</b>	
Fingertip Glycemia	1.091
Blood Sample	632
Cytological exams	197
Anatomo pathological exams	11
Eletrocardiograms	55
Total of Exams	1.986
Lectures/Workshops	43
Interviews	34
Meetings with managers/Field Professionals	13
Glasses	702
Material Collections	8

## Family Health Program – PSF

Created by the Ministry of Health in 1994, the Family Health Program - PSF, is currently responsible for the health care of 86.7 million people - its main objective is to improve the health of the population, through the construction of a welfare model of care based on prevention, promotion, protection, early diagnosis, treatment and recovery of health care provided in the family health units or at home. Its actions are being developed in several Brazilian states, in order to ensure access for everyone to health services.

The program was implemented in 1996 in São Paulo, coordinated by the Municipal Bureau of Health, in collaboration with 12 partner institutions, which were responsible for specific areas. The FFM is one of the partners since 2002 and supports the

program managed in the Lapa District, Pinheiros and Butantã in the western area of the capital.

The served population is 132 thousand, using 34 teams of 347 professionals, including physicians, nurses, nursing assistants and community health workers. During this period, 20 Family Health teams were implanted and divided into five Basic Health Units, reaching a coverage of about 18% of the Butantã / Jaguaré Microregion.

Consisting of six Administrative Districts (Butantã Morumbi, Raposo Tavares, Rio Pequeno, Vila Sônia and Jaguaré), this microregion is located in the west of the city and has a total population of about 420,000 inhabitants.

These activities were continued in 2010.

## E) Health Policies

### Elaboration of educational videos for flu by Pandemic Influenza (H1N1) 2009 (Dynamic Directed Communication), Medicine Discipline

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Through the agreement signed with OPA - Pan American Health Organization, with the intervention of the FFM, this project, approved in mid-2010 and developed by the FMUSP Discipline of Telemedicine, aims to develop a set of directed and compact videos, based on approved protocols by the Ministry of Health with the aim of professional training and guidance to the general population.

The seven educational videos, with narration and use of computer graphic sequences of the FMUSP Virtual Human Project are intended to present the following issues: a) Hand hygiene - version for professionals, b) Hand hygiene - version for general public c) Use of EPI; d) Transportation of Patients; e) Car Washing f) Respiratory Etiquette and g) Airport Procedures.

The construction of good programs or educational videos should not be seen only by its scientific content. Good programs should always seek to take the practical experience and enhance the aspects that make learning easy. The idea starts at the purpose of making videos where scientific knowledge is associated with a contextualized approach to engage the target audience. The

transmission of knowledge by the videos would be produced with a fluidity communication with structured questionnaires in an accessible language in order to provide easy understanding information and facilitate the construction of learning through association between information (theoretical) with images (static or dynamic).

The Virtual Human Project (3D computer graphics) is an important resource for the development of Interactive Learning Environments, in that three-dimensional images of structures and dynamics of the human body the reality of what happens inside the body can be showed. These dynamic images are a form of travel within the structures of the body, from known organs to most other body parts. In telling how body systems work, three-dimensional images arouse people's interest in the subject, inasmuch as it can be seen the different body parts (physiology and physiopathology) dynamically and synchronized with the narration and the captions. One subject, rather difficult to be understood through reading can become something pleasant to see and hear, encouraging the retention of knowledge.

### Integration of Competencies in the Judiciary Activity Performance with Users and Drug Addicts

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This project, approved in late 2010., is being developed by the Program of the Interdisciplinary Group of Studies on Alcohol and Drugs (GREA) of the FMUSP Institute of Psychiatry, through an agreement signed with the National Anti-Drug Bureau - SENAD, with the intervention of FFM.

Drug abuse is a complex and multifaceted phenomenon that imposes on society and the government an action from intersectoral policies in law, education, health and social care in seeking solutions to minimize losses from this behavior . In the field of legislation and public policy, relating to the causes and consequences of drug abuse, Law Number 11.343/06, which establishes the National System of Public Policies on Drugs (SISNAD) and

prescribes measures to prevent drug abuse, attention and social reintegration of drug users and addicts, it is the legal situation as a change in paradigm and prosecutions in accordance with the assumption of the National Policy on Drugs (PNAD), which requires the recognition of the differences between the user, the person who misuse it , the addict and the drug dealer, treating them differently without, however, overlook and neglect the mechanisms for combating the drug dealing.

Until the publication of this Law, the user and the dependent were seen in the imaginary of society as a risk or threat. The procedures were limited to police actions (punishment) and referral to psychiatric hospitals (mental illness). Rather, the scope of the new law, the individual who is

prosecuted for possession of drugs for personal use will be entitled to the definition of an individualized therapeutic project (re-socialization), aimed at social inclusion and reducing risk and social and health damage (art. 22, inc. III). In this context, users and dependents will no longer be subject to deprivation of liberty, but rather to social and educational measures implemented by the Special Criminal Courts.

This new paradigm is provided in Article 28 of the Law, therefore, the assumption of educational activities provided in this Act is that the state, with the participation of society, not only can but must formulate and implement policies and community

services programs. Reflecting the new Law N. 11.343/06 and its application in order to be more effective and appropriate by the operators of the Law of Special Criminal Courts and Courts of children and youth involved in criminal prosecution, it is necessary the improvement of knowledge in theoretical and methodological areas directed to problematic drug use (outside the science of law) and appropriateness of joint action (multidisciplinary approach) between the operators of law (judges, prosecutors, defenders, prosecutors, conciliators, lawyers and other attendants of justice), the psychosocial care professionals (social workers, educationalists, psychologists, among others) and professionals in the area of Public Safety.

### Transfusion safety: project "International REDS 'and Research Network proposal in Transfusion Safety for the Ministry of Health

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This study, approved in late 2010, will be developed by the FMUSP Hematology Service, through an agreement signed with the Ministry of Health, with the intervention of the FFM.

It is a network of blood banks in the U.S. with support from NHLBI and has as main objective to develop research focused on blood bank. Three blood centers are part of the Brazilian Network: Fundação Pro-Sangue Blood Centre of São Paulo (FPS / HSP) / Blood Centre of Pernambuco (HEMOPE) and Blood Centre of Minas Gerais (HEMOMINAS).

The foundation of this project was the construction of a single data bank with information obtained in the three transfusion centers. These data allowed to assess the current status and the evolution of blood donation in Brazil.

The objective of the Ministry of Health is to continue this initiative and expand the network to other 4 additional blood centers. Thus, the Ministry will ensure the collection and analysis of data on Hemotherapy practiced in major public blood centers in Brazil and the available data will allow among other actions: a) develop programs to recruit blood donors b) discuss and implement issues related to clinical selection c) define criteria for temporary refusal or permanent basis and with greater accuracy; d) calculate the prevalence of blood diseases in different regions of the country; e) calculate the residual risk of blood diseases according to the prevalence of each region f) develop strategies to increase the percentage of voluntary donations and repetition in our country g) identify epidemiological differences among donors in each region.

### National Assessment of the Bipartite Intermanagers Commissions (CIBs): the CIBs and the induction models of regionalization in the SUS

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The national evaluation of the performance of Bipartite Intermanager Commissions (CIBs) as a qualitative research project and *policy-oriented*, that

evaluates the performance of CIBs and identify models of regionalization in 26 states.

For this, this research, approved in early 2009 and completed in late 2010, was developed by the FMUSP Department of Preventive Medicine, through an agreement signed with the Ministry of Health with the intervention of the FFM. The results were as follows: a) identification of the operating mode of CIBs b) elaboration of recommendations and suggestions for measures and procedures to correct and / or encourage the ongoing processes of regionalization and operation of Collegiate Regional Management and its integration with regional and state instances and with the CIBs c) comparison of operating modes of the CIBs d) knowledge and systematization of social and institutional factors that positively and negatively affect the ongoing processes of the CIBs

intergovernmental negotiation and induction to regionalization e) identification of recent patterns of intergovernmental relations in the management of loco-regional systems of health.

The research was qualitative, it was aimed at assessing the implementation process to the CIBs. The focus of research was directed to the institutional determinants of the performance of the CIBs, trying to highlight the factors and situations that facilitate or hinder the achievement of desired goals. Regionalization drawings were also evaluated in implementation by the Brazilian States, the role of Regional Management Collegiate and the integration between different regional instances.

### Construction of Interactive Materials for Education in Health for general population, based on computer graphics (Virtual Man project)

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Through an Agreement signed with the OPAS - American Pan Organization of Health, with the interveniência of the FFM, this study, approved in the end of 2009 and concluded in 2010, was developed by the FMUSP Telemedicine Discipline by means of technology of graphical modeling in 3D. The Virtual Man Project is currently a graphical and simple form to transmit knowledge and an important tool of aid to learning. It has been used in diverse areas as: radios, television, websites, among others, for health promotion (Social Education in Health).



*Virtual Man simulates a trip inside skin in one of the modules of the Interactive Learning Environment*

It was developed a first set of interactive materials in order to facilitate the structuring of the Interactive Learning Environments in communities, for the teaching of topics related to health, by providing kits containing instructional videos, guides and posters to promote Social Health Education in UBS and Schools.

The Virtual Human Project (3D computer graphics) is an important resource for the development of Interactive Learning Environments, in that three-dimensional images of structures and dynamics of the human body which can show the reality of what happens inside the body. These dynamic images are a form of travel within the structures of the body, from known organs to most other body parts, often less discussed in articles of newspapers and magazines.

### Project "V Specialization Course in Mental Health "

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Through an agreement signed in late 2008, the Ministry of Health, with the intervention of the FFM, the USP School of Nursing developed in 2010, the V Specialization Course in Mental Health, aiming to train project managers de-institutionalized in care and nursing research in health, enabling the development of research lines according to the psychiatric reform in Brazil.

Its main purpose was the training of professionals in health planning and development of mental health

care of the population, enabling them to influence the processes of transformation of reality to their areas of the operation through the inclusion of this area of attention in the community health field.

The course was aimed at top-level professionals - doctors, psychologists, nurses, social workers, occupational therapists and others - that could form the multidisciplinary team of mental health and exercise management functions, from the public mental health services in the State of São Paulo.

636 applications were received, of which 50 were enrolled for free.

## Observatory of Human Resources in Health Network

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Through the agreement signed with OPAS - Pan American Health Organization, with the intervention of the FFM, this study, approved in late 2009 and developed by the USP School of Nursing - EEUSP, aims to build an evaluation methodology of employees education programs of nursing services in public and private health in São Paulo and its actions are: a) establish criteria for evaluating educational programs for nursing staff b) disclose of the EEUSP production on curricular reform in nursing undergraduate courses and also the participation of the School in the Pro-Health project of the Ministry of Health c) assess the results of

educational programs for nursing staff performed in a public and in a private institution of the health sector in São Paulo d) update the design and content of the website for the EEUSP Workstation.

With these measures, it is expected to develop innovative and reflective teaching practices as a second opinion and applied to continuing education training of nurses and other health professionals, and the development of new competencies to work on the determinants of the living and health conditions of social groups. These activities were continued  
2010.

## Project "Permanent Institutional support to the health regions in the State of Sao Paulo"

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This project, developed by the FMUSP Department of Preventive Medicine, through an Addendum to the University Agreement signed with the Bureau of Health of São Paulo, with the intervention of the FFM, contemplates the work with the permanent institutional Regional Management Collegiate (CGR) covered by the Regional Health Department IV (Region of Santos) and the Regional Health Department II (Central, dos Lagos and Consortia Regions) and it is needful to contribute to the development and operationalization of regionalization of the health system within their Collegiates.

The main objectives of the initiative are: 1) construct, together with the managers, the necessary tools for planning and implementing the regionalization of the health system, according to the principles of SUS, 2) Sharing knowledge and experiences with the managers for the construction of the regionalization of the health system, 3) Identify and standardize concepts and approaches regarding the regionalization of health, 4) Appropriate and identify scientific procedures and information sources relevant to the deployment of the regional health within the DRS, and 5) support managers to perform their specific role in the regional health system.

The main developed activities in 2010 were:

a) DRS II (Araçatuba): Workshops and meetings with the Technical Group of the Project to: 1) Joint elaboration of the instrument for a classification the

primary care by addressing a municipality the existing physical structure, ESF professional training and equipment availability, supplies and medications, 2) Joint elaboration of an instrument aimed at identifying basic care activities to be offered in the regional system of health, 3) Definition of the strategies for integration between primary and secondary outpatient level and 4) integration with the AME system and its qualification as a regional operating sensor system.

b) DRS IV (Santos): Oficinas de trabalho e reuniões com o Grupo Técnico do Projeto para: 1) Levantamento da produção de serviços de saúde no CGR e estruturação de Bancos de Dados; 2) Planejamento e produção de informação para a elaboração do projeto regional de saúde na DRS; 3) Disponibilização do levantamento da produção científica sobre serviços e situação de saúde na região; 4) Iniciação da qualificação da atenção básica por município abordando a estrutura física existente, capacitação profissional da ESF e disponibilidade de equipamentos, insumos e fármacos.

b) DRS IV (Santos): Workshops and meetings with the Technical Group of the Project to: 1) Survey of output of health services in the CGR and structured databases, 2) Planning and production of information for the regional health project preparation in DRS, 3) Availability of scientific survey on services and health situation in the region, 4) initiation of the qualification of primary care by municipality addressing the existing

physical structure, ESF professional training,

equipment availability, supplies and medicines.

## Project "Monitoring and Evaluation of the Implementation of the National Continuing Education Policy"

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The project " Monitoring and Evaluation of the Implementation of the National Continuing Education Policy "is being developed by the Department of the FMUSP Preventive Medicine through an Agreement signed in late 2008, the Ministry the Health, with the intervention of the FFM. The initiative proposes a study that allows to characterize, through four research modules, the development and implementation of the content and methodology of state and regional plans of continuing education in health and organizational designs designed for the implementation of the policy of continuing education .

The implementation of the four modules includes methodological strategies and varied research designs. In addition, there are situations that enable more comprehensive studies, such as a documentary analysis of regional plans of a sample of regions and situations, which require case studies with data and information obtained through

a combination involving document reviews and in depth and semi-structured interviews. The overall study will include a selected national sample with different criteria for the effectiveness of different modules, depending on its goals.

Its main objectives are detailed below: 1) generate knowledge about the current efforts to build new organizational designs and new procedures of interaction and articulation of actors involved in the regionalization of the national policy of continuing health education. 2) Identify the procedures that form a strategy of interaction between state managers and local health officials or their representatives, in shaping the regional decision-making policy of continuing education. 3) Generate and provide information for decision-making process, facilitating the monitoring and improvement of guidelines and mechanisms of regionalized health management.

These activities were continued in 2010.

## Project "Data analysis from national surveillance health systems of the adults and adolescents Brazilian population"

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Two national surveillance systems of risk and protective factors for adolescent health and adult are being planned or operated in the country since 2006, the Bureau of Health in Surveillance of the Ministry of Health, with support from various academic institutions in the country. The surveillance system on the adolescent population studies the probability samples of all individuals enrolled in the 7th grade in public and private elementary schools in the Federal District and each of the capitals of the 26 units of the country.

The surveillance system on the adult population studies the probability samples of all individuals with 18 years old or more, living in houses with telephones in the Federal District and each of the capitals of the 26 units of the country. In both cases,

information is raised and that allows to estimate relevant clusters of the population frequency, distribution and trend of socioeconomic development of risk factors that determine much of the morbidity and mortality in the country. This study, developed by the USP School of Public Health, through an Agreement signed in late 2008, with the Ministry of Health, with the intervention of FFM, aims supporting the Ministry of Health to analyze the data collected by the national monitoring health surveillance system of adolescents and adults Brazilian population, ensuring that valuable information had been collected by these two systems be quickly and efficiently analyzed.

Its activities were continued in 2010.

## Models of advanced data analysis of the air pollution effects on public health: An epidemiological and experimental approach

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This project, to be coordinated by the Laboratory of Experimental Air Pollution of the FMUSP Department of Pathology. It was made possible through an agreement between FFM and the Health Ministry in late 2007, however, due to delay in release the funds, it only started in late 2008.

The proposal is intended to extend and institutionalize the training model and training of professionals in public health, to form a critical mass of staff able to assist the Ministry of Health to formulate public policies that promote health, having exposure to air pollutants as a prism of orientation.

This is the specialization in Air Pollution and Human Health course, entirely at distance, which includes all the Brazilian VIGIAR participants - more than 20 units of the federation, which began in Aug/2009. The course consists of 11 modules: 1 - Methodology of scientific research in health; 2 -

Sources of air pollution; 3 - Sampling Techniques of pollutants; 4 - Epidemiology in environmental health; 5 - Assessment of exposure indicators and the effect of air pollution, 6 - Statistical methods used in studies of air pollution; 7 - Methods of risk analysis; 8 - Information System and geoprocessing, 9 - Air pollution and health effects; 10 - Policies of environmental health surveillance ; 11 - Public health policies and service organization.

Between November and December 2010, there were presentations of TCC at distance. The evaluation of TCC's was performed by a jury composed of three PhDs, composed of a counselor and two teachers. All TCC's were approved.

In the course, 78 students were enrolled, of whom 61 students were admitted.

## Project "Strengthening Regional Management in São Paulo"

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This interventional project was developed from January 2009, by the School of Nursing through an Addendum to the University Agreement signed with a Ministry of Health of São Paulo, with the intervention of FFM, aims to support the development of the health management of DRS in Presidente Prudente (and thus, together with five CGR of this program) and together with the two CGR of Greater Sao Paulo DRS, which is the Rota dos Bandeirantes CGR and water sources. The main objective of this project is therefore qualify health care regions, supporting the construction of the Management Pact, seeking to formalize a commitment to health responsibilities that having a goal to ensure attention to the needs of the population, based on the actions of municipalities and state, the territories, service organization and management system.

They are identified as major issues, object of this project: 1) insipient managers' performance against the organization of health regions and the new role of the state manager in this restructuring, bringing

the challenge of new managerial skills, including the negotiation and agreement within the CGR, 2) the little recognition of the primary care importance as a way of expanding access and the solvability of the health needs of the population and the middle and high complexity attention overestimation, 3) difficulty of social actors in conducting health diagnoses, which are able to inform health planning for a deployment of regional health that support the CGR in the discussion and prioritization of needs of the region, and 4) a difficulty of building intersectoral action and social participation giving sustainability for the development of regions.

As a result of the level 1 of the Support project, one can point an evidence that a major problem for the strengthening of the management within the CGR is the lack of managerial capacity of health secretaries and technicians who support them. Another issue identified is the low participation in health in this region.

These activities were continued in 2010.

## Support to the Ministry of Health in Operation and Improving the Vigitel System

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Since 2006, Brazil has a surveillance system of main determinants of DCNT in here, which relies on

telephone interviews conducted in random samples of adults living in households with telephones. This



system, called VIGITEL (Surveillance of Risk Factors for Chronic Diseases and Protection through telephone interviews) was tested by NUPENS / USP in São Paulo in 2003 (Miller et al 2004) and pre-tested in the same city and four other state capitals in 2005.

This project, coordinated by the USP University of Public Health, through the Centre for Epidemiological Research in Nutrition and Health, of the University of São Paulo - NUPENS / USP, was made possible through an agreement between FFM and the Ministry the Health in late 2007. However, due to delay in release the funds, it only started in late 2008. The initiative's main objectives are to provide technical support to the Bureau of Health

Surveillance of the Ministry of Health - SVS / MS in activities related to revisions of VIGITEL questionnaire, data collected analysis and production of technical reports and scientific articles.

With the advice of NUPENS, VIGITEL it was implemented by the Bureau of Health Surveillance of the Ministry of Health - SVS / MS in the capitals of all 26 Brazilian states and the Federal District in 2006 (Ministry of Health 2006). This agreement aims to ensure the continued NUPEN / USP support to the Ministry of Health in the operation and improvement of the VIGITEL system. These activities were continued in 2010.

### Project Diabetes Mellitus – Continuing Education – Human Resources Training in Professional Education and Stricto and Lato Senso Post-graduation in Health

This project, coordinated by the FMUSP Department of Endocrinology, was made possible through an agreement between the FFM and the Ministry of Health in late 2007. However, due to delay in release of funds, it only started in late 2008. Its main objective is to implement a program to redirect the treatment of patients with diabetes with the completion of training course on new forms of treatment and prevention of its complications, using movie techniques, on-line interactive discussions and a communication deployment line for Internet (DISCUSS YOUR CASE), allowing the discussion of difficult clinical cases and guidance for complex problems considered by the basic area professionals.

The FMUSP Telemedicine is responsible for preparing the material conveyed in various media such as Internet, DVDs, pamphlets and audio-books, thanks to technological resources developed by the department, including the "Virtual Man" program. Currently there are 14 videos being made in the area of Educational Communication Design of Telemedicine, which mixes contextualized images, lessons from the professionals involved and sequences of Virtual Man, developed according to the theme of the lesson. For each video it is also made in a summary audio format to be available for download on the Internet through Cybertutor

(<http://www.estacaodigitalmedica.com.br/cursotelemedicinal/>), a tele-educational system on the Internet.



*Slides produced by Telemedicine for the Diabetes Project*

The project will also relies on a risk questionnaire available on the Internet, in which adults can calculate the chance of developing diabetes, moreover the Prato Feito Program, which teaches the doctor of any area to suit the patient's diet according to their clinical case .

The Diabetes Centre of Bahia is responsible for planning workshops and attendance at the next stage, discussions will be held from clinical cases and a deepening of the content initially presented.

These activities were continued in 2010.

## Research Committees of Child Mortality in the South and Southeast regions of Brazil: a strategy to be implemented and qualified

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This project, coordinated by the FMUSP Department of Pediatrics, was made possible through an agreement between the FFM and the Ministry of Health in late 2007. However, due to delay in release of funds, it only started in late 2008.

Given the importance of the investigation of infant deaths and the creation or implementation of the Committees for the Prevention of Infant and Fetal Death, this project aims to evaluate whether these strategies have been adopted in the country, particularly in the south and southeast, encouraging its implementation in municipalities that have not started that process. The Project provides an evaluation of the process of infant deaths investigation in cities with population greater than or

equal to 80,000 inhabitants, grouped in the Southeast, excluding São Paulo (Minas Gerais, Rio de Janeiro and Espírito Santo) and South (Paraná, Santa Catarina and Rio Grande do Sul).

In 2010, the collected data was entered, the database was developed and the results were presented to the Ministry of Health and distributed to the Bureaus of Health. The second stage of the project was also performed, in which eight State workshops were developed to present the results and conclusions of the first study to managers and technicians from the State and Municipal Bureaus of Health, support and qualification of the work done by municipal and state committees.

## Family Lifestyle as a determinant of child health: development of an evaluation tool

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This project, coordinated by the FMUSP Department of Pediatrics, was made possible through an agreement between the FFM and the Ministry of Health in late 2007. However, due to delay in release of funds, it only started in late 2008.

Facing the prospect of modern sanitary practice, it is necessary to develop techniques and processes to meet the health conditions of the target population and seek answers to these problems, and to support the multidisciplinary and multisectoral planning actions for health promotion and disease prevention in the community in question.

In this context of concerns, it is necessary to expand the knowledge of living conditions and seek techniques in other areas of knowledge that may assist in understanding the living environment and their possible participation in the health – illness process. This knowledge will contribute to the proposed public policies, aiming at the prevention

and treatment of prevalent diseases in our population.

Hence the purpose of this study: the development of an instrument to assess the family lifestyle, which in a second step, will bear an impact study on the mode of living in the health - illness process of the child. The concept of lifestyle adopted is that of Kotler in 1997: "The lifestyle of a person represents the standard of living expressed in terms of activities, interests and opinions. Portrays the 'whole person' interacting with their environment. "

The activities conducted in 2010 were: 1) prepare the assessment tool of the family lifestyle, 2) pre-test in a pilot study with a sample of 30 families for a month, and 3) analysis of the results of the pilot study in specific program, 4) re-elaboration of the questionnaire items and pre-testing with other mothers, 5) selection of sample being searched and the training of fieldworkers, 6) application of the instrument in the sample of 200 families.

## F) Research Projects

### Cancer Treatment. Innovative use of the nanoemulsion lipid incorporated oxysterols to induce cell death

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This project, conceived by researchers of the HCFMUSP Laboratory of Genetics and Molecular Hematology was made possible through an agreement between the FFM and FINEP - Study and Project Funding, in late 2010, and has as main objective to introduce a new pioneering tool of Pharmaceutical Nanotechnology for cancer treatment.

In its more specific objectives, the project proposes: 1) "in vitro", study various oxysterols in relation to its ability to its complex ability with the nanoemulsion in

order to exert cytostatic and cytotoxic effects on tumor cells, 2) "in vivo", more specifically in rats and dogs with lymphoma, study the toxicity of various formulations, the characteristics of compartmentalization, its plasma clearance, the effectiveness of using one, two or more formulations, tumor development and animal survival, 3) in patients with large B cell lymphoma, check the toxicity and proceed to compartmental analysis, including plasma clearance.

### SP Longitudinal Study of Adult Health - Wave 2 - SP

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This project, under the responsibility of the University Hospital of USP and funded by an agreement between the FFM and FINEP - Study and Project Funding, in late 2010, aims to estimate the overall incidence of diabetes and cardiovascular diseases, study natural history and investigate the associations in biological, behavioral, environmental, occupational, psychological and social aspects related to these diseases and complications, seeking to build a causal model that addresses their interrelationships. The aim is also to describe the temporal evolution of these factors and determinants of this evolution and to identify the modifier effect of associations and to compare patterns of risk among the participating centers which can express regional variations related to these diseases in the country. In order to allow for future studies, including genetic tests, it will be kept on storage of biological material and DNA extraction.

Continuing the first phase of data collection (Wave 1), this project aims to meet the following objectives: 1) To continue monitoring the outcomes of the cohort to identify new cases of diseases related to the period of validity; 2) Plan the second wave of interviews and examinations of the study, including: definition of the protocol, pre-test interviews, tests and measures, implementation of pilot studies, and prepare the datasystem, 3) Make the collection of data required for wave 2, 4) Conduct analysis with data collected in wave 1, prepare papers and submit them for publication; 5) Enlarge the Biotec of São Paulo for the storage of biological material collected in wave 2, 6) perform the biochemistry and dosage of hormones in blood and urine microalbuminuria tests in the central laboratory in São Paulo and 7) interpret, encode and send to the Data Centre the data from ultrasound performed in wave 1.

## Tomography Medical Imaging in Electrical Impedance for Anesthesia and Neonate Patients

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This project, conceived by researchers of the HCFMUSP Laboratory of Pneumology and it was made possible through an agreement between the FFM and FINEP - Study and Project Funding, in late 2010, aims the development of two devices for diagnosis, prevention of complications and monitoring of therapy in neonates and anesthetic procedures. Two modules will be developed and they will be dedicated to Electrical Impedance Tomography (EIT), a portable and inexpensive technology that generates real-time images of transverse sections of the body without using radiation or contrast.

It will be developed:

- 1) Anesthesia Module (for Surgery Centre): development of specific hardware, with a software for detection of accidental disconnection, inadequate ventilation, poor placement of tracheal tube and atelectasis;
- 2) Neonate Module (to neonatal ICU): development of specific hardware, with software for monitoring and adjusting CPAP, adjustment of mechanical ventilation and high frequency ventilation, diagnosis of bronchiolitis severity.

### Validation of the rk39 immunochromatographic test using whole human blood and oral mucosa swab (saliva)

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This research was approved in late 2010 and will be developed by the FMUSP Laboratory of Epidemiology and Immunobiology, through an agreement signed with the Ministry of Health, with the intervention of the FFM.

So far, the diagnosis of visceral leishmaniose based on parasitological and immunological methods available for use, it presents an immense variety in sensitivity and specificity and delay the diagnosis, the need to use not always available material, such as ELISA reader, optical and fluorescence microscope and also the pressing need for trained

and skilled handling of inputs.

Currently, rapid tests with rk39 are validated to use it in serum as specimen, with no validation to use it in other clinical specimens such as blood and saliva, which expedite the diagnosis and could be used in field at the time of patient care with LVA suspicion. Thus, this study aims to validate the rapid immunochromatographic test with rk 39 for using it in whole blood and saliva compared to serum and using it with other serological methods using total antigen and parasitological methods.

### Cost-effectiveness analysis of the replacement of vaccine against poliomyelitis of live attenuated virus and oral use (OPV) by regimens containing the inactivated vaccine (IPV) during the routine of the National Immunisation Program

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This study was approved in late 2010 and will be developed by the FMUSP Department of Preventive Medicine, through an agreement signed with PAHO - Pan American Health Organization, with the intervention of the FFM.

The strategy of vaccination against poliomyelitis is a major challenge for the National Immunization Program (NIP) and managers of the health system. There is a need to maintain high vaccine coverage to prevent re-introduction of wild poliovirus. However, the continued use of oral poliovirus vaccine (OPV), involves the risk of paralytic polio associated with the vaccine virus (VAPP). There is an effective and safer alternative - the inactivated virus vaccine against polio (IPV). Despite the higher

cost of IPV, this strategy decreases or even eliminates the occurrence of cases of flaccid paralysis associated with the vaccine virus (VAPP).

The objectives of this study are: perform a synthesis of literature on the epidemiology of poliomyelitis, strategies and schemes of vaccination and environmental impact of the vaccine virus and to estimate costs of different vaccination strategies.

The scientific publications available on Medline and LILACS will be analyzed, data from unpublished national survey, the systems of health information, documents of national and international guidelines.

## Peruvian/Brazilian Amazon Centre of Excellence in Malaria

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This research, initiated in 2010 by the USP Institute of Biomedical Sciences, with funding from the University of California, with the intervention of the FFM, aims to: (a) estimate the prevalence of asymptomatic infection by Plasmodium and characterize risk factors for the development of the symptoms in the presence of malaria infection (b) estimate the prevalence and risk factors for the presence of gametocytes in symptomatic and asymptomatic infections, (c) estimate the risk of subsequent symptomatic infection among patients with asymptomatic parasitemia and uninfected individuals; (d) determine, based on genotyping of parasites, if subsequent episodes of symptomatic

malaria are due to the persistence of parasitic strains originally found in an asymptomatic carrier and (e) compare levels of genetic diversity of parasites in symptomatic and asymptomatic infections.

The entomological component of this proposal, centered on the main malaria vectors found in the study area aims to: (a) determine the vectors of diversity in this region by means of molecular tools for identification and genotyping arrays and (b) assess the impact of different economic activities in the structure of the vectors of the population.

## Determination of average emission factors of light and heavy fleet of vehicles in the city of São Paulo using tunnel experiments and evaluating the relative toxic emissions generated by diesel, gasoline and ethanol engines

This project, coordinated by the Laboratory of Experimental Air Pollution of the FMUSP Department of Pathology, was funded by a contract signed in mid-2010 between the FFM and the Union of Sugarcane Industry of the State of São Paulo - UNICA.

The study aims to estimate the actual rates of the automobile fleet average emission of São Paulo, separated by light fleet fueled by gasoline and ethanol and heavy fleet fueled by diesel, from samples collected in tunnels.

The tunnel is a confined space where you can monitor the pollutants generated by vehicle exhaust which transit in it and the dispersion of pollutants occurring at tunnel entrances and ventilation ducts, allowing one to calculate a balance between emissions and concentrations outside. In the case of the city of São Paulo, the existence of tunnels with restricted access to part of the fleet with only light vehicle traffic, also allows a specific emission rate to that fleet. Thus, performing experiments in tunnels combining restricted and unrestricted experiments in order to obtain, by difference, the emission rate on the heavy fleet.

## Methodology and data sources for estimating health services utilization - Review and support the development of the HPV cost-effectiveness model

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These studies were approved in late 2010 and are under development at the FMUSP Department of Preventive Medicine, through an agreement signed with the Pan American Health Organization - PAHO, with the intervention of FFM.

The projects are being developed within the ProVac Network of Centers of Excellence in Economic Evaluation and Decision Analysis of PAHO, which aims to develop products to support studies of economic evaluation and decision analysis for vaccines and immunization programs in Americas and Caribbean. It is part of the ProVac Network two Centers of Excellence in Brazil (FMUSP, UERJ), two in Colombia (Universidad Nacional de Colombia

and Universidad de Cartagena), one in Argentina (Institute of Clinica y Sanitaria Efectividad, IECS) and one in Mexico (Instituto Nacional de Salud Pública).

USP Centre of Excellence is responsible for two projects:

1. Development of guidelines for the use of secondary data to develop estimates of service use in economic evaluation studies;
2. Development of an analytical model of reference for studies of CE for the HPV vaccine.

## Development and application of Active Search Strategies of Ex-inmates of Christ Redeemer Shelter, Duque de Caxias, Rio de Janeiro, Aided by Remote Data Capture

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This research began in mid 2010 and is being developed by the FMUSP Department of Preventive Medicine, through an agreement signed with the Ministry of Health, with the intervention of FFM.

Solving the problem of environmental contamination and human exposure to organochlorine compounds in the region of Cidade dos Meninos, the city of Duque de Caxias, Rio de Janeiro, involves complex long-term issues with short and long term implications to the people who have been exposed to environmental risk. This project represents the construction of a partnership between the Ministry of Health and the scientific community to advance in the solution of problems related to a potential human exposure to pesticides in the former factory of the Institute of Malariologia which has been little investigated. It is the identification of former inmates of the Christ Redeemer Shelter from 1950 until 1996, when, by legal decision, it was closed.

In order to develop and implement a strategy of active search for former inmates of the Christ Redeemer Shelter, it is essential to assess the methodologies that are being employed and develop procedures for collecting and analyzing data. The final product should be a database with the identification and the probable location of the former inmates. It is expected that this database can be accessed remotely using a Security Internet Protocol (HTTPS) and it can be continuously updated and serves as a support tool for managers involved in monitoring and resolving problems related to Cidade dos Meninos.

In a possible second phase of the project, individuals will be obtained through location information, who should be contacted and invited to participate in the registration for health monitoring.

## Deciphering genetics and KIR function in Recent Infection by HIV-1 by Bioinformatics

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This study was initiated in late 2009 and is being developed by the HCFMUSP Laboratory of Immunology through a sub-contract with the University of California, with the intervention of FFM.

Since the human body acts to control (or fail to control) the replication of HIV in early infection remains an issue incompletely understood. As the search for an HIV vaccine continues, new approaches to manipulate the responses of the innate immune system and thus generate new forms of protection may be needed. Manipulation of the innate immune system and NK cell in particular, is a great hope as a new mechanism of protection against infection by HIV 1 and other pathogens.

The study is innovative in its scope and reach. The same is intended to describe the cluster of KIR genes and their known primary family of ligands HLA I A, B and C in 1500 people. Through an approach that uses bioinformatics, this genetic variation will be compared to the phenotype and function of NK cells mediated by KIR, in the NKs target cell system 722.221. So far, no data have been generated pairing KIR genetic receptor to functional measurements of NK cells in HIV-1 disease caused by this scale, a fact that makes the study of great value to the entire scientific community.

## Epidemiological evaluation of electromagnetic fields on the premises of Furnas

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This study, approved in late 2009, is being developed by the D FMUSP Department of Preventive Medicine through a contract with Furnas Central Electric S/A with the intervention of the FFM. The initiative aims to establish parameters in the levels of human exposure to electromagnetic fields (EMFs) generated by transmission systems and other equipment and construct an epidemiological model to assess the possibility of health effects in populations living near these equipments.

Its main specific objectives can be listed as follows:

a) critical review of epidemiological studies linking population exposure to electromagnetic fields and health effects with emphasis on methodological aspects of exposure assessment and b) developing a geographic information system (GIS) to identify CEM levels in the population living close to transmission lines (TL) and other electrical systems for power generation and distribution, c) quantifying, through this GIS, the population potentially exposed

to CEM and characterize these populations according with demographic and socioeconomic position, d) characterize the levels of exposure of the population with respect to the limits adopted by ICNIRP e) develop mathematical models to estimate the potential impact on health of these populations from exposure to the observed CEM, taking into account the characteristics and the effects reported in international literature; f) conduct an epidemiological study in some selected segments of densely populated urban areas to assess the risk of death from certain cancers and other possible biological effects associated with exposure to CEM.

Information about mortality for the municipality of Rio de Janeiro has been collected and geo-referenced. The map of the transmission lines is in a final stage of preparation.

In 2011, analysis will be made.

## Project "Network of Clinical Research and Technology Assessment in Health" and the sub-project "Morbidity in Hypertensive Patients and Obstructive Sleep Apnea – MORPHEUS Study "

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Hypertension represents one of the most serious public health problems, with impact on incidence, mortality and mortality from brain-vascular disease in coronary and renal and cardiac insufficiency. Despite the increase of the therapeutic and pharmacological-based products have increased considerably in recent decades, the proportion of patients with resistant hypertension who cannot cut their blood pressure to levels of security (despite adequate treatment with at least three drugs including diuretics), is large enough to allow other forms of treatment to be tested. There are increasing evidences that obstructive sleep apnea (OSA), characterized by repeated episodes of partial obstruction (hypopnea) or complete of airway

(apnea), is very common in hypertensive patients, particularly among patients with resistant hypertension . In addition, there is increasing evidence that OSA independently contributes to increase blood pressure, however, the impact of treating OSA in patients with resistant hypertension is not well established.

The purpose of this Agreement, approved by FINEP - Study and Project Funding in mid-2010, with the intervention of FFM is to test the hypothesis that the effective treatment of obstructive sleep apnea with continuous positive pressure device in the airways, contributes to lowering blood pressure.

## Project "Assessment of health impacts of air pollution in Brazilian cities and policies to control air pollution by motor vehicles"

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The impact of air pollution on health is being studied worldwide. In Brazil, several studies have shown that pollution is responsible for deaths and hospital admissions, especially for respiratory and cardiovascular diseases. However, nearly all of these studies were conducted in Brazil in São Paulo, which does not account for the diversity of situations of pollution and population characteristics of Brazil. The small representation of these tests makes it difficult to extrapolate results for other cities and prevent the development of surveillance activities taking into account the characteristics of places. Furthermore, it is important to deepen knowledge of the process associated with the formulation, political and technical feasibility and results achieved by policies that involve the control of air quality (e.g. PROCONVE) in the three spheres of government.

The objectives of the "Assessment of health impacts of air pollution in Brazilian cities and policies to control air pollution by motor vehicles" study, developed by the FMUSP Department of

Preventive Medicine, through the Agreement signed in late 2008, with the Ministry of Health, with the intervention of the FFM, are:

- 1) Identify the influence of international guidelines aimed at controlling air quality accustomed to urban transport with special focus on the city of São Paulo, where it has updated data from the fleet of motor vehicles and public transportation.
- 2) Provide data on the effects of air pollution on health in Brazilian metropolitan areas that contain pollution and climate data, supporting the structuring of the Health Surveillance Program Related to Air Quality (VIGIAR) and the international scientific literature.

All data have been collected and organized into an Internet portal with restricted access. Trainings were conducted with professionals from the health departments of various cities and descriptive analysis are ready. The final analysis are in a very early stage.

## The Effects on Eicosanoid Pathways: implications for Altered Innate Responses in Asthma

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A worsening of asthma frequently occurs when infectious stimuli such as viral infections are superimposed on a "micro-environment" characterized by inflammatory Th2 cells and mediators, which is the characteristic inflammation in the airways of asthmatics. In the specific goal of this project, developed by the FMUSP Department of Pathology, through a contract signed in mid-2007 with the University of Pittsburgh, with the intervention of FFM, 20 lungs obtained at autopsy from patients who died of status asthmaticus (fatal asthma) and 10 patients who died of non-pulmonary causes (controls) will be studied. Between January and December 2010 these were the following activities:

- 1- staining of histological slides and analysis of the labeling of anti-iNOS in large airways and small airways in 24 cases of fatal asthma and 9 controls.
- 2- Standardization of anti-COX2 and staining of slides.

- 3- several tests were conducted to optimize the immunohistochemical reaction with anti-eotaxin-1, but without satisfactory results. The testing of anti-IL4R $\alpha$  has been initiated, but without reaching to the standardization of the reaction in this period.
- 4- In an audio conferencing with the main investigator Dr. Sally Wenzel it was decided to exclude the eotaxin project marker analysis and include the marking and counting of eosinophils and neutrophils in the lungs of the study. These antibodies have been obtained in late 2010.
- 5- The summary entitled "Inducible nitric oxide synthase is Increased in the large airways of fatal asthma" has been accepted for presentation as a poster at the Congress of the American Thoracic Society from 13 to 18 May 2011.



## Project "Population structure and transmission dynamics of Plasmodium vivax"

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The aim of this research, funded by the National Institutes of Health - NIH, with the intervention of the FFM, and developed by the Institute of Biomedical Sciences of USP, is to characterize the genetic structure and dynamic transmission of human malaria parasite *Plasmodium vivax* with the long term objective, of understanding the evolutionary biology of this species and its potential implications for the treatment and control of malaria. *Plasmodium vivax* is associated to 70-80 million clinical cases of malaria each year, with 2.6 million people at risk of infection worldwide.

The specific objectives of this research are: 1) estimate levels of the microsatellites diversity, polymorphism single-nucleotide (SNP) density and recombination rates and study the geographic pattern of world populations of *P. vivax*, 2) analyze the transmission dynamics of *P. vivax* transmission genetically distinct lineage in a well-characterized

cohort of individuals exposed to the malaria and determine the rate at which new haplotypes disappear or are introduced into the population, 3) carry out SNP and microsatellite discovery through a 300-kb segment of chromosome of four lineages of representative *P. vivax* to standardize and high-throughput strategies for large-scale typing of SNPs isolated in field and 4) compare these 300-kb DNA sequence of *P. vivax* to a corresponding sequence in one of its closest relatives, the malaria monkey parasite *P. knowlesi*, in order to obtain mutation rates estimatives, SNP single nucleotide and density of different types of DNA sequence of *P. vivax* and in order to permit identification of genes under positive selection throughout this chromosomal segment.

These activities were continued in 2010.

## Evaluating the implementation of the program for leprosy control in the primary basic network of Aracaju, Sergipe, Brazil

This study was approved in late 2010 and will be developed by the FMUSP Department of Preventive Medicine, through an agreement signed with PAHO - Pan American Health Organization with the intervention of FFM.

The development of the study has the support of the Municipal Bureau of Health in Aracaju, through the Coordination Office of the Municipal Epidemiological Surveillance and Coordination of the Leprosy Control Program. The objective is to evaluate the implementation of the Leprosy Control Program developed in the city of Aracaju - Sergipe from the following studies: 1 - describe the epidemiological

profile of leprosy in the previous five years and in the after five years to the decentralization process of actions, in order to control the disease, 2 - evaluate the control process of leprosy in primary care services, 3 - estimate the prevalence and gradation of physical disabilities and patients' knowledge about disabilities.

With this information, it is intended to suggest strategies for preventive medicine and public health, that enable the actions of PMCH strengthening and improve care assistance provided to people affected by leprosy.

## Project "Production of Transgenic Rabbits for Hybridoma-Free Generation of Monoclonal Antibodies"

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Monoclonal antibodies (mAb) from mice are produced from the fusion of B lymphocytes from a mouse stimulated with an antigen and a transformed B cell (myeloma) in a multistep process. Immortalized clones (or hybridomas) always produce the same monoclonal antibody that recognizes a protein or structure, by binding to its unique epitope recognition. Humanized monoclonal antibodies are used for diagnosis and therapy of dozens of human diseases. As an example, Herceptin (anti-ErbB2) has been used in breast cancer and Remicade (anti-TNF) in the treatment of rheumatoid arthritis.

This project, funded by the International Centre for Genetic Engineering and Biotechnology - ICGEB with the intervention of the FFM and developed by the Institute of Biomedical Sciences of USP, is aimed, firstly, to generate genetically modified rabbits through the introduction of the encoding antigen gene tsA58-SV40 (T antigen of the Simian 40 virus of monkey). And, secondly, to demonstrate that B cells of transgenic rabbits are capable of producing B cell clones producers of monoclonal antibody after activation of the transgene (cell immortalization) during growth to the 33 °C (temperature premise of transgene expression). In a

second phase, we intend to use these transgenic rabbits for the production of humanized monoclonal antibodies against cytokines, growth factors and

their receptors.

These activities were continued in 2010.

### Project " Varicella Serum Evaluation in given vaccine with pressure injectors with disposable syringe without a needle"

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Through the Addendum of the University Agreement signed with to Bureau of Health of São Paulo, with the intervention of the FFM, the FMUSP Department of Preventive Medicine, this research is being developed with a comparative serology in 600 children between one and two years old, institutionalized in the Nursery of the City of São Paulo of the varicella vaccine administered intradermally with 0.1 mL pressure injectors without needles with disposable syringe compared to the conventional method with a 0.5 mL volume with syringe and needles.

The methodology to be adopted is: 1<sup>st</sup> Stage: Planning and preparation of a randomly selected sample of children to be vaccinated in several nurseries involved with data collection forms by hand and computer-software developed with Web-database setup. 2<sup>nd</sup> Stage: Immunization and collection of two blood samples from 600 children institutionalized in the Nursery of the City of São Paulo. 3<sup>rd</sup> Stage: Laboratory Processing of collected blood samples and processing the results with data analysis and completion of the Research information with presentation of the research report.

These activities were continued in 2010.

### Coffee studies and the heart

Result of an agreement signed between the FFM and the Brazilian Agricultural Research Corporation - Embrapa, this research has begun, coordinated by the Department of Cardiology of the HCFMUSP Heart Institute in late 2007. In summary, the research aims to:

1) Stimulate and develop research projects and medical studies regarding the development and evaluation of effectiveness for human health effects of nutraceuticals and medicinal coffee in order to evaluate the bioavailability and pharmacokinetic profile of chlorogenic acids and their derivatives in normal volunteers and patients with ischemic heart disease and type 2 diabetes.

2) Evaluation of several ways of making coffee, including decaffeinated and soluble coffee in normal subjects and in patients with coronary disease.

3) Evaluation of the influence of coffee intake on glucose homeostasis in type 2 diabetic patients and nondiabetic patients, aiming to obtain scientific evidence for the processing and marketing of healthy products for consumers, both in prevention and treatment of cardiovascular and other human body systems.

In 2010, there were six sub-tests with various types of coffee in different individuals with varying results.

### Pilot subsystem monitoring project of exposed populations to chemicals

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This project, coordinated by the FMUSP Department of Preventive Medicine, was made possible through an agreement between FFM and the Ministry of Health in late 2007. However, due to delay in release of funds, it only started in late 2008. Given the growth and development of production processes in Brazil, the exposure to a multitude of substances becomes one of the most serious consequences for the health of human populations. In order to prepare and develop the First National Survey of Populations Exposed to Chemicals,

assessing populations potentially exposed to chemicals, it becomes essential to carry out a pilot project to assess the methodologies being employed and the procedures for collection and data analysis.

The main objective of this study is to assess the potentially exposed populations to chemicals, obtaining biological indicators of exposure and information on these through questionnaires.

Biomonitoring will be held with blood and hair source conscripts and blood donors, and with urine and hair source in school. It will be determined the levels of the following substances: Lead (Pb), cadmium (Cd) and mercury (Hg), in blood source and organochlorine pesticide residues, also in this source. In the hair source, it will be considered the following elements: Pb, Cd, Hg, Al, Ni, As, Ba, Sb, Ag, Sn, Bi, Be, U and Th. Samples were selected from 500 donors (adults 18-65 years old), 500

conscripts and 500 schoolchildren aged 8-10 years old. For each participant it will be collected hair, blood or urine samples. A questionnaire will be adapted for each of the studied populations .

The descriptive and inferential analysis of this project are in the final stage of completion, which completion is scheduled for April 2011.

## Upgrading information on vaccines project

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This project, coordinated by the FMUSP Department of Preventive Medicine, was made possible through an agreement between the FFM and the Ministry of Health in late 2007. However, due to delay in release of funds, it only started in late 2008. Its main objective is to perform studies of cost-effectiveness of pneumococcal conjugated vaccine, meningococcal C and hepatitis A conjugated vaccines in order to produce information and knowledge for managers in the National Immunization Program / PNI of the Bureau of Health Surveillance / SVS in the Ministry of Health in order to contribute to decisions about the incorporation of these vaccines in the universal infant immunization program.

Evaluations of the 10-valente pneumococcal conjugated vaccine and C meningococcal conjugated vaccine have been completed and the reports delivered by PNI / Ministry of Health in 2010, the results of these studies have been presented at the 46th Congress of the Brazilian Society of Tropical Medicine (2 oral presentations) and at the 4th Symposium "Advances in Medical Research of the Medical Research Laboratories, HC-FMUSP" (3 posters). The study of pneumococcal vaccine resulted in two articles that have been accepted for publication [1,2]: The article concerning the study of meningococcal C conjugate vaccine was submitted to the publication.

The evaluation of cost-effectiveness of hepatitis A vaccine is under development in collaboration with researchers from the FMUSP Department of Pathology of USP Veterinary Medicine, Federal University of Goias and the Federal University of Pernambuco, and it should be completed by mid-2011 .

There is an ongoing PhD Program in the Graduate Department of Preventive Medicine and a Masters Program in the Graduate Department of Infectious and Parasitic Diseases.

The team participates in the National Institute of Science & Technology in the Technology Assessment in Health CNPq, coordinated by researchers from UFRGS, and is incorporated in the International Network of Centres of Reference in economic evaluations of vaccines (ProVac Network), coordinated by the Pan American Health Organization:

1. Novaes HMD; Sartori AMC; Soares PC. Pneumococcal disease hospitalization rates in Brazil, 2004-2006. *Revista de Saúde Pública*, 2011, *in press*
2. Sartori AMC; Soares PC; Novaes HMD. Cost-effectiveness of introducing the 10-valent pneumococcal vaccine into the universal immunisation of infants in Brazil. *Journal of Epidemiology and Community Health*, 2010, disponível *on line* [PMID: 20884668]

## Clinical Intelligence for Electrical Impedance Tomography

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This project ended in 2010 and it was designed by researchers at the HCFMUSP Laboratory of Pneumology and made possible through an agreement between FFM and FINEP - Study and Project Funding, in late 2005.

Its main objective was to develop new ways of monitoring in intensive care units, involving an imaging technology and in partnership with the national industry, such as:

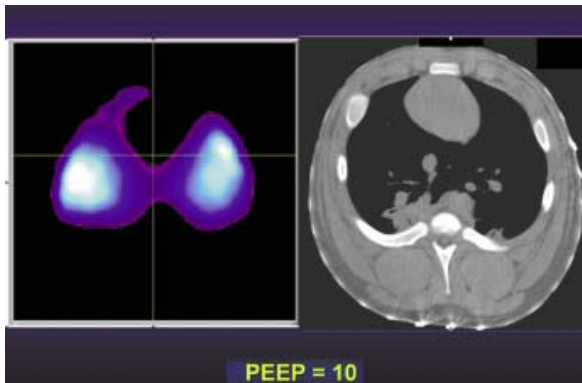
a) software and human-machine interface to lung monitor based on electrical impedance tomography;

b) new applications to the lung monitor, including its potential for perfusion assessment;

c) hardware and software solutions for integrated systems for collecting experimental data and analysis;

d) smart alarms and;

e) experimental ICU for the animals with a stay of 48 to 72 hours for evaluation in prolonged use.



*On the left, lung image full of air captured by the electrical impedance tomography; on the right, the same image captured by computerized tomography.*

All proposed physical targets were achieved:

1) The new user interface, built-in with a "touch-screen" screen, is a major innovation, making it truly a product ready for use by health professionals with little prior training. There is no need for analysis of data through an

attached computer. Everything is done within its own acquisition module, which has four dedicated processors and running in parallel.

2) The development of strapping electrodes and special connectors to meet rigid standards for use in the ICU was completed: a) the cables have become ergonomic and do not cause bedsores or injury to the patient, b) the strap can be placed even in patients in situations critical, which can not be mobilized, c) the strap and cables resist to an electrical defibrillation (in case of possible heart failure), d) all part of the strap in contact with the patient has a disposable low-cost component and waterproof, ensuring sterile conditions.

3) An ECG board was incorporated into the acquisition module, so that the electrocardiogram signals are used to synchronize the images of the tomograph with the heartbeat. Similarly, a control board to a pneumotachograph was developed and integrated into the acquisition module, so that images of the CT scanner can also be synchronized with the mechanical ventilator. This dual sync allowed the study of pulmonary perfusion with unprecedented resolution.

4) A mid-sized ICU for animals for studies of prolonged mechanical ventilation (48-72 hours) was equipped and made effective, making up a training centre for residents in intensive care, as well as for experimental studies involving the use of the tomograph in clinical decision making (integrated with other monitors in the ICU and assisting in the pneumothorax treatment, pulmonary embolism treatment, adjustment of mechanical ventilation, PEEP titration, etc.).

## Development and Validation of Vascular Endoprostheses (Stents) drug releasing

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This project, approved by the Agreement signed between the FFM and FINEP - Study and Project Funding in 2007, is coordinated by the HCFMUSP Catheterization Laboratory and Interventional Cardiology Heart Institute and implemented in partnership with the private sector (Scitech Medical Products Ltda Goiânia-GO) and the State University of Campinas (UNICAMP) aims the development and validation through preclinical testing of releasing coronary stents of bioactive agents.

With a view to self-sufficiency and mastery of the process stages of the pharmacological stents production intends to obtain one or more final pharmacological stent products with an agent already used on the market by foreign industries (eg, paclitaxel or sirolimus), and the development of pharmacological stents or drug combinations have not been used commercially yet by other industries (nitric oxide). It aims to introduce the final product commercially pharmacological stent with conditions of national and international competition. In this context the proposed field of technology implementation and development of drug pharmacological stents and its validation process, preclinical, and an important goal for the national scientific community is especially justified by the potential scope and expansion of treatment for the country's population.

It is currently in the final stage of its implementation. The following accomplishment highlights in 2010 were:

- a) Pre-clinical domain trials that lead to the establishment of technological route validation of coronary stents in Brazil. This competency, restricted to a few centers in the world, is a pioneer and unique in the country and has the potential to increase R & D & I actions in the field of cardiovascular medicine
- b) Standardization of validating testing: coronary implants in experimental animals, histological processing for light microscopy and scanning electron microscopy and imaging techniques such as intracoronary ultrasound and optical coherence tomography.
- c) Investigation conclusion of the performance of experimental stent development with nitric oxide donor coating.
- d) Pre-final Research Performance of experimental stent with sirolimus releasing coating.
- e) Intensification of exchanges between institutions, with sharing of expertise and equipment in a core-facility scheme.

## Retrovirus Epidemiology Donor Study-II (REDS-II) International Component – Blood Centre

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The "Retrovirus Epidemiology Donor Study-II (REDS-II) International Component - Blood Centre" is a research project of the HCFMUSP Department of Hematology funded by a contract between the FFM and the Blood Systems Research Institute, at the end of 2006, whose activities will be continued until September 2011. The study developed three projects:

**PROJECT 1:** Data collection will end in March 2011. The objective of this study is: 1) establish and monitor the prevalence and incidence of HIV in a distinct population of Brazilian blood donors, relating to types of donations (volunteer versus replacement) and demographic and behavioral

characteristics of donors; 2) estimate and monitor the residual risk of HIV transmission and project the impact of new screening technologies, such as the HIV RNA test risk; 3) identify risk factors and other characteristics of donors who could be the basis for the development of new screening procedures or policies of exclusion of donors to enhance blood safety; and 4) track the infection rate of donors with different subtypes and resistant groups to drugs to HIV focusing on analyzing the molecular characteristics of HIV in plasma samples from recently infected donors and donors at varied risks. **PROJECT 2:** It features key factors, motivating donors that impact the safety and feasibility of blood donors in Brazil, but also estimates the

effectiveness of the policy of exclusion of donors in Brazil. This project will involve a large number of people surveyed who have recently donated blood successfully, as well as a collection of samples and interviews with donors who were deferred at the time of donation. The collection of this data will be completed in March 2011.

**PROJECT 3:** This project, which is based on Chagas disease, will develop a retrospective cross-

sectional study, defining the natural history and laboratory correlates of Chagas disease among seropositive donors previously identified using PCR T.cruzi and a quantitative study of antibodies and clinical estimates. The collection of samples of this project was completed in October 2011.

The preliminary data analysis has allowed the publication of six works in international magazines and other 6 are in the submission process.

## **Epidemiological Study "Multicentre Study of Air Pollution and its Effects on Health in Latin America"**

Coordinated by the FMUSP Department of Preventive Medicine, this study, completed in 2010, was initiated in January 2007, through a contract between the National Institute of Public Health and FFM as the goal of using a common analytical protocol to investigate the exposure effects to air pollution on public health in various cities in Latin America.

The idea is to obtain comparable and updated estimates of the effect of pollution on mortality in different age groups and for different reasons, and both local and regional estimates of the impact of pollution on health. Special attention will be given to

examining the effects of pollution in the more vulnerable population subgroups such as children, the elderly and those unfavorable socioeconomic conditions. This project constitutes the first multi-country study on the effects of air pollution in this region and is funded by the Health Effects Institute ([www.healtheffects.org](http://www.healtheffects.org)).

At the present time, it involves researchers from institutions in Brazil (participating cities: São Paulo, Rio de Janeiro and Porto Alegre), Chile (Santiago, Rancagua and Concepcion) and Mexico (Mexico City, Monterrey and Toluca).

## **Immunohistochemical characterization of new antibodies of oncological interest**

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This research, led by HCFMUSP LIM 14 - Research Laboratory in Hepatic Disease, was made possible through a contract signed in 2006 between the FFM and PR & D Biotech S / A and has the support of FINEP - Study and Project Funding and Butantã Foundation.

Its objectives are:

- a) by pathologic review of selected cases, for TMA's making and database preparation in the form of spreadsheets, with all the relevant information to different casuistics;
- b) the selection and marking of areas on the slides and their paraffin blocks for subsequent manufacture of TMA's;

- c) supervision and technical assistance in preparation of the TMA's blocks;
- d) preparation and presentation of seminars on matters related to ongoing research;
- e) analysis and interpretation of immunohistochemical results obtained from case studies prepared in the TMA's, with tabulation of data in suitable sources for further statistical evaluation; and
- f) involvement in the preparation of reports and data consolidation activities, as well as evaluation of the results for publication to periodicals.

These activities were continued in 2010.

## Air quality monitoring in six Brazilian metropolitan areas

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This project, coordinated by the FMUSP Laboratory of Experimental Air Pollution Department of Pathology, was funded by a contract signed in 2010 between the FFM and Controlar S / A. This collaboration focused on supporting technical staff, which provide research, especially in the operation of responsible analytical laboratory for characterizing the inhalable and thin material in atmospheric suspension, sampled in filters.

Its main benefits were:

- a) Support to the operation of analytical laboratory for analysis of filters sampled with inhalable particulate material, considering the processes of gravity, reflectance, X-ray fluorescence and ion chromatography, vital to characterize the exposure of studies of the impact of air pollution on human health and animals in toxicology studies;
- b) Support the development of portable samplers to fine particulate material (PM<sub>2,5</sub>) suitable for use in vehicles (taxi drivers and traffic officers);
- c) Support the development of personal samplers to fine particulate material (PM<sub>2,5</sub>) suitable for use by traffic officers;
- d) Support to scientific production with approval for the publication of articles with the result of the concentration of fine particulate material in major metropolitan areas in Brazil (unpublished), quantifying the sources which participated in this automotive pollution (there was only estimate for São Paulo);
- e) Support the development and review of sampling equipment manuals, providing subsidies for field operators to use equipment in projects;
- f) Support to the field staff training for the use of samplers
- g) Support the transfer of the results of chemical and physical analysis (originally in single user applications) software for laboratory data management (Web and multi-user based) developed for the LPAE;
- h) Support for deployment of field sampling in the metropolitan areas for the expansion of databases of the concentration of PM<sub>2,5</sub> allowing studies that cover longer periods of time, and improve the accuracy of the sources that participate in automotive air pollution, including by fuel type (alcohol, gasoline and diesel);
- i) Support for deployment of field sampling in areas affected by the burning of biomass (sugar cane, charcoal production) and by specific industrial activities (mining, petrochemicals), allowing estimation of the true magnitude of the concentration of fine particulate material in these regions and subsidizing the state and federal environmental agencies providing information for the formulation of environmental policies;
- j) Support to the development of calculation tools that, from the ambient concentrations of air pollution, estimate the impact on health in epidemiological terms of short and long term with its economic valuation;
- k) Support the development of mobile laboratory project devoted to scientific research of the effects of air pollution in humans that is being built in the first quarter of 2011 and in animals;
- l) Support the development of mobile laboratory project devoted to studying the biological mechanisms of action of air pollution on animals which is also being built in the first quarter of 2011;
- m) Promotion of scientific collaboration and partnership development in research between national and international academic institutions;
- n) Support the development of lines of research that investigate the impact of air pollution on an individual basis and not just population, state of the art in the world research.

## G) Clinical Studies

The FFM, supporting the HCFMUSP and the FMUSP has actively participated in the clinical study, whose results are of great interest to the academic community and society in general. The clinical studies under the supervision of teachers of the House, is intended to evaluate the efficacy, tolerability and safety of drugs and research in humans and animals, under the technical-scientific, ethical, constituting in the legislation to the species, research funding, source of funds, investment return, guidelines adequation of the Institutional policy, integration with other sectoral initiatives and interest and convenience for the Public Service.

This work is done in partnership with the HCFMUSP Support Centre for Clinical Research (NAPesq), which was created in early 2005 and connected to the HCFMUSP Clinical Board of Managers. It aims to support researchers, adequate procedures and advising of FMUSP / HC System areas that perform processes of scientific research involving human beings.

It is understood by any clinical research in humans, aiming to discover or verify the pharmacodynamic, pharmacological, clinical and / or other effects of product and / or identify adverse reactions to the product in research with the aim of determine its safety and / or efficacy. Clinical Research, clinical trial or clinical study are the terms used to describe a process of scientific research involving human subjects.



In this context, the FFM has managed, in 2010, about 342 clinical trials approved by the HCFMUSP Ethics Committee for Analysis of Research Projects (CAPPesq) and coordinated by researchers at the FMUSP / HC System.



## H) Institutional Projects

### Preliminary study to the Ipq - HCFMUSP Collaborating Centre for Drug and Alcohol

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This proposal was approved by the National Anti-Drug Bureau – SENAD, in late 2010, with the intervention of the FFM, and it will be developed by the Group of Studies on Alcohol Drugs - IPq-HCFMUSP GREA.

This project presents the proposal of the Collaborating Centre on crack and other drugs from the IPq HCFMUSP Institute of Psychiatry which aims to provide assistance, education and research related to the subject of the use, abuse and addiction to crack, cocaine, alcohol, tobacco and other drugs, establishing a partnership between the IPq and SENAD.

This centre should have a physical area, if possible near the IPq building, located in the FMUSP / HC System. The Collaborating Centre will be developed to an integrative model of care for patients and families in outpatient and hospitalization level, associated with the social reintegration services of high complexity and incorporated into a fully functional structure of research, as is expected from a collaborating centre of excellence adding to this technical training activities in the form of multi-professional residence.

### Project of Strengthening the Study Centre and Maria Cecilia Souto Vidigal Laboratories of Hematology Service

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The concept of Continuing Education is associated to the idea of training and improvement, aiming at the adaptation of the professional who can face a world that changes daily and that requires constant updating. However, the Continuing Education is one of the most important strategies for professionals to ensure their upgrade to new knowledge, methods and work processes from a scientific and technological development that continuously occurs.

Particular importance should be given to distance education as the teaching-learning in Continuing Education, where teachers and professionals are spatially separated but connected, linked by technology, especially telecommunication, such as the Internet. But they can also use the mail, radio, television, video, CD-ROM, telephone, fax and similar technologies.

This proposal was possible through a contract with

the Maria Cecilia Souto Vidigal Foundation - FMCSV in mid-2010, with the intervention of the FFM, it continues the productive relationship established between the field of Hematology and Hemotherapy in Brazil and the role of Maria Cecilia Souto Vidigal Foundation. For a long time, professionals and technicians were trained in the laboratories of the Foundation and made use of its important library, providing important services to different entities for medical and hospital care in Brazil and abroad. In recent years, with the partnership that was signed between the FMCSV and the Department of Hematology and FMUSP Hemotherapy through the Medical School Foundation, the laboratories were provided in lending to the Department of Hematology at Clínicas Hospital, and the library was donated to be attached to the collection of the Department.

### Parliamentary amendment that benefits the HCFMUSP Department of Digestive Surgery

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This project, approved in late 2010, to be developed by the HCFMUSP Department of Digestive Surgery through an agreement signed with the Ministry of Health, with the intervention of the FFM, aims to invest in infrastructure and facilities to enable the use of modern technology in the area of gastrointestinal surgery, which enables support for highly complex procedures and specificity.

The main objective of this project is to improve the

physical and technological infrastructure of the operating rooms and outpatient surgery of the digestive tract and coloproctology, with the purchase of diagnostic and surgical support equipment, computers and printers to make available and consult test results, produce reports, check images, collect all relevant information to the electronic patient record on hospital processes and areas for support.

This restructuring proposal of the operating rooms should provide an increase in number of surgeries performed and triple the number of consultations, transcending from 1,600 surgeries per year (around

1000 of high complexity) to 3,500 in a period of two to three years.

## Infrastructure Modernization Project of research and innovation for health - FMUSP / HC System

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This project, approved in mid-2010, is being developed by the Executive Board of the HCFMUSP Medical Research Laboratories through an agreement signed with FINEP - Study and Project Funding with the intervention of FFM. It is primarily focused on optimizing the existing resources to ensure the development of research in the FMUSP / HC system in order to increase the participation of the institution and its researchers in national and international scene, contributing to the development of strategies defined by the Ministry of Health, especially with regard to the most relevant problems in public health such as trauma, violence, aging, pollution, and heart, vascular and oncology diseases, responsible for more deaths, sequelae

and permanent disability in the population and of great socio-economic impact for the country.

The goal of this project is therefore to continue the implementation of infrastructure project to support research in a rational and optimized way through the setting up of the following new multi-user laboratories: 1) Sequencing of high performance, 2) Increased capacity of animal production of the FMUSP / HC System, 3) Center of Animal Behavior for preclinical research of the FMUSP / HC System, 4) New imaging technologies for structural and functional "in vivo" analysis, 5) Platform to develop new strategies for modulation and reversal of the Multiple Organ Dysfunction, 6) Ease of training in advanced robotic techniques for biomedical research.

## Modernization of Research Infrastructure and Innovation for SUS Health Project

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The 62 laboratory facilities of the Institute of Medical Research Laboratories demonstrate the power system installed at HC FMUSP, which now has 722 doctors and about 120 independent research groups. These groups are associated with the formation of approximately 19% of doctors in the health sector in the country.

The strategy is to provide the establishment of research infrastructure compatible with the level of scientific production generated with international insertion. It will make available a physical infrastructure of reliable, adequate and safe laboratories and create multidisciplinary and collective use with a skilled workforce and meet this growing demand. These multi-user laboratories allow the use of more modern equipment to the largest number of researchers from the system, enabling the use of modern techniques in experimental medicine in a rational manner. Thus, there is optimization of financial and human resources already available in the institution, placing them in conditions of competition for external

funding (national and international agencies), basic biomedical research to the development of high quality.

The purpose of this Agreement, signed with FINEP - Study and Project Funding in late 2008, with the intervention of FFM, is to continue the implementation of the infrastructure project to support research in a rational and optimized manner by performing works for the building of the FMUSP and acquisition of materials and equipment, as well as a system fire detection alarm. There will be three more multi-user laboratories:

- 1) Platform to develop new strategies for modulation and reversal of the Multiple Organ Dysfunction;
- 2) R3 Laboratory of Tissue Culture of Genetically Modified Animals and Generation of Hybridomas and
- 3) Laboratory of Molecular Biomarker Validation.

The Project started in the end of 2010.

## Project "Infrastructure Adequacy in Functional Units of the Urological Clinic of the HCFMUSP "

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The HC-FMUSP Urology Division provides service promotion, health protection and recovery of transplanted kidney and urological patients. In view, the mishaps in public health financing make it impossible an agile and decisive flow of restructuring physical-hospital plans to the gradual increase in the number of treatments and services, the imminent need for adequate infrastructure in the functional units of urological clinic is realized. Therefore, there is the acquisition of material used in cystoscopy, resectoscopy, urethrotomy, laparoscopic or endoscopic surgical kits, which enable diagnosis and improved and resolvable treatment.

The main objective of this project, funded by an agreement signed in late 2008, with the Ministry of Health and the intervention of FFM, is to invest in strengthening the provision of logistic services and health care, that is, investing in improvement Health services that will add a rectified direct attention to the complexities of urological and renal transplant

patients. Concurrently, to further the development of research and scientific studies, as well as health education, contributing to the training of professionals and supported by the scientific production of the social purpose of the Clínicas Hospital, the health institution.

The goals are: a) minimize the waiting for surgical procedures, increasing the resolution in the diagnosis and therapy and agility to check on patient care in inpatients b) reduce the average hospital stay of 12 to 6 days in hospitalization unit; c) allow greater turnover rate of beds, so shortening the postoperative period, allowing an increase in service network. In short, allowing the aggregation of qualified curative care and rehabilitation by performing a post-operative care efficiently and effectively and simultaneously correcting the number of waiting.

## HC-FMUSP Clinical Research Centre

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Coordinated by the Clinical Board of Managers of Clínicas Hospital and approved by the Agreement signed between the FFM and FINEP - Study and Project Funding, at the end of 2005, the goal of the Clinical Research Centre Project of the HC-FMUSP is to optimize existing resources, to ensure the development of HCFMUSP clinical research, through the implementation of the Central Nucleus, which will give support to the areas of the Institutes.

The NAPESQ - Support Center for Clinical Research develops actions aimed at training human resources and technical advice and project funding of clinical research. The Clinical Research Symposium brings together every year, 200 health professionals who share experiences, evaluating the processes of learning and update knowledge. Another important activity aggregates technological evolution: from 2008, the tutorial was available in Clinical Research, a program of distance learning - e-learning - with classes on regulatory subjects and good clinical practices. The NAPESQ started to offer courses for clinical research coordinators, by which it aims to train engineers already working in the FMUSP / HC system. With these actions the NAPESQ's main goal is to encourage the development of clinical research teams of the FMUSP / HC System and program appropriate research practices to the internationally recognized criteria.

It is expected to be created clinical research centers of common use, with specialized personnel and adequate physical infrastructure and appropriate infrastructure for the monitoring of national and international, multicenter or unicenter research protocols and allow to meet the growing demand for Brazilian participation in large clinical centers trials. The research activities in each of the institutes must pass by the Ethics in Research (CEP) of the institution since 1996, shortly after the publication of Resolution 196/96 of the National Health Council since 2002, this committee has received an annual average of one thousand research protocols for evaluation.

Among the changes that have been conducted, it is highlighted the participation of the institution and its researchers in the national and international clinical research, contributing to the development of strategies defined by the Ministry of Health, the integration of different disciplines to improve the quality of clinical research and increase the capacity development of all stages of clinical trials of drugs, procedures, equipment and diagnostic devices.

Another initiative is the creation of national cooperative groups to develop research protocols that address as a priority, the public health policies in the country; the training of professionals. The harmonization of clinical studies was made possible

with the reform and expansion of infrastructure-specific research, and the equipment purchase, installation of offices in the building of the Clínicas Hospital, including classrooms and administrative operational support.

The reform and expansion of the number of offices and rooms of support also included the creation of 10 special beds for patients of research, whose physical fitness area includes 40 beds and 32 consulting rooms exclusively for research and support for monitoring, medication, tests, nursing, files, desks, lounges and meeting rooms. In the Ambulatory Building seven offices were made.

In this context, the Center for Clinical Research of the Central Institute of the Clínicas Hospital is authorized to conduct clinical research, thanks to approval by the Division of AIDS of the National Institute of Health (NIH-USA) to implement the

research protocol entitled "iPrEx - chemoprophylaxis for HIV Prevention in Men, Women Transvestites and Transsexuals".

The Heart Institute (Incor) has been developing intense research activity since its inception, with efficient infrastructure to run both the clinical and experimental research. The aid received from the Public Call will allow to finance part of the reform of the first floor, entirely designed to clinical research.

The Research Center of the University Hospital - USP besides the ELSA project (Longitudinal Study of Adult Health), prospective cohort study that examines risky factors associated with cardiovascular disease and diabetes, supports over 22 clinical research projects in the area of chronic diseases. In its physical area of 650 m<sup>2</sup> a staff team of 75 trained scholars and trainees work in epidemiological studies.

### Support Infrastructure to the FMUSP/HC System Research

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This project, coordinated by the LIMs Executive Board and approved by the Agreement signed between the FFM and FINEP - Study and Project Funding, at the end of 2007, has as its goals: a) optimize existing resources to ensure the development of research in the FMUSP / HC System in order to increase the participation of the institution and its researchers in the national and international scene, contributing to the development of strategies defined by the Ministry of Health; b) facilitate the integration of different research groups in order to improve the quality of research and increase the capacity of developing research projects, c) promote the creation of national corporate groups alongside the development of research protocols, which focus primarily public health policies of the country d) facilitate the transfer of acquired knowledge to care practice, benefiting patients through access to new medicines or diagnostic, prognostic, prophylactic and / or therapeutic procedures.

The 62 laboratory facilities of the Institute of Medical Research Laboratories - LIM demonstrate competence in the installed FMUSP / HC system, which now has 716 doctors and about 120 independent research groups. These groups are associated with the formation of approximately 18% of doctors in the health field of the country. The adopted strategy is to establish laboratories of common use, they can count on skilled labour that can meet this demand.

These multi-user laboratories allow the use of more modern equipment to the largest number of researchers of the FMUSP / HC System, allowing the use of cutting-edge techniques in experimental medicine in a rational manner. Thus, there is the optimization of financial and human resources already available in the institution, placing them in conditions of competition for external resources (national and international agencies), basic to the high quality of biomedical research development. These activities were continued in 2010.

### Research Infrastructure Modernization of the HC-FMUSP (LIMs) Medical Research Laboratories

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Supported by FINEP - Study and Project Funding, with the intervention of the FFM, the Subprojects "Development of genetically modified animals and availability of Embryo Cryopreservation and Storage Technologies " and "Increasing the offer of technologies for digital imaging of biological

specimens ", both linked to the "Research Infrastructure Modernization of the HC-FMUSP (LIMs) Medical Research Laboratories". It started in 2005.



Transforming Cabins before restoration



Transforming Cabins after restoration

This project consists of six sub-projects grouped into two main components. The first component aims at modernizing the physical structure of the building which is most of the laboratory units of LIMs. 39 units located in the FMUSDP Head office were directly benefited by this project, 10 units located in the buildings of the Institute of Tropical Medicine (IMT) and 2 units in the Oscar Freire Institute (IOF). This component aimed at improving the conditions of electricity supply, the emergency circuit and the fire alarm system implementation, so they are provided with modern infrastructure, reliable and compatible with the installed technology

in laboratories and excellence of research developed there. The second component aims at implementing multi-user laboratories, which will meet the identified demand and that will serve all the 62 laboratory units of LIMs.

In 2008, the following activities were implemented: 1) Electrical adequacy works in the FMUSP Head office building. The new entry cabin is working and all new electrical substations have been installed. The three groups of generators, all cabling and distribution boards as well. There is still some electrical adaptation works at the Institute of Tropical Medicine, 2) Implementation of the Centre for Development of Genetically Modified Animals.

In 2009, the works at FMUSP Head office and Oscar Freire Institute electrical adequacy works were completed.

In 2010, after receiving the last installment of the project, the project was revised to adapt the electrical Tropical Medicine Institute for posting notice of the works as well as hiring to the work, together with funds from FAPESP - Foundation for Research in the State of São Paulo and acquire materials to complement the electrical installations of the FMUSP.

## Multiuser Equipment Network Program (PREMIUM).

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Aiming to stimulate research and innovation of the FMUSP / HC system, the Board of directors of the University of Medicine and the Executive Board of the Medical Research Laboratories of Clinicas Hospital, with support from FFM, with allocation of resources of agencies like FAPESP - Foundation for Research in São Paulo and FINEP - Study and Project Funding, implemented the Multiuser Equipment Network Program (PREMIUM). This program creates branches, arranged in the form of a network and provides space in equipment and useful modern technology for not just one but several kinds of Experimental and Clinical Research, and can be used by more than one research group at the same time.

This practice allows the space, equipment, human resources and material optimization and also allowing the contraction of preventive maintenance service, virtually impossible today to be acquired for both the FMUSP / HC as other institutions. Still makes it possible to acquire the latest equipment and its continuous improvement. The following Multiuser Nuclei were implanted :

- 1) Tissue Microarray e Imuno-histoquímica;
- 2) Electronic Microscopy;
- 3) Laser Microdissection;
- 4) Confocal Microscopy;
- 5) Transgenic Animals;
- 6) DNA Sequencing;
- 7) Cell Separation;
- 8) Freezers – 80C and
- 9) Biotechnology.

## Multiuser Nucleus of DNA Sequencing

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Coordinated by the FMUSP Laboratory of Renal Transplant, with support from FFM, the Nucleus is under implementation since 2007 to form the Multiuser Equipment Network Program (PREMIUM). DNA sequencing is an essential and basic tool of molecular biology used in basic and applied research. The development of new technologies, automation and development of software for sequence analysis allows the detection of mutations, polymorphisms (microsatellites, SNPs),

The services provided by multiuser nuclei are made available on the Medical Research Laboratories pages and the requests are made by the web, forms, guidelines and rules of procedures are available on the page ([www.direxlim.fm.usp.br](http://www.direxlim.fm.usp.br) - multiuser network). In addition to the Multiuser Nucleus is already deployed in the implementation phase of the following centers:

- 10) Animal images via micro PET/CT;
- 11) Echocardiographic imaging system with high resolution for small rodents;
- 12) Storage and rastering of biological long-term samples and
- 13) Microarray.

The decision to create a park of equipments in a network values existing initiatives in establishing and optimizing human and financial resources available. At present it is essential that this consolidation

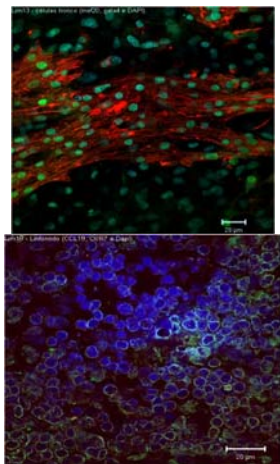
- 1) create appropriate conditions in the workplace for the prevention of infection;
- 2) ensure the connectivity between different laboratory units and multiuser network equipment;
- 3) consolidate themselves within the standards and legislation in the area of cell and molecular biology applied to medicine;
- 4) create conditions for the generation and dissemination of knowledge in the priority areas for the Ministry of Health and SUS;
- 5) demonstrate that all links in the chain are represented in the system, stimulating innovation in the biomedical sciences and fostering the creation of partnerships with the productive sector.

DNA methylation, or typing of bacteria and viruses on a large scale.

The DNA sequencing service was organized with the objective of providing for researchers of the FMUSP / HC System (or other institutions) access to the technique of DNA sequencing with quality and low cost. The service has 2 sequencers MegaBACE DNA Analysis System 1000 with a 96 samples for analysis of every three hours and reading of 500-800 bases per sample. These activities were continued in 2010.

## Multiuser Nucleus of Confocal Microscopy

Coordinated by the HCFMUSP Laboratory of Vascular Biology (InCor), with support from FFM, the Nucleus was created in 2007 to form the Multiuser Equipment Network Program (PREMIUM).



Confocal images through microscope

The nucleus of confocal / fluorescence FMUSP / HC Multi-User System Network is a centre that aims to provide services using fluorescence microscopy by confocal module for all researchers of the University of Medicine and the Clínicas Hospital, as well as other teaching and research entities.

The equipment and its accessories were obtained through FAPESP Multiuser Project (n. 04/08908-2) being thus open through specific usage rules. It is offered a Confocal microscope with laser scanning, 3D Confocal microscopy, total reflection through fluorescence, Laser UV Confocal microscopy, Differential Interference Contrast (DIC) and common microscopy fluorescence based inverted. These activities were continued in 2010.

## Multiuser Nucleus of laser microdissection

Coordinated by the FMUSP Department of Pathology, with support from FFM, the Nucleus was created in 2007 to form the Multiuser Equipment Network Program (PREMIUM).

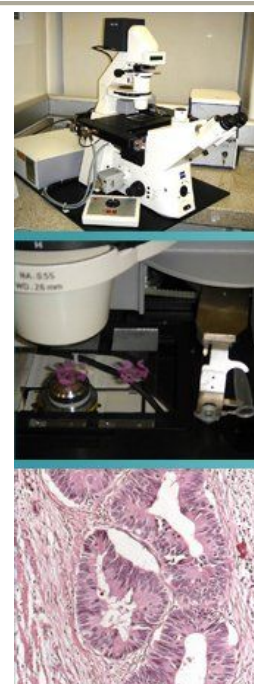
The laser microdissection technique developed in 1996 by researchers from the US *National Cancer Institute*, it became one extremely important tool into biological research, potentially broadening the use of Molecular Biology existing techniques.

Through this technique it is possible to obtain homogeneous cellular material of tissue or mixed cytology samples. The extracted material can be previously fixed in paraffin (archive material) or frozen. Groups of similar cells, multicellular structures, or even single cells and chromosomes can be isolated.

The obtained material can be used in *downstream* technique series such as gene expression (RNA or DNA), Western blotting and proteomic techniques, among others.

In 2006, through the assistance from FAPESP - Foundation for Research in São Paulo, the Department of Pathology acquired the Microbeam System IP Z PALM system, using the laser microdissection system coupled to a catapult pressure system. This equipment is available to the community of the FMUSP / HC System and other researchers interested in incorporating this technique in their research.

These activities were continued in 2010.



## Multiuser Nucleus of Transgenic Animal Production

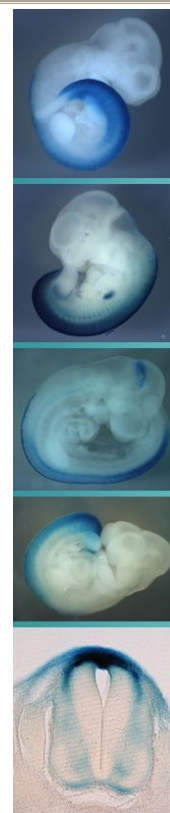
Coordinated by the HCFMUSP Laboratory of Genetics and Molecular Cardiology (InCor), with support from FFM, it was created in 2007 to form the Multiuser Equipment Network Program (PREMiUM).

This unit aims to provide internal and external users the opportunity to manipulate the murine genome. The ability to manipulate the genome has been critical to address biological problems realistically in the natural context of a living animal and it is therefore fundamental technology for medical and biological research. Services of pro-nuclear microinjection, the injection of murine embryonic stem cells into blastocysts and mice by injection of lentiviral transfection in sub vitelline space will be offered, thus enabling the generation of transgenic animals and knockouts.

Transgenic Unit will also develop models of genetically modified animals useful for a wide range of researchers, such as transgenic animals that express fluorescent proteins in an ubiquitous way. Transgenic mice with ubiquitous eGFP +expression are now available and can be obtained after contact.

This unit is being implemented and has been started the process of purchasing equipment and training of staff. The Transgenic Unit is committed to offering a professional and friendly service, offering the possibility of providing consulting services to better achieve the designed experiments.

These activities were continued in 2010.



## Tissue Microarray & Imuno-histoquímica Multiuser Nucleus

Coordinated by the HCFMUSP Laboratory of Hepatic Pathology, with support from FFM, the Nucleus was created in 2007 to form the Multiuser Equipment Network Program (PREMiUM). This multi-user activity, available to researchers of the FMUSP / HC System, including the making of Tissue Microarrays (TMAs) and / or reactions performed immunohistochemistry on previously approved projects.

Besides the remarkable cost savings of reagents, the procedure allows multiple research in very well defined areas in the same neoplasm, whose morphological details are already registered, ensuring detailed correlations of types and degrees of injury with the expression of molecules (and not just the analysis of the "injury group").

Its use in Molecular Pathology research currently grows so steep, due to the ease of comparing the expression of proteins and nucleic acids in hundreds of tissue samples in only one slide.

This strategy results in significant cost-cutting because of the huge reduction in technical time and the amount of reagents. It also allows the increase of consistency of measurements and semi-quantification of the immunohistochemical reactions results and other molecular researches "in situ", because all tests are being done under identical conditions in the same reaction, allowing further studies in duplicate or triplicate, previously unviable.

These activities were continued in 2010.





## Multiuser Nucleus of Electronic Microscopy

Coordinated by the FMUSP Laboratory of Cell Biology, with support from FFM, the Nucleus was created in 2007 to form the Multiuser Equipment Network Program (PREMiUM). Its main objectives are: 1) Be a centre of interaction between HCFMUSP researchers in search of the application of techniques and interpretation of data obtained in light and electron microscopy to solve biological problems, 2) collaborate to the growth of multidisciplinary research within the HC-FMUSP, through partnerships and training of young researchers in contact with specialists, technicians, doctors and teachers, who belong to the HC-FMUSP staff. The combination of technical training and scientific supervision promoted by the industry should have a multiplier effect within the institution. These activities were continued in 2010.

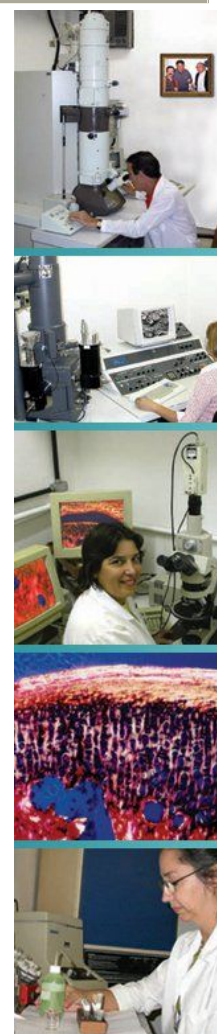
General services: collaborating at all stages of processing the material for light and electron microscopy, from collection to the final observation and data analysis, applying correct procedures in processing the material in order to obtain properly oriented cuts and reliable preparing for both histopathological diagnosis as well as morphometric study performance.

Electronic microscopy: proceedings of the critical point drying, coated with gold, criosubstitution, ultramicrotomy and crioultramicrotomia. Assistance for observation of material in electron microscopy and interpretation of results in ultrastructural images.

Light Microscopy: processing for paraffin embedding (cuts up to 4  $\mu\text{m}$ ) and histoiresin (cuts to 1 $\mu\text{m}$ ), obtaining serial cuts and semi-serial: research application of several classic and special histopathological methods, such as the picrosirius-polarization (for the collagen study) and Resorcina-Ficsina with and without previous oxidation (to study of the elastic system).

Morphometric Studies: experimental design specialists guide the application of stereological methods for morphometric studies in biological material, both light and electronic microscopy.

Imaging Documentation: Documentation quality of the material of light and electronic microscopy is guaranteed by the specialized and conventional digital images treatment with revelation and expansion for electronic micrographs.



## Student Financial Assistance Program - AFINAL

Since 2007, a committee formed by the representatives of the FMUSP Board, HCFMUSP, the FFM, the Committee of Undergraduate Studies, the FMUSP Alumni Association, CEDEM Tutoring Program, the student representatives of the Casa do Estudante, the Ethics Committee, FMUSP Academic Advisor and courses of Speech Therapy, Physiotherapy and Occupational Therapy develop the Student Financial Assistance Program (AFINAL), which financially assists undergraduate students to contribute to a better use of their studies.

The annual selection process for obtaining a scholarship is made by the USP Coordination of Social Assistance (COSEAS), which receives entries

from students and makes the selection by the socio-economic profile, similar in manner and values to the Auxilio-FAPESP. In general, 58 scholarships are given, and FFM is accounted for 10 of them, while the remainder is obtained by other sources, such as parents of current and former students, all contacted by the committee.



*FMUSP students in a difficult financial situation can stay at Casa do Estudante and receive a subsidy from AFINAL project*

The initiative came after many graduate students with financial difficulties of the School tried to get help for the cost of transport, materials and small daily expenses. The college offers housing in the

Casa do Estudante with individual rooms and daily meals. Students use much of the money to buy food and courseware, but they also reserve an amount of money to help their families.

## Transfer of technology for development, deployment and implementation of Hospital Management System, in favor of expanding the SUS / SP operational capacity - ok

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This project is the result of an agreement between the FFM and the State Bureau of Health in April 2005. Coordinated by the Department of Technology, FFM aims at the combination of efforts aimed at technology, technical and material transfer resources for the development, deployment and implementation of the Hospital Management System and the scope for managerial reorganization, improvement and the Operating System capacity expansion of the SUS / SP.

In summary, in the year 2010, the activities included in projects presented the following results:

1. SI-3 Maintenance: After implantation in Emilio Ribas and CRT-AIDS Hospitals, the SI-3 Application is maintained and customized within the needs of each installation.
2. SES/SP – GIS Computerization: Designed to enable the Group Information and Health Technology, in order to maintain the infrastructure to meet the specific demands of the State Bureau of Health of São Paulo. The main objectives were: Create a Framework; Technical Training Team, Maintenance of the following systems: Monitoring of blood centers (MSH), Assessment for managers from Paulista Institute of Geriatrics and Gerontology (IPGG), Distribution of Thalidomide System; Influenza A (H1N1) Data Management; Anti-Smoking Law Management; Distribution of Prostheses and Method of Movement (OPM); Health Portal; Legal Control System (SCJ); Intragov Health System; Evaluation System of Teaching Hospitals (SAAHE); Mapping Victims of Domestic

and Sexual Violence (MAPVIODS); System of Sanitary Surveillance (SIVISA); pact of Integrated Plan (IPP) and other internal systems for managing the SES / SP.

3. SES/SP – CTX Computerization: This project encompasses the development of: a) Web Transplant System, which was developed from the need to manage the logistics and distribution of organs quickly and include the direct interaction of histocompatibility laboratories, transplant teams, notifying hospitals and central of transplants. b) Inviting Jovens Acolhedores System, a program aimed at involving students in the admission of users of Public Health Units, in order to invest in the process of the Humanization of Assistance.
4. MEDEX Implementation Development: This project aims to ensure the necessary resources for continued development and implementation of new features in the Program of Special Dispensation of Special Medicines (MEDEX) maintained by the State of São Paulo. In 2010, studies for the application development in Web version started.
5. Medicine Project - Lawsuit: This project aims to provide medication to patients who have the supply guaranteed by Lawsuit.
6. HCFMUSP System Maintenance: This project has a minimal infrastructure to meet demands related to the operation of enterprise systems in use by HCFMUSP and is a reference for hospital information systems for the SES and the State of São Paulo.

## HCFMUSP Urology Surgical Centre Reform for development of study called "Establishment of guidelines in Brazil for the surgical treatment of localized prostate cancer"

This proposal, through a contract with the Alfa Group, in late 2010, with the intervention of FFM, aims to equip the Urology Surgical Centre in order to develop the study entitled "Establishment of guidelines in Brazil for the surgical treatment of localized cancer prostate", which aims to evaluate

the current reality of radical prostastectomy techniques regarding efficiency and cost-benefit.

The obtained data will allow to be adopted in our country public policies that protect patients with localized prostate cancer and at the same time, it maintains the resources for health.

# 2010 FFM main suppliers

In 2010, FFM main suppliers were (in alphabetical order):

## 2010 Main Suppliers

A TELECOM S.A  
ALCON LABORATORIOS DO BRASIL LTDA  
ANSETT TECNOLOGIA E ENGENHARIA S/A  
ASTRAZENECA DO BRASIL LTDA.  
AXN CONSTRUÇÕES E PARTICIPAÇÕES LTDA  
BAXTER HOSPITALAR LTDA.  
BELFORT SEGURANÇA DE BENS E VALORES LTDA  
BOLANHO ARQUITETURA CONSTRUÇÃO E RESTAURAÇÃO LIMITADA  
BONE SURGICAL EQUIPAMENTOS MEDICOS LTDA.  
BOSTON SCIENTIFIC DO BRASIL LTDA  
CARL ZEISS DO BRASIL LTDA  
CENTRO SANEAMENTO E SERV. AVANÇADOS LTDA  
CLIMAPRESS TEC. EM SIST. AR COND.LTDA  
COMPANHIA BRAS DE SOLUÇÕES E SERV - CBSS  
CONCREJATO SERVS.TÉC.ENGENHARIA S/A  
CONSTRUBASE ENGENHARIA LTDA.  
CONSTRUCLIMA ENGENHARIA E INSTAL. LTDA  
CONSTRUTORA PILLASTER LTDA  
CUSHMAN & WAKEFIELD CONSULTORIA IMOBILIARIA LTDA  
E.TAMUSSINO & CIA LTDA.  
EIKO ENGENHARIA E INSTALAÇÕES LTDA  
ELEKTA LIMITED  
ELI LILLY DO BRASIL LTDA.  
ENGEFORM CONSTRUÇÕES E COM. LTDA  
GE MEDICAL SYSTEMS  
GE MEDICAL SYSTEMS ULTRASOUND AND PRIMAR  
GENERAL ELECTRIC COMPANY  
GOCIL SERVIÇOS DE VIGILÂNCIA E SEGURANÇA LTDA.  
H. STRATTNER & CIA LTDA  
HERSA ENGENHARIA E SERVIÇOS LTDA.  
HOSP LOG COM.DE PRODUTOS HOSPITALARES LTDA  
IMPLAMED IMPLANTES ESP.COM.IMP EXP. LTDA  
INFORMOV LTDA  
M & S CONSTRUÇÕES E ENGENHARIA LTDA  
M.B.OSTEOS COM.IMP.MATERIAL MÉDICO LTDA  
MAGI CLEAN SÃO PAULO ASSEIO E CONSERVAÇÃO DE IMÓV EIS LTDA  
MB SURGICAL COMÉRCIO E IMPORTAÇÃO LTDA  
MEDTRONIC COMERCIAL LTDA  
MÉTODO ENGENHARIA S/A  
MOGAMI IMPORTAÇÃO E EXPORTAÇÃO LTDA.  
NEXUS ENGENHARIA E CONSTRUÇÕES LTDA  
NOVARTIS BIOCÊNCIAS S/A  
OLYMPUS OPTICAL DO BRASIL LTDA.  
ORTOCIR ORTOPIEDIA CIRURGIA LTDA.  
OSTEOCAMP IMPL.E MAT.CIRÚRGICOS LTDA-ME  
OTTO BOCK DO BRASIL TEC.ORTOP.LTDA  
PHILIPS MEDICAL SYSTEMS EXPORT, INC.  
PHONAK DO BRASIL - SISTEMAS AUD. LTDA  
POLITEC IMPORTAÇÃO E COMERCIO LTDA.  
PRODUTOS ROCHE QUIM. FARMACÊUTICOS S.A.  
SAVON IND. COM. IMP. E EXP. LTDA  
SERRA LESTEIND.COM.IMP.EXP.LTDA  
SODEXHO DO BRASIL COMERCIAL LTDA.  
SYDEL INSTALAÇÕES ELETRONICAS LTDA  
TECHNICARE SOC.TEC.MAT.HOSP.LTDA ME  
THL SERVIÇOS LTDA

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# 2010 FFM Annual Report

## Realization

Fundação Faculdade de Medicina

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Prof. Dr. Flavio Fava de Moraes

## Vice-General Director

Prof. Dr. Yassuhiko Okay

## Coordenation

Project and Research General Management

## Research, Elaboration, Graphic Project and Texts

Irene Faias

## Photos

FFM file  
FFM Newspaper  
FMUSP Clínicas Hospital Collection  
USP University of Medicine Collection

The information contained in this report was provided by all areas of the FFM and by the coordinators of the projects described herein.

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