The President’s Message

This publication intends to inform society about the accomplishments of the Oswaldo Cruz Foundation (Fiocruz) between 2001 and 2004. I had the honor and the enormous pleasure of having guided this institution for the past four years and having built (together with my fellow vice-presidents, with the board of directors and with other directors and public officials of Fiocruz) a small part of the noble, admirable and honored history of the Foundation.

It was wonderful to see the publication of Fiocruz’s statute in the Federal Official Journal, a step which strengthens the Foundation’s internal democracy, which Sergio Arouca initiated in 1985. Having received the Unesco Science Prize in 2002 has filled us with the enthusiasm to continue our intense work in research and development. The advancements in the area of drugs, vaccines and diagnostic reagents can be seen in the increasing production of these products and in the consolidation of the Technological Vaccine Complex, in the Manguinhos campus, and of the Technological Drug Complex, in the industrial complex of Jacarepaguá.

We celebrated the implementation of hundreds of projects in the Program of Support for Strategic Research in Health (PAPES III), in the Program for Technological Development of Health Products (PDTIS) and in the Program for Development and Technological Innovation in Public Health (PDTSP). The multiplication of grants for visiting researchers and undergraduate internships (scientific initiation), the patents registered in the four-year period and the sustained increase in the number of papers published in the best scientific journals in the country and abroad are also worthy of mention.
In the last four years, Fiocruz has doubled the number of graduate programs and enrollments. We have gone from six master’s and six doctor’s degree programs to 13 and 12 respectively, which, including the vocational master’s degree programs, total 1,100 enrolled students. In 2003, the institution completed its 2,000th graduate thesis. Other education programs also improved both quantitatively and qualitatively. We added an expressive array of distance leaning courses to our vocational high-school and graduate education programs, which already included on-site update courses, improvement courses, specialization courses and residencies. All of this confirms that Fiocruz is today the largest non-university institution in training human resources for health and science and technology in health in Brazil. It is also among the largest in Latin America.

Brazil presently has one of the best epidemiological diagnosis networks of the world, in which around 25 of Fiocruz’s laboratories actively participate. The assistance services rendered by the Evandro Chagas Clinical Research Institute (Ipec), a reference center on infectious and parasitic diseases, and by the Fernandes Figueira Institute (IFF), a reference center on maternal and child health and considered a Child-Friendly Hospital, should also be mentioned.

It is necessary to stress that none of Fiocruz’s substantial accomplishments would have been achieved without the strong change in the model of administration that was carried out. Today we are a goal-oriented institution with strategic planning and increased managerial efficiency achieved through both more decentralization and control. Our labor administration policy stresses the professionals’ participation and emphasizes their value and continued training.

We hope these results are an encouragement to move forward. We begin a new term with the joy of having completed one step, but also aware of the responsibility of achieving, with everyone’s support, what the Pluriannual Plan for 2005-2008 considers to be essential for Fiocruz, the institution that has been serving the Brazilian society for 105 years.

Paulo Marchiori Buss
President of Fiocruz

Rio de Janeiro, May 25, 2005
(Fiocruz’s 105th anniversary)
SUMMARY

Relevant Facts on Fiocruz’s 2001–2004 Administration

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   Research and Development
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   Encouraging Strategic Research and Technology Development in Health
   Program of Support for Strategic Research in Health (Papes)
   Program for Technological Development of Health Products (PDTIS)
   Program for Development and Technological Innovation in Public Health (PDTSP)
   Technology Management
   Ongoing Projects: The Future

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   Vocational Master’s Degrees
   Other Education Levels
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   Distance Learning
   Other Educational Dimensions of Fiocruz

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   Production
   Technology Development
   Strategic Partnerships
   Immunobiologics (vaccines and diagnostic kits)
   Laboratory Animals
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Reference Laboratories in Epidemiological Surveillance
Reference Laboratories in Sanitary Surveillance
Environmental Surveillance
Health Care
Specialized Care
Basic Care

5. Strengthening Public Participation to Fortify Citizenship

Information for Education, Science, Health and Society
Social Communication
Scientific Collections

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Strategic Administration
Labor Administration
Administration of Budgetary and Financial Resources
The institution’s infrastructure

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Social Projects

8. Appendix

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Presidency of Fiocruz
Fiocruz’s Units
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The Federal Government promulgates a decree approving the Fiocruz Statute, after 15 years of claims.

Fiocruz is awarded the Unesco Science Prize in 2002.

The Program for Technological Development of Health Products (PDTIS) (which includes networks for the innovation of vaccines, diagnostic kits, drugs and proteome and genome science) and the Program of Development and Technological Innovation in Public Health (PDTSP) (with networks for the innovation of methodologies and procedures on public health) are created.

Six new master’s and doctor’s degree programs are created, doubling the number of students.

More than a thousand graduate students are actively enrolled and the 2,000th thesis is submitted.

A containment level 3 laboratory (CL3) is built in the Aggeu Magalhães Research Center (CPqAM), in Recife, the first of its kind in the state of Pernambuco, and becomes part of the national network recently built by the Ministry of Health.

The Joaquim Venâncio Polytechnic Health School (EPSJV) is granted the title World Health Organization Collaborating Center, becomes the head office of the Technical Secretariat of the Network of Vocational Health Schools of the country and inaugurates its new building in the Manguinhos campus.

A new industrial complex is acquired for the Drug Technology Institute (Farmanguinhos) in the neighborhood of Jacarepaguá, in Rio de Janeiro, and the Technological Drug Complex, which will represent a fivefold increase in the production of Fiocruz and further promote the research and development of new drugs.
Fiocruz becomes part of the Popular Pharmacy Program, building units and making drugs available at low-costs (80% less expensive on average) for the Brazilian population.

The Fiocruz for You program successively beats its records on the number of immunized children in the country: in the program’s last edition, in 2004, the Foundation received 50 thousand visitors and around six thousand children were vaccinated.

Fiocruz officially becomes part of the National Network of Laboratories for the Support of Epidemiological Surveillance: 23 laboratories of the institution are registered for 20 different diseases and syndromes.

The Charles Mérieux Center for the Production of Bacterial Antigens (CPAB) was inaugurated in the Immunobiological Technology Institute (Biomanguinhos) and the construction of the building for the Center for Processing Viral Antigens (CPAV) was finished. Both centers will allow the production of Brazilian vaccines used in the National Immunization Program to significantly increase.

Fiocruz was invited by the Pasteur Institute, in France, to be part of the Réseau Pasteur network, a global network in health research.

The largest civil service exam in the history of the institution was carried out, opening 330 positions.

The Program of Professional Training for Institutional Development is implemented, providing around five thousand opportunities in training and education for Fiocruz’s employees.

The government’s debts included in the Plano Bresser are paid and significant improvements are implemented for career development in Science and Technology, which included leveling in 50% the bonus for performance in scientific and technological activities (GDACT) and percentage increases for Masters, Doctors and specialists.
Research and Development Activities at Fiocruz

Research and development activities at Fiocruz follow the guidelines of the National Policies of Health, Science, Technology and Innovation in Health. In order to respond to the major sanitary problems and problems concerning health systems and services in the country, the Foundation’s research and development activities are directed towards the following areas:

a) Biology and biomedicine – Studies on endemic diseases and on how to control them nationally and regionally are conducted. Technical advancements are a priority, such as in the case of stem-cell therapy, bioinformatics and the genome of parasites. Among the diseases studied are Chagas disease, leishmaniasis, malaria, schistosomiasis, Aids, cholera, leprosy, filariasis, viral hepatitis, dengue fever and tuberculosis.

b) Clinical areas – Activities are directed toward diseases with high social impact in the Brazilian epidemiological scenario, such as sexually transmitted diseases/Aids, tuberculosis, leprosy, Chagas disease and other endemic diseases. Clinical research on women’s, child and adolescent health are also very relevant. Research activities are connected to graduate education programs and are characterized by the relationship with patients in their respective social and environmental contexts, focusing on the demands of the health sector.

c) Collective health – Studies on the general health condition of the population; on interventions to prevent diseases, promote health and improve health conditions; on health epidemiology and surveillance; on planning, organizing and evaluating health systems and services; on environmental health; on worker health; and on information and education in health are conducted in order to facilitate the improvement of the Unified Health System (SUS).

d) Professional education in health – Research on education and labor is conducted, especially concerning secondary and elementary school level professionals that work for the Unified Health System.
e) **History of health and biomedical sciences** – Research is conducted on history and sociology of science and culture; history of health policies, institutions and professions; history of diseases; policies for Science and Technology; science dissemination; and education in science.

f) **Technological development of strategic input products** – As to immunobiologics, the focus is on improving the process of production of common vaccines and on the development of new conjugated vaccines. As to drugs, the priorities have been new formulations, synthetic drugs and phytotherapeutic products. Regarding diagnostic reagents, the development of test kits for HIV, dengue fever, leptospirosis and leishmaniasis should be mentioned. Laboratory animals are used in animal behavior and sanitary and genetic control studies, which includes maintaining transgenic lineages, producing specific pathogen-free (SPF) animals and cryopreservation of embryos.

**Research areas, from A to Z**

- Administration of science and technology in health
- Allergy
- Bacterial and viral gastroenteritis
- Biodiversity
- Bioethics
- Biology of vectors of infectious agents
- Biosafety
- Cardiovascular diseases
- Chronobiology
- Clinical research
- Degenerative diseases
- Development of drugs, medications and diagnostic reagents
- Digestive system diseases
- Drug addiction
- Dysontogenesis
- Education in health
- Emerging and reemerging diseases
- Environment, ecology and health
- Environmental health and sanitation
- Epidemiology
- Equity
- Experimental models of diseases
- Fish parasitic infections
- Flaccid paralysis
- Forensic entomology
- Fungi ecology and pathogenicity
- General and applied virology
- General medicine
- Health and labor
- Health and space
- Health policies
- Health promotion and disease prevention
- History and sociology of science and health
- History, health and science
- Human and medical genetics
- Human intoxications
- Immunity and inflammation
- Immunology and cellular biology
- Infectious and parasitic diseases
- Inflammation due to bacteria
- Inflammatory processes
- Information and communication in health
- Information in health and in science and technology
- Mechanisms of pathogenicity
- Medical mycology
- Methodologies for diagnosis
- Microbiology
- Molecular and genetic epidemiology in health
- Molecular biology
- Molecular parasitology
- Natural products
- Neglected diseases
- Neuroscience and behavior
- Nosocomial infections
- Nutrition
- Obstetric and pediatric nursing
- Paleopathology and paleoparasitology
- Pathogenicity of bacteria
- Pharmacology
- Planning and administration in health
- Psychology of human development
- Public policies, planning and administration in health
- Respiratory infections
- Sexually transmitted diseases
- Sociology, anthropology, philosophy and health
- Stress and psychosomatic problems
- Surveillance in health
- Vector control
- Vector parasitology and entomology
- Violence and health
- Zoonoses
The Evolution of Fiocruz’s Research Results

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</table>

Evolution of Total Number of Publications

![Graph showing the evolution of total number of publications from 2001 to 2004.]

The expansion of Fiocruz’s scientific production can be demonstrated through the increase in publications over the last four years.

Fiocruz employs a specific strategy in order to improve human resources in research. Despite its expressive research staff with master’s and doctor’s degrees, the Foundation also opens new lines of work and identifies new talents through the Visiting Researchers Program. This program is funded by Fiocruz through partnerships with research development agencies, such as the National Council for Scientific and Technological Development (CNPq), the Rio de Janeiro Research Foundation (Faperj) and other institutions of the state of Rio de Janeiro.

With CNPq, Fiocruz maintains an average of 60 visiting researchers. In late 2004, six professionals dedicated to technological and industrial development, six professionals devoted to regional and scientific development, 47 doctors and one specialist worked at Fiocruz by means of the program. Faperj, in turn, helps Fiocruz keep another 62 visiting researchers in the institution: 40 with doctor’s degrees and 22 with master’s degrees.

As to the Institutional Program of Scientific Initiation Grants (Pibic), Fiocruz has completely achieved the objective determined for 2004. Through this program,
from August 2003 to July 2004, CNPq awarded 176 students with scientific initiation grants (undergraduate internships) and another 60 awarded by Fiocruz. For 2004 and 2005, Fiocruz has increased to 80 the number of grants under its responsibility. Fiocruz also holds around 120 scientific initiation grants from development agencies other than CNPq.

Between 2001 and 2004, all four scheduled Annual Scientific Initiation Meetings were very successfully carried out, as well as the 3rd and 4th Biennial Research Fairs, in 2002 and 2004. The event is an opportunity for reflecting upon the knowledge that is being generated and its effect on society. It is a way of informing the population about the institution’s activities, as a retribution for the investments received to finance research. Around 700 studies were presented in the 4th Biennial Fair.

As to research and scientific development at Fiocruz, the Ethics Commission on Animal Research and Use (Ceua) should be mentioned. Between 2001 and 2004, 234 projects were submitted to Ceua, of which 139 were approved; 42 were archived, cancelled or withdrawn; and 53 are still being analyzed.
Encouraging Strategic Research and the Development of Technology in Health

The fact that Fiocruz integrates research, technology development, the manufacture of product inputs and graduate and vocational multiprofessional education allows it to implement actions in health that significantly helps in responding to the needs of the society. In the National Innovation System, it includes the development and manufacturing of new therapeutic and diagnostic products, as well as the creation and validation of methodologies and processes that strengthen and humanize the Unified Health System (SUS).

This synergy between different activities facilitates not only the increase in the amount of knowledge on health promotion and on disease control but also the creation of new employment positions, which, in turn, moves the economy. Moreover, the production of strategic product inputs results in a more adequate response to the problems of the Brazilian health system. Therefore, the following programs to encourage research and technological development were either created or strengthened:

Program of Support for Strategic Research in Health (Papes)

Created in 1993, Papes has the objective of supporting, in two-year periods, research projects at Fiocruz, stimulating an interdisciplinary approach and the interaction between the Foundation’s units. Projects are selected by their scientific merit and relevance in solving public health issues. The program’s third edition (Papes III), carried out between May 2002 and December 2004, financed 122 projects: 66 type A projects (costing around 16 thousand dollars a year or less) and 56 type B projects (costing around 4 thousand dollars a year or less, for researchers with less than five years of experience). Papes III had a R$6 million budget for the years 2002, 2003 and 2004.

The following are found among the main areas of research of Papes:
- Epidemiology of leptospirosis
- Physiopathology, immunity and transmission of leishmaniasis
- Genetics and ecology of T. cruzi
- Genetics, epidemiology and pathogenicity of HIV/AIDS
- Molecular biology and environmental control in parasitology
- Health inequalities
- Molecular biology, diagnosis and treatment of mycobacterial infections
- Health and environment
- Clinical research in neonatology
- Viral and non-viral hepatitis
- Antigen expression models for new vaccines
- Paleoparasitology
Program for Technological Development of Health Products (PDTIS)

Created in 2002, PDTIS is committed to innovation, which is considered to be a short and mid-term solution for important health demands of the population. PDTIS aims at developing new health input products and improve the already existing ones. The program has stimulated the establishment of cooperative networks, thus maximizing the experiences of professionals involved, as well as optimizing human and financial resources. PDTIS currently undertakes 73 projects, which involve 95 laboratories of nine different units of the Foundation, besides external collaborators. The program has produced 65 patent submissions, 17 in Brazil and 48 abroad. It was already granted one patent in the country and 20 abroad. PDTIS’s administrators meet periodically to discuss and analyze quality, budget and technology issues. The 1st PDTIS Week took place in 2004 and offered specific workshops for each one of the networks comprised in the program.

PDTIS has invested in the training of human resources, offering courses on project management and on Two-Dimensional Electrophoresis, Elispot and Phage Display platforms. The program is presently responsible for 48 grants for researchers and technologists. In 2004, with an investment of 4.2 million dollars, 51 projects were carried out in the areas of Medications, Vaccines, Genomics and Proteomics and Products for Diagnosis.

There is also investment in Good Laboratory Practices, focusing on standardizing project data registries; standardizing and identifying reagents, solutions and samples; and assuring that data and samples can be retraced and that only previously evaluated instruments and equipment are used.

As to genomics, the sequencing of the BCG vaccine agent (together with the Ataulpho de Paiva Foundation) was started in 2004 and is planned to be finished in 2005. Fiocruz’s production units (Farmanguinhos and Biomanguinhos) conclude the technological development program and are described on another chapter.

### Number of projects and research groups in PDTIS in 2004 divided by area

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<td>Network of Vaccine</td>
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<td>Network of Genomics and Proteomics</td>
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<td>Network of Products for Diagnosis</td>
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Summary of PDTIS’s patents

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<td>Total</td>
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**Patents provide an idea of the results of the work carried out in the four networks of PDTIS.**

In order to stimulate the training of external human resources and to strengthen the program, in 2004, 32 long-term RHAE (Human Resources for Strategic Support) grants were awarded to six undergraduate professionals (for technological and industrial development) and 25 either undergraduate or vocational secondary level students (for technological and industrial initiation). This initiation will generate future demands for the vocational master’s degree, since it prepares students for the area of technology development.

**Program for Development and Technological Innovation in Public Health (PDTSP)**

The objective of the program is to stimulate research and the development of methodologies and processes that provide solutions for the major public health problems. The goal is to foster the adoption of new clinical protocols, policies and tools that both improve the performance of the health system and assist the decision-making on incorporating these new technologies on to the sector.

PDTSP started off creating two networks for two current problems (Dengue Fever and Water Resources), with a total of 46 projects.

The PDTSP-Dengue Fever network is comprised of four subnetworks: clinical and laboratorial characterization of different forms of dengue fever in Brazil (consisting of eight projects); products for diagnosis, treatment and prevention of the dengue fever (with nine projects); education and information (with five projects); and vectors and epidemiological surveillance (with seven projects). Some projects have generated important products, such as manuals for dengue fever prevention campaigns and a video on the habits of the dengue fever vector *Aedes aegypti* screened at the 4th Research
Biennial Fair at Fiocruz and at various discussion forums. Projects concerning the manufacture of input products are being concluded, such as the establishment of serum panels for dengue fever patients and a murine model for experiments with dengue fever type 2.

In 2004, the program began its expansion and approved 24 new projects (with new investments totaling 920 thousand dollars). The following fields were set as a priority: Policies, administration and evaluation of the Unified Health System (SUS) in municipal, state and federal governments; health care levels and integral health care; systems of information and monitoring in health; document management and memory; education and communication in health; laboratory methodologies for diagnosing diseases; and alternative analytical methodologies for the quality control of health products and inputs.

**Technological Management**

Fiocruz has been granted with 14 patents in the country and 38 abroad. There are 49 submissions for patents in Brazil and 63 in other countries. A few patents granted to Fiocruz abroad in recent years should be highlighted.

In 2002, the process for producing viruses in cell cultures was patented in Italy and Cuba. A patent for an infectious cDNA was granted in both Cuba and Colombia. Still in 2002, patents regarding the development of an attenuated virus vaccine against flavivirus were submitted in European countries, Thailand, Cuba, the United States, Canada, Australia, South Africa and in the African Regional Industrial Property Organization (Aripo). Other patents regarding that same project were submitted in Colombia in 2003 and in Aripo in 2004.
In 2003, patents were granted in the United States for the yellow fever vaccine and the *Guignardia sp.* fungi extracts and its uses in medications. In 2004, two more patents were granted in the United States: one regarding the methodology and the kit developed to monitor patient compliance to treatment and the bioavailability of drugs through the deproteinization of body fluids; and another concerning the methodology and the optical fiber device for quickly detecting microorganisms.

Throughout the last four years, important strategic alliances were created regarding technology transfer: the licensing of Fiocruz’s patents for the development and production and a vaccine against distomatosis (fasciola hepatica) using the Sm14 protein; the transfer of technology for the production of MR and MMR vaccines (against mumps, measles and rubella) with GlaxoSmithKline Brazil; the transfer of technology of quick test kits for AIDS, with Chembio; the purchase of technology regarding the production of recombinant human interferon alpha 2b, with Herber Biotec, and of recombinant human erythropoietin, with Cimab; the development of diagnostic kits for leishmaniasis through PCR and real time PCR, with Biotools; the development of quick tests for diagnosing leishmaniasis, leptospirosis, Chagas disease and dengue fever types 1, 2 and 3, with FK Biotecnologia.

Fiocruz continues to coordinate the Intellectual Property and Technology Transfer Network (Repitec) of the Rio de Janeiro State Technology Network. The mission of this network is to disseminate the culture of intellectual property as well as to support the development and implementation of policies and strategic actions for protecting, increasing the importance of and commercializing the knowledge produced in universities, research centers, technological institutions and companies.

### Evolution of results of technological management

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Ongoing Projects: The Future

Fiocruz and the Ministry of Health created the *Innovation in Health Project* in 2003 to aid in the development and implementation of multisectorial policies for research, development, production and the scientific and technological administration of the Brazilian medical-industrial complex. The project engages both Brazilian and foreign specialists in counseling Fiocruz, the Ministry of Health, partners institutions and development agencies regarding crucial aspects of the country’s industrial complex. It is comprised of three subprojects: *Vaccines and Immunobiologics*, which launched the National Program for Competitiveness in Vaccines (Inovacina), formed the Technical Chamber for Immunobiologicals, established which vaccines should be considered priorities and started producing the vaccine “Penta Brasil” (DTP + Hepatitis type B + Hib). *Drugs and Pharmachemicals*, whose objectives are the international prospection for technology in drugs and pharmachemicals, the prospection for technology and less expensive procedures on the national pharmaceutical industry and the increase in production and the improvement of the technology of official laboratories; and *Diagnostic Reagents*, which has been developing studies in different aspects of the prospection for technology in the country, on the corporate and managerial capacity of both public and private sectors, on the production and technological capacity of Brazil’s different segments and on ways of evaluating political, financial and fiscal strategies for developing the sector. A book on vaccines and immunization in Brazil, a consequence of the first phase of development of the Project Innovation in Health, should be released in 2005.

The project for the creation of the *Center for Technological Development in Health (CDTS)* was completed in 2004. The center’s objective is to integrate research, development and production at Fiocruz. CDTS’s goal is to develop candidate products, conduct experiments to improve their qualities and evaluate them for safety and efficacy in preclinical research. The center should house activities that today are considered to be the national stumbling blocks for the development of new health products (such as activities related to toxicology). It should also facilitate Fiocruz’s assimilation of new technologies and keep it up-to-date in terms of equipment. For such, the institution shall acquire the necessary technological platforms to transform the knowledge that is produced (in projects such as PDTS, PDTSP and Papes) into products that will enhance the public supply of health products. Besides working together with others units at Fiocruz, CDTS also intends to form partnerships with other public and private institutions for the development and improvement of vaccines, drugs and diagnostic reagents that are essential for the Unified Health System (SUS) and, therefore, for the country. Fiocruz’s large experience in transferring technology to the productive sector facilitates the availability of products for the society, since they are manufactured on an industrial scale. The Foundation’s industrial units can manufacture products for diseases neglected by the private sector.
Fiocruz is today the country’s largest non-university institution training human resources in health. The Foundation’s experience in education is based on a few practices and principles such as the relation between generating knowledge and training human resources; the unbreakable bond between research and technology development; and the multidisciplinary character of and the integration between education and scientific production in health. These principles were consolidated between 2001 and 2004, a period characterized by the expansion and the improvement of the many education levels in the Foundation: vocational courses and *lato sensu* (specializations, etc.) and *stricto sensu* (master’s and doctor’s degrees) graduate programs.

### Academic Master’s and Doctor’s degrees

Fiocruz’s *stricto sensu* graduate programs have a formal relationship with the rest of the Brazilian graduate system as well as with foreign institutions. They are in perfect compliance with the evaluation system of the Ministry of Education and Culture (MEC) and of the Coordination for the Improvement of Higher Education Personnel (Capes). These programs are also linked to the National Council for Scientific and Technological Development (CNPq) of the Ministry of Science and Technology (MCT), as well as to the Ministry of Health and other governmental instances. All of Fiocruz’s graduate programs have achieved a four or more in Capes’s evaluation system (evaluation ranges from 1 to 7), which demonstrates the quality of the programs.

In 2004, Fiocruz’s *stricto sensu* graduate programs offered 12 different master’s degrees and 12 doctor’s degrees, besides the vocational master’s degrees. More than a thousand theses were submitted between 2001 and 2004. Students come from all over Brazil and from abroad – especially from Latin American and Portuguese-speaking African countries. In order to advise these students, Fiocruz counts on around 500 doctors in biology, health and exact, human and social sciences.

Between 2001 and 2004, the number of master’s and doctor’s degrees programs and students at Fiocruz more than doubled. In that period the following master’s and doctor’s programs were started: History of Health Sciences (at the House of
Moreover, new courses were created within the already existing programs. In 2003, a doctor’s degree in Public Health was created at the Aggeu Magalhães Research Center (CPqAM), which has offered master’s degrees on the subject since 1996.

Due to interinstitutional effort throughout 2004, the master’s degree in Health Sciences, to be offered in the Amazon through an agreement between the Leônidas and Maria Deane Research Center (CPqLMD), The Federal University of the State of Amazonas (UFam) and the Federal University of the State of Pará (UFPA), was submitted for approval to Capes. This innovative initiative is part of an effort of the federal government to strengthen the North region and integrate it to the other regions of the country.

A new class of CPqLMD’s doctor’s degree in public health will start in the first semester of 2005, thanks to an agreement between the graduate programs of CPqAM, of the Sergio Arouca National School of Public Health (Ensp) and of the Fernandes Figueira Institute (IFF). Twenty new students are expected to have their doctor’s degrees by 2008 and to be registered to form the staff of Fiocruz’s future graduate program in the North region.

Various graduate programs at Fiocruz have offered interinstitutional courses between 2001 and 2004. The master’s degree programs in Biology of Parasites and Tropical Medicine of the Oswaldo Cruz Institute were offered in partnership with the Federal University of the State of Mato Grosso do Sul. ESNP has opened a master’s degree together with the Federal University of Amazonas (UFam), the Federal University of Pará (UFPA) and the State University of Ponta Grossa, besides a doctor’s degree in the city of Recife, together with CPqAM, a fundamental initiative for beginning, in 2003, a doctor’s degree program at CPqAM.

**Vocational Master’s Degrees**

With the objective of training human resources for understanding, developing and conducting policies for interventions in health, Fiocruz has invested in vocational
master’s degrees – a type of formal education that is particularly suitable for training professionals for the Unified Health System (SUS).

Vocational master’s degrees in Maternal and Child Health (at the IFF) and Technology of Immunobiologics (at the IOC and Biomanguinhos) have been implemented from 2001 on. ESNP offers six different vocational master’s degrees in two broader areas: Health Administration and Health Surveillance. In 2004, Capes approved the vocational master’s degree in Public health at CPqAM, Fiocruz’s first regional center to have this type of course.

### Stricto sensu graduate courses offered by Fiocruz

<table>
<thead>
<tr>
<th>Courses</th>
<th>Started in</th>
<th>Type of Course</th>
<th>Grade (2005)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cellular and Molecular Biology (IOC)</td>
<td>1989</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Biology of Parasites (IOC)</td>
<td>1976</td>
<td>x</td>
<td>-</td>
</tr>
<tr>
<td>Tropical Medicine (IOC)</td>
<td>1980</td>
<td>x</td>
<td>-</td>
</tr>
<tr>
<td>Public Health (ENSPI)</td>
<td>1977</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Women’s and Child Health (IFF)</td>
<td>1988</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>History of Health Sciences (COC)</td>
<td>2001</td>
<td>x</td>
<td>-</td>
</tr>
<tr>
<td>Sanitary Surveillance (INCQS)</td>
<td>2001</td>
<td>x</td>
<td>-</td>
</tr>
<tr>
<td>Pathology (CPqGM/UFBA)</td>
<td>1995</td>
<td>x</td>
<td>-</td>
</tr>
<tr>
<td>Health Sciences (CPqRR)</td>
<td>2002</td>
<td>x</td>
<td>-</td>
</tr>
<tr>
<td>Public Health (CPqAM)</td>
<td>1996</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Education in Biosciences and Health (various units)</td>
<td>2004</td>
<td>x</td>
<td>-</td>
</tr>
<tr>
<td>Clinical Research in Infectious Diseases (Ipec)</td>
<td>2004</td>
<td>x</td>
<td>-</td>
</tr>
</tbody>
</table>

Types of courses: M = Master’s; VM = Vocational Master’s; D = Doctor’s

### Students enrolled in stricto sensu graduate programs in 2004

<table>
<thead>
<tr>
<th>Stricto sensu graduate programs in 2004</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctor’s degree programs</td>
<td>539</td>
</tr>
<tr>
<td>Master’s degree programs</td>
<td>534</td>
</tr>
<tr>
<td>Vocational master’s degree programs</td>
<td>90</td>
</tr>
<tr>
<td>Total</td>
<td>1,163</td>
</tr>
</tbody>
</table>
Other Education Levels

Fiocruz's *lato sensu* graduate programs encompass several fields of knowledge in high-quality courses, in accordance with the demands of the health sector. In 2004, specialization courses were offered in various fields, such as hospital management, sanitary surveillance of health services, medical entomology, pathological and cytopathological anatomy and nursing in infectious diseases. Also in 2004, Fiocruz has offered improvement courses related to managerial development (oriented towards the Unified Health System), to pharmaceutical assistance and the diagnostic of environmental and occupational diseases. The Foundation’s update courses were also significant, totaling 51 courses. Regarding medical residency and in-service training, in 2004, Fiocruz offered 15 courses, such as pediatric infectology, gynecology, medical genetics, child neurology, obstetrics, neonatology, child pneumology and pediatric intensive care medicine.

Number of students who obtained degrees from secondary-level, vocational and graduate (*stricto sensu* and *lato sensu*) programs

<table>
<thead>
<tr>
<th>Programs</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Update courses (including distance courses)</td>
<td>2,047</td>
<td>659</td>
<td>789</td>
<td>1,852</td>
</tr>
<tr>
<td>Improvement (including distance courses)</td>
<td>2,133</td>
<td>121</td>
<td>406</td>
<td>1,925</td>
</tr>
<tr>
<td>Specialization (including distance courses)</td>
<td>1,307</td>
<td>549</td>
<td>455</td>
<td>9,741</td>
</tr>
<tr>
<td>Residency</td>
<td>71</td>
<td>108</td>
<td>118</td>
<td>127</td>
</tr>
<tr>
<td>Master's</td>
<td>139</td>
<td>158</td>
<td>205</td>
<td>199</td>
</tr>
<tr>
<td>Doctor's</td>
<td>72</td>
<td>71</td>
<td>93</td>
<td>94</td>
</tr>
<tr>
<td>Vocation for Science (secondary school level)</td>
<td>353</td>
<td>118</td>
<td>102</td>
<td>123</td>
</tr>
<tr>
<td>Qualification and update (including distance courses)</td>
<td>534</td>
<td>1,371</td>
<td>1,441</td>
<td>5,768</td>
</tr>
<tr>
<td>Development</td>
<td>508</td>
<td>733</td>
<td>273</td>
<td>220</td>
</tr>
<tr>
<td>Professional training</td>
<td>26</td>
<td>68</td>
<td>345</td>
<td>391</td>
</tr>
<tr>
<td>Secondary-level school</td>
<td>47</td>
<td>86</td>
<td>72</td>
<td>241</td>
</tr>
</tbody>
</table>

It should be mentioned that Fiocruz’s *lato sensu* graduate programs encompasses both intrainstitutional and interinstitutional perspectives. There is a constant concern about maintaining quality and expanding the programs’ scope, without losing, however, its institutional perspective. This frame of view is reflected on the fact that the existing courses are permanently being restructured and improved and...
new courses are always being created. Taking the integrated perspective of Fiocruz’s *lato sensu* graduate programs into account, we can affirm that all fields regarding collective health and science and technology in health are either directly or indirectly being covered, which, in turn, shows the courses’ systemic character.

The Foundation’s *secondary-level vocational programs* are intended to provide professional education for young individuals who are not still employed. These courses are also offered to employees of health institutions in the country. In 2004, the Joaquim Venâncio Polytechnic Health School (EPSJV) was accepted as a World Health Organization Collaborating Center for vocational education, which means EPSJV is an instrument for strengthening health systems supported by the WHO.

Moreover, the participation of a few of Fiocruz’s units in collaborating networks, such as the Observatory Network of Human Resources for Health (Rorehs) and the Network of Vocational Schools of the Unified Health System (RET-SUS) should be highlighted.

*Rorehs* is an initiative of the Secretariat of Labor Administration and Education in Health of the Ministry of Health, developed together with the Technical Cooperation Program of the Pan American Health Organization (PAHO). The network’s main objective is to increase the access to information and analyses about human resources in health in order to facilitate the further formulation, development and evaluation of policies and programs in that sector.

*RET-SUS* intends to facilitate the development of new skills, the dissemination of information, and the creation and exchange of technologies in vocational education in health. The network links 37 institutions in 17 Brazilian states and intends to mobilize centers and institutions in order to formulate projects. It also disseminates new technologies and positive results to vocational education institutions. EPSJV is the headquarters of the Technical Secretariat of the RET-SUS. The school also launched, in September 2004, the monthly-issued RET-SUS periodical. This publication is a space to make the ongoing activities of the schools known and to discuss subject matters related to the daily lives of people involved in the network.

*Progestão* is a grant program created in 2003 together with Faperj to further develop the area of administration. It finances projects intended to implement actions (in all areas of Fiocruz) that improve health administration. The program is presently responsible for 172 grants and a 860 thousand dollar annual budget.
Some of Fiocruz’s education programs have a strong social appeal. Such is the case of the Museum of Life, which, together with Faperj, provides training for young individuals from lower social strata in order for them to be instructors in museums and science centers. Many of them presently work as paid interns at Fiocruz and at other institutions, such as the Museum of Astronomy.

The Course for Qualifying Municipal and State Health Councilors intends to strengthen the Unified Health System. Health councilors have the opportunity to develop new skills related to their current tasks, which include participating in the formulation of public policies. The course has trained 31,556 state and municipal councilors in courses conducted in all Brazilian states.

The Program for Training Local Health Surveillance Agents (Proformar) intends to train secondary level workers in health promotion and health protection in order to change current sanitary practices. Between 2001 and 2004, Proformar has trained 658 tutors and 4,616 local health surveillance agents. The Project for the Technical Training of Health Records Multiplying Agents (for Implementing the National Health Card) has trained 228 professionals. This project’s objective is to reorganize and restructure services in that area.

The Brazilian Health and Environment Olympics is destined towards elementary and secondary school students from all over the country. It is an educational contest that stresses original and creative projects instead of game competitions and, thus, stimulates young individuals to discuss and reflect upon problems related to health and the environment. In 2003, 571 schools participated in the Olympics, and 742 projects were presented. In 2004, 330 schools participated and 792 projects were presented.

The Program for Vocation in Science (Provoc) is coordinated by EPSJV and is designed to instigate the interest for science in secondary school students and to discover new talents in that area. Students are immersed in the academic routine and participate in research, helping prepare papers and discussing results.

<table>
<thead>
<tr>
<th>Program for Vocation in Science (PROVOC)</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provoc’s Scientific Initiation phase in Rio</td>
<td>200</td>
<td>53</td>
<td>60</td>
<td>65</td>
</tr>
<tr>
<td>Provoc’s Scientific Initiation phase in Fiocruz’s regional centers</td>
<td>25</td>
<td>10</td>
<td>11</td>
<td>14</td>
</tr>
<tr>
<td>Provoc’s advanced phase in Rio</td>
<td>88</td>
<td>32</td>
<td>21</td>
<td>37</td>
</tr>
<tr>
<td>Provoc’s advanced phase in Fiocruz’s regional centers</td>
<td>34</td>
<td>2</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>347</td>
<td>97</td>
<td>96</td>
<td>123</td>
</tr>
</tbody>
</table>
School of Governance in Health

The School of Governance in Health is the strategic side of Fiocruz’s education, research and technical cooperation programs, dedicated to train future staff members and produce knowledge aiming at increasing the governing capacity of the country’s health system. The school’s objectives are:

- To train professionals on the strategic and operational administration of health systems, services, programs and organizations;
- To produce adequate knowledge that is possible to be immediately applied to the development of the health system, translating technologies for assistance and management into methodologies;
- To directly cooperate with managerial and operational units of the Unified Health System in municipal, state and federal government instances in order to solve concrete managerial problems;
- To stimulate and aid other education and research institutions dedicated to collective health in building a national network of schools of governance in health, thus facilitating the training of an amount of personnel for supplying the needs of SUS;

The school is intended for health leaders and administrators such as health directors, officers in higher hierarchical positions and technical board directors in municipal and state secretariats as well as in the Ministry of Health, the Health Councils and other governmental institutions.

The objective is to train administrators for various programs of the Unified Health System that include health surveillance, public health laboratories, women’s and child health, information and communication in health, among others.

Distance Learning (EAD)

Since distance-learning methods reach Brazil’s most remote areas and help train individuals outside the country, they are growing stronger as a strategy for increasing health training opportunities. The objectives are: Organizing distance-learning initiatives at Fiocruz; helping SUS to solve problems related to the training of human resources; and maximizing the cooperation with the Ministry of Health.

EAD was created in 1998 to serve the Distance-Learning Program (ProEAD) of the Sergio Arouca Public Health School (Ensp) and the school’s course on health administration. In 2004, Fiocruz’s Board of Directors approved the expansion of ProEAD to the entire Foundation. EAD is growing rapidly: In 1998, there were
around a thousand students enrolled in distance-learning courses; today around 8,500 students are enrolled and more than 20 thousand have finished courses.

The number of vocational courses and lato sensu graduate courses also grew in the last four years. In 2004 (the year with the highest number of courses), a total of 169 courses were offered, that is, 106 lato sensu graduate courses, ten distance-learning courses and 53 secondary-level or graduate vocational courses.

### Number of lato sensu graduate courses and courses in other education programs

<table>
<thead>
<tr>
<th>Education programs</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specialization courses</td>
<td>24</td>
<td>24</td>
<td>26</td>
<td>30</td>
</tr>
<tr>
<td>Improvement courses</td>
<td>11</td>
<td>08</td>
<td>05</td>
<td>10</td>
</tr>
<tr>
<td>Update courses</td>
<td>43</td>
<td>48</td>
<td>51</td>
<td>51</td>
</tr>
<tr>
<td>Residency and in-service training</td>
<td>15</td>
<td>25</td>
<td>16</td>
<td>15</td>
</tr>
<tr>
<td>Distance-learning courses (Specialization)</td>
<td>02</td>
<td>03</td>
<td>01</td>
<td>04</td>
</tr>
<tr>
<td>Distance-learning courses (Improvement)</td>
<td>03</td>
<td>05</td>
<td>06</td>
<td>05</td>
</tr>
<tr>
<td>Distance-learning courses (Update)</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>01</td>
</tr>
<tr>
<td>Secondary-level vocational education</td>
<td>06</td>
<td>06</td>
<td>06</td>
<td>06</td>
</tr>
<tr>
<td>Vocational education for the initial and continuous training of workers</td>
<td>43</td>
<td>36</td>
<td>23</td>
<td>25</td>
</tr>
<tr>
<td>Vocational improvement</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>01</td>
</tr>
<tr>
<td>Vocational specialization</td>
<td>--</td>
<td>--</td>
<td>02</td>
<td>04</td>
</tr>
<tr>
<td>Professional development</td>
<td>--</td>
<td>--</td>
<td>07</td>
<td>11</td>
</tr>
<tr>
<td>Special programs</td>
<td>07</td>
<td>07</td>
<td>06</td>
<td>06</td>
</tr>
</tbody>
</table>

### Other Educational Programs at Fiocruz

The Joaquim Alberto Cardoso de Melo Prize was created in 2004 to award the best projects developed by students finishing doctor’s, master’s, specialization and secondary-level vocational education programs at the Foundation. The first prizes were awarded in the second semester of 2004 to students who finished their courses in 2002, 2003 and 2004.

The Technical Chamber of Education established the rules for Fiocruz’s Integrated Graduate Programs for Foreigners and the new rules for the courses offered at
the Foundation. Four events regarding education integration took place at Fiocruz with the participation of several units of the Foundation. The 1\textsuperscript{st} Education Fair was organized in 2002 under the theme \textit{Pioneering and Innovation: Education at Fiocruz} as a part of the 3\textsuperscript{rd} Research Biennial Fair. In 2004, the theme of the Fair was \textit{Innovation and Quality of Education}. The other two events were the 7\textsuperscript{th} and 8\textsuperscript{th} Graduate Scientific Conference. They were organized in 2001 and 2003 respectively and entitled \textit{A Tribute to Geographer Milton Santos} and \textit{Education, Science and Health: A Commitment to Life}.

Many publications related to the education activities performed at Fiocruz were published between 2001 and 2004, such as the Course Catalogues (yearly issued); the Summary of Master’s and Doctor’s Degree Programs (yearly issued); the Student Guides (comprising Obligatory Internships, Vocational Education Programs and \textit{lato sensu} and \textit{stricto sensu} graduate programs); the Regulations for Education Programs; the Reports of the 1\textsuperscript{st} and 2\textsuperscript{nd} Education Fairs and the 7\textsuperscript{th} and 8\textsuperscript{th} Graduate Scientific Conference; and the books \textit{Fiocruz: Health of Education} and \textit{Fiocruz and the Work Force}.
Drugs

Production

In 2004, in an unprecedented governmental initiative both in the country and abroad, the Federal Government invested around six million dollars in purchasing GlaxoSmithKline’s pharmaceutical plant. The plant comprises high-technology facilities in a 1,130 million square feet area, 430 thousand of constructed area. It is located in the neighborhood of Jacarepaguá, in the west zone of Rio de Janeiro and was merged to Fiocruz’s Drug Technology Institute (Farmanguinhos) in August 2004. The plant was entitled the Technological Drug Complex (CTM) and will allow a fivefold increase in the production capacity of the Foundation and a broadening of Fiocruz’s research on and development of new drugs.

From 2007 on, the production is estimated to reach ten billion pharmaceutical units (including pills, tablets, caplets, ointment and cream tubes, etc.). With the plant’s purchase, Farmanguinhos will now be able to expand its product portfolio and include products with different pharmaceutical properties and in other presentations. In 2005, both penicillin-derived antibiotics and drugs for hypertension and diabetes should start being produced. The production of these products should reach four billion pharmaceutical units in the following year. Farmanguinhos also intends to produce other innovative drugs, such as the fixed dose combinations (combinations containing two or more active ingredients in only one medication) used for the treatment of Aids, tuberculosis, malaria, among other diseases. Farmanguinhos is also already planning to produce oral contraceptives, cholesterol reducers and drugs against asthma, including aerosols.

Farmanguinho’s mission is to develop new technology and produce drugs of public interest. This mission is being crystallized in Farmanguinhos’ participation in strategic social programs of the Federal Government, such as the Program for Pharmaceutical Assistance (especially for supplying SUS’s
basic and specialized health care programs), the Family Health Program (PSF) and, more recently, the Brazilian Popular Pharmacy Program coordinated by the Ministry of Health. Between 2001 and 2004, Farmanguinhos produced 200 thousand kits with drugs to be freely distributed every three months by the Family Health Program to its patients.

**Distribution of drug kits by the Family Health Program**

Among the products manufactured by Farmanguinhos and destined towards the Unified Health System are anti-inflammatory, anti-infective, anti-psychotic, analgesic and antiulcer drugs, as well as drugs against Aids, malaria, schistosomiasis, tuberculosis, leprosy, filariasis, onchocerciasis, anemia, diabetes, hypertension and cardiovascular and central nervous system diseases.

Between 2001 and 2004, more than 5.5 billion pharmaceutical units (among tablets, pills, ointments and creams) were produced. Gross sales for the four years were of around 320 million dollars.
Farmanguinhos is the major public pharmaceutical laboratory in the country and its production represents 36 percent of the Ministry of Health’s purchases. The institute combines a great production capacity, staff members with a large experience in organic synthesis and a great knowledge on technologies for formulating drugs. With that in hand, Farmanguinhos can increase the strength of the Ministry of Health in negotiating with private laboratories. The case of the drugs for HIV/AIDS confirms Farmanguinho’s technological vocation for reverse engineering, which represents large savings for the government. This economy takes place not only because of the increase in production, but also because of the price reduction for patented products, since it is possible to employ the compulsory licensing for the public production of antiretroviral drugs.

Farmanguinhos provides, since 1998, the technical support the Ministry of Health requires for developing effective and egalitarian public health policies. Today, the institute produces nine of the 17 anti-HIV/AIDS drugs. The annual cost of one AIDS patient dropped from 4.7 thousand dollars in 2000 to 2.5 thousand dollars in 2002, making Brazil an international example in the struggle against HIV/AIDS.
Technological Development

Today, the development and production of phytotherapeutic products, which take advantage of the country’s large biodiversity and may provide SUS’s patients with great opportunities in terms of therapies, are being stressed. Therefore, Farmanguinhos has been devoting itself not only to the validation of analytical methodologies for the utilized extracts, but also to the pharmacological and toxicological research of plants with promising new therapeutic properties.

With an initial investment of around 200 thousand dollars in the Green Pharmacies Program, Farmanguinhos organized a medicinal plant garden and settled new research laboratories since 2001 in a former psychiatric hospital in Jacarepaguá. More than 90 different plant species with potential phytotherapeutic agents are cultivated there. Thirty-four of these plants are being studied for the development of new drugs.

The most important ongoing projects are related to the creation of a medicinal plant germplasm bank and the establishment of a collection of reference plant extracts. There are also projects that intend to identify new bioactive molecules for the symptomatic treatment of dengue fever.

As to organic synthesis, there are a few projects related to the development of drugs that are critical for public health and yet are either not produced in the country (and have expired patents) or are not interesting for multinational companies to produce. Since Brazil imports a lot of pharmaceutical input products, developing processes of organic synthesis for these drugs is very important. As to applied research, ongoing projects regard the development of bioactive molecules for the treatment of Chagas disease, leishmaniasis, and malaria, among other neglected diseases.

Strategic Partnerships

Technologies of drug synthesis developed by Farmanguinhos through reverse engineering are transferred to national pharmaceutical companies. Partnerships with the private sector have not only strengthened the competitiveness of the national pharmaceutical industry, but also increased the commitment of manufacturers of input products to the production of
these products. Therefore, Farmanguinhos is a very important agent of the System of Pharmaceutical Innovations.

Farmanguinhos, together with the World Health Organization (WHO) and other institutions from southern countries and from the European Union, is part of the Drugs for Neglected Diseases Initiative (DNDi). In this initiative, Farmanguinhos is responsible for the project FACT (Fixed-dose artesunate-based combination therapies for malaria), which intends to develop fixed combinations of antimalarial drugs (artesunate + mefloquine hydrochloride). Presently, the production processes of these new pharmaceutical products for treating malaria are being validated and clinical trials in healthy volunteers are being conducted in Sains University, in Malaysia. They will also be tested in patients with malaria in Mahidol University in Thailand.

**Immunobiologicals (Vaccines and Diagnostic Kits)**

The Immunobiological Technology Institute (Biomanguinhos) at Fiocruz plays a crucial role in the National Immunization Program (PNI) of the Ministry of Health. The institute’s activities regarding production and technological development are also determined by the Federal Government’s Pluriannual Plan (PPA) for the health sector. Biomanguinhos comprises the following programs: controlling vaccine-preventable diseases; research and development in health; blood quality; prevention of STDs/Aids and assistance to patients with these diseases.

Biomanguinhos is one of the country’s largest centers for the development and production of immunobiologicals. It produces around one third of the vaccines used in the country and 43 percent of the diagnostic reagents. Therefore, the institute can significantly contribute to diminishing Brazil’s dependence on health input products, which presently represents a 3.5 billion dollar deficit on the country’s trade balance. Biomanguinhos is the largest world producer of the vaccine against yellow fever and is the only Latin American laboratory to be certified by the World Health Organization to produce this vaccine.

Between 2001 and 2004, the institute produced around 320 million vaccine doses against yellow fever, measles, meningitis types A and C, MMR, Hib (against the Haemophilus influenzae type b) and DTP + Hib, which started to be produced by Biomanguinhos in 2001 in a partnership with the Butantan Institute.
The substitution of individual vaccines (such as Hib and measles) for combinations (such as DTP + Hib and MMR), which started in 2002, and the reduction of the number of doses per vial (such as occurred to the yellow fever vaccine), explain the variations in the number of vaccines produced in the last four years.

As to vaccines against viruses, Biomanguinhos produced, in 2004, 20 million doses of the MMR vaccine (against measles, mumps and rubella), the only vaccine included in the National Immunization Program that was still being imported. It was only possible because of a technology transfer agreement between the institute and the multinational pharmaceutical company GlaxoSmithKlein (GSK). Nationalizing the production of the MMR vaccine will represent an economy of 15 million dollars for the first five years of this partnership, which could reach 100 million dollars in the following years.
Between 2001 and 2004, Biomanguinhos produced 9.2 million diagnostic kits for diseases such as leptospirosis, leishmaniasis, viral diarrhea, Chagas disease, leprosy and dengue fever, among others. Fiocruz began producing the quick test for diagnosing HIV types 1 and 2, which is distributed to the National Program for STDs/Aids. This kit makes early diagnosis possible, helps prevent mother-to-child transmission and facilitates the screening of populations living in poor and remote areas. The result is obtained in less than ten minutes without the need of laboratorial infrastructure.

In 2003, Biomanguinhos signed a technology transfer agreement for the production of the quick test for HIV with the American company Chembio. Biomanguinhos will absorb the technology over three years, producing around 300 thousand tests annually. Nationalizing the production will generate a 50 percent economy compared to importing the product. Besides that, the technology will also be applied to other diseases such as dengue fever, leptospirosis and leishmaniasis.

Between 2001 and 2004, Biomanguinhos sold a gross figure of around 290 million dollars in vaccines and diagnostic kits to the Ministry of Health and WHO’s agencies (exports).
Biomanguinhos’s technology development activities have the objective of developing new products and thus solve operational problems in the products’ pipelines. The goal is to seek new formulations for vaccines and reagents, improve thermal stability, increase efficacy and develop new methodologies for quality control and assurance. As to vaccines, there is research being conducted on a recombinant BCG vaccine, on a combination against rubella and measles, on a pentavalent
vaccine (Hepatitis type B combined with DTP and Hib vaccines) and on vaccines against dengue fever, enteropathogenic *Escherichia coli*, Meningitis types B and C, pneumonia caused by *Streptococcus pneumoniae* and rubella. As to diagnostic reagents, the emphasis is on the development of kits for HIV, leptospirosis, leishmaniasis, dengue fever, viral diarrheas and measles. Fiocruz, together with the George Washington University and other foreign institutions is part of an initiative to develop a vaccine against hookworm infection.

The Charles Mérieux Center for the Production of Bacterial Antigens (CPAB) was inaugurated in 2004 at Biomanguinhos. The center is among the most modern laboratories for bacterial vaccines in Latin America. It has the capacity of producing 20 million doses of the vaccine against Hib (*Haemophilus influenzae* type B), which mainly affects children with less than one year of age and may cause meningitis, pneumonia, epiglottitis and arthritis. Biomanguinhos’ production of this vaccine is going to supply 100 percent of the demand of the Ministry of Health and will produce an economy of around 4 million dollars, which is presently used to import the active ingredient from Belgium. CPAB is also capable of producing 20 million doses of the meningococcal polysaccharide vaccine against meningitis types A and C. It is expected that the center also come to produce the vaccines against meningitis types B and C and against pneumococci.

The Center for Processing Viral Antigens (CPAV) will be inaugurated in 2006. This center will have the capacity of producing an estimate of around 60 million vaccine doses of the components for measles, mumps and rubella and 20 million doses of other vaccines.

**Laboratory animals**

The Laboratory Animal Breeding Center (Cecal) has supplied Fiocruz with more than 570 thousand laboratory animals between 2001 and 2004. The center breeds mice, rats, hamsters, guinea pigs, rabbits and non-human primates that are used by Fiocruz and by other institutions. The animals are necessary for research, teaching and the production and quality control of drugs and immunobiologicals. In 2004, Cecal started activities related to the cryopreservation of embryos. The objective is to keep only the embryos of certain colonies frozen, a measure of rationalization and economy that is being applied by the best animal breeding centers in the world.

In this four-year period, Fiocruz has invested on modernizing the facilities of and updating the technologies used at Cecal: new mice lineages (transgenic, knockout and inbred mice) and specific pathogen-free (SPF) animals are the results of these innovations. Almost 33 thousand SPF animals were bred between 2003 and 2004.

Between 2001 and 2004, Cecal has also developed many research and technology development projects. Around 50 scientific papers were published in the areas of genetics, nutrition, pathology, reproduction and animal behavior.
Cecal presently breeds 35 lineages of syngeneic, non-syngeneic, transgenic and knockout (*Mus musculus*) mice lineages. All rats (*Rattus norvegicus*) are Wistar. These are the two most used species at Fiocruz and are bred under assured and adequate sanitary and genetic conditions for experiments. The process of quality assurance involves performing aseptic cesarean births and permanently monitoring the health conditions of the animals.

Another species of small rodents also used in research, especially in immunology, is *Mesocricetetaurus auratus* (hamsters). These hamsters are from the Golden lineage and are bred in smaller quantities. Short Hair Guinea Pigs (*Cavia porcellus*) are produced in large scale because of their wide use in vaccine control. Supplying the Ataulpho de Paiva Foundation with these animals has made the development of the project for an oral BCG vaccine in that institution possible.

Rabbits (*Oryctolagus cuniculus*) are from the New Zealand lineage. They are used in large scale in pyrogen control, experimental surgeries and vaccine preclinical tests. The four non-human primate species bred at Cecal are very important for research, technology development and in preclinical studies of vaccines and diagnostic kits. These four species are: *Macaca mulatta* (rhesus monkeys), *Macaca fascicularis* (long-tailed macaque), *Saimiri sciureus* (squirrel monkey) and *Saimiri ustus* (naked-eared squirrel monkey).

The species *Ovis aires* (sheep), *Capra hircus* (goat) and *Equus caballus* (horse) are bred mainly for animal blood, blood-derived products and the production of antibodies, which are used in research and development of immunobiologicals. Between 2001 and 2004, Cecal has provided the Foundation with more than 610 liters of animal blood.
As to education, Cecal has organized many events on bioterrorism and conducted various courses. More than 730 students finished courses at Cecal between 2001 and 2004. Moreover, the Fiocruz Publishing House published the book *Laboratory Animals: Breeding and Experimenting*, based on the program of an international course offered by the WHO and coordinated by Cecal.
Fiocruz has intensively participated in laboratory networks that are part of the structure responsible for health surveillance both in national (in the Unified Health System) and international spheres. In this context, the Foundation stands out as a supporter of the formulation and implementation of policies of the Ministry of Health. Fiocruz is also prominent as a health system supporter, contributing to methodologies, managerial practices, knowledge, diagnostic validation, assistance to specific areas, technological development and training of human resources, besides maintaining and continuously expanding scientific collections.

Fiocruz’s actions concern the following: mid or high complexity exams for diagnosing diseases that are considered relevant for the epidemiological surveillance of communicable and non-communicable diseases; sample tests as part of programs of environmental surveillance in health and worker health protection; and studies regarding input products and products of interest for sanitary surveillance.

**Reference Laboratories in Epidemiological Surveillance**

Fiocruz houses the major set of reference laboratories of the National Network of Epidemiological Surveillance. The Foundation is also formally recognized as an international reference by the World Health Organization (WHO) and by its regional organization for the Americas, the Pan American Health Organization (PAHO).

The Foundation’s research activities are the basis for the capacity acquired by various units at Fiocruz. These activities have allowed laboratories to prematurely incorporate the most important methodological innovations for detecting antibodies, isolating and characterizing infectious agents, identifying antigens, performing pathological analyses, etc. Fiocruz’s laboratories were often responsible for developing and validating methodologies that would later be applied (either by the laboratories themselves or by other laboratories in the network) in rendering reference diagnostic laboratory services.
Another reason for these activities to be expanding at Fiocruz is the Foundation’s increasing participation in the formulation and implementation of policies and strategies of the Ministry of health and the Unified Health System. These policies and strategies are either directly or indirectly related to the major areas of science, technology and innovation.

Therefore, Fiocruz’s reference laboratories not only perform laboratory exams that usually have a higher complexity and are more difficult in terms of differential diagnosis, but also establish reference materials for diagnosis, render assistance and consultancy services for municipal and state laboratories in the network, and offer various continuous training courses (from in-service training programs to lato sensu or stricto sensu graduate programs). Thus, the reference services may be considered an example of the synergy between education, research and technological development activities going on at Fiocruz.

The discussion over and the approval of Administrative Rule number 15, which was later updated by Administrative Rule number 2031, of the Ministry of Health, in September 2004, was of great importance for Fiocruz’s participation in the formulation of public policies. This Administrative Rule defined a set of national laboratory networks to be part of the National System of Public Health Laboratories (Sislab). Within Sislab, Fiocruz’s participation in the National Network of Epidemiological Surveillance Laboratories and other networks should be highlighted.

The establishment of the rules for validating national and regional reference laboratories in the context of this network by the Ministry of Health was of great importance (Administrative Rule number 70, December 2004). Among the rules established, laboratories must have systems for managing quality and biosafety, besides being part of an international program of external quality evaluation. For such, between 2001 and 2004, Fiocruz started a series of activities for assuring that laboratories will comply with biosafety and Laboratory Quality Management rules of the country.

Fiocruz’s reference laboratories assure the early detection of both “new” and “old” diseases and thus facilitate efficient measures to be taken in case disease outbreaks and bioterrorist actions take place. These laboratories have performed 450 thousand examinations between 2002 and 2004.

The major reference laboratory services performed at Fiocruz for epidemiological surveillance are listed below:

**International Reference**

WHO formally recognizes reference diagnostic services in laboratories of three of Fiocruz’s units in the following areas:
- Diagnosis and molecular typing of human retroviruses (CPqGM)
- Control and prevention of schistosomiasis (CPqGM)
- Typing of *Leishmania* (CPqRR/IOC)
- Measles and other exanthematous viral infections (IOC)
- Flu / Influenza virus (IOC)
- Polio and other enterovirus infections (IOC)

**National/ Regional Reference**

The Health Surveillance Secretariat (SVS of the Ministry of Health) is the governmental agency responsible for coordinating the National Network of Epidemiological Surveillance Laboratories within Sislab. The network has a hierarchical structure and each part has different and very clearly defined responsibilities. Fiocruz’s units have an expressive number of national or regional reference laboratories in that structure (agreement between Fiocruz and the Ministry of Health number 3,665 and the Administrative Rule number 285 of 09/27/04). These services regard the following:

- Dengue fever and yellow fever (CPqAM/IOC)
- Flu/ Influenza virus (IOC)
- Hantavirus infections (CPqAM/IOC)
- Hepatitis (CPqGM/IOC)
- Polio and other enterovirus infections (IOC)
- Rickettsial diseases (IOC)
- Rotavirus infections (IOC)
- Measles and other exanthematous viral diseases (IOC)
- Severe Acute Respiratory Syndrome (IOC)
- Systemic fungal infection (Ipec)
- Anthrax (IOC)
- Cholera and other forms of bacterial enteritis (IOC)
- Leptospirosis (IOC)
- Bubonic plague (CPqAM)
- Chagas disease (CPqRR/IOC)
- Schistosomiasis (CPqAM/CPqRR/IOC)
- Filariasis (CPqAM)
- Leishmaniasis (CPqAM/CPqGM/CPqRR/IOC/Ipec)
- Malaria (IOC)
- Onchocerciasis (IOC)

Fiocruz’s laboratories are also formally approved by several units of the Ministry of Health to perform national reference activities on:

- Arthropod vectors (CPqAM/IOC)
- Dermatopathology (CPqGM)
- Endemic monitoring and surveillance (Ensp)
- Leprosy (IOC)
- HIV (IOC)
- Histopathologic diagnosis of infectious diseases (Ipec)

**State and Municipal Reference**

Fiocruz’s laboratories also offer these and other reference laboratory diagnostic services for the states and municipalities in which their headquarters are based.

**Reference Laboratories in Sanitary Surveillance**

The National Institute of Quality Control in Health (INCQS) is the national reference institute for assessments and laboratory analyses regarding quality control of input products, finished goods, spaces and services.

INCQS performs technical and scientific activities regarding food; drugs; sera and vaccines; germ-killing agents; diagnostic input products; cosmetics; blood and blood-derived products; products for dialysis and environmental health.

In order for the institute to fulfill the responsibilities of being a reference center in the National Sanitary Surveillance System, the following areas are prioritized: development; validation and implementation of analytical methodologies; establishment of chemical and biological reference materials; and training of human resources for quality control in health.

The institute’s technical and scientific leadership in the National Network of Laboratories of Quality Control in Health was confirmed by its active participation in the development of and the support to the implementation of System of Sample Management (SGA) in the network’s laboratories. Moreover, the institute has offered support and supervised the projects within the Program for Restructuring Central Public Health Laboratories (Pro-Lacen), together with the National Health Surveillance Agency (Anvisa).
What also justifies that INCQS is a reference center in quality control in health is the institute’s *lato sensu* and *stricto sensu* graduate programs on sanitary surveillance. The objective is to train competent professionals that have the right profile for the area of quality control regarding health products.

Since the institute is aware of the importance of Quality Management in order for analytical results to be reliable, it has been investing in complying with the *Iso Guia 25* rules, today known as *NBR ISO/IEC 17025*. Today, INCQS is the first laboratory of the National Network of Laboratories of Quality Control in Health to have several of its studies and calibrations approved by the National Institute of Metrology, Standardization and Industrial Quality according to above-mentioned rules.

Besides INCQS’s activities in the sectorial program of sanitary surveillance, Fiocruz has other units participating in technical and scientific activities of that kind, particularly in the pharmaceutical field. The following reference actions are worthy of mention:

- World Health Organization Collaborating Center in Pharmaceutical Policies (Ensp)
- Anvisa’s Reference Laboratory In Pharmaceutical Equivalence (Farmanguinhos)
- Anvisa’s Reference Laboratory in Pharmacokinetics and Bioequivalence (Ipec)
- Laboratory of Pharmacological Evaluation of Natural Products (CPqGM)
### Products Analyzed by INCQS

<table>
<thead>
<tr>
<th>Type of sample</th>
<th>2001</th>
<th>%</th>
<th>2002</th>
<th>%</th>
<th>2003</th>
<th>%</th>
<th>2004</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food</td>
<td>338</td>
<td>7</td>
<td>362</td>
<td>7</td>
<td>396</td>
<td>6</td>
<td>279</td>
<td>6</td>
</tr>
<tr>
<td>Cosmetics</td>
<td>8</td>
<td>-</td>
<td>11</td>
<td>-</td>
<td>40</td>
<td>1</td>
<td>55</td>
<td>1</td>
</tr>
<tr>
<td>Products and input products for dialysis</td>
<td>955</td>
<td>19</td>
<td>1,089</td>
<td>22</td>
<td>852</td>
<td>13</td>
<td>530</td>
<td>11</td>
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<tr>
<td>Products and input products for health</td>
<td>64</td>
<td>1</td>
<td>51</td>
<td>1</td>
<td>58</td>
<td>1</td>
<td>84</td>
<td>2</td>
</tr>
<tr>
<td>Diagnostic kits, reagents and products</td>
<td>169</td>
<td>3</td>
<td>184</td>
<td>4</td>
<td>220</td>
<td>3</td>
<td>254</td>
<td>5</td>
</tr>
<tr>
<td>Drugs</td>
<td>296</td>
<td>6</td>
<td>273</td>
<td>5</td>
<td>354</td>
<td>5</td>
<td>298</td>
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<td>Other</td>
<td>-</td>
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<td>2</td>
<td>-</td>
<td>45</td>
<td>1</td>
<td>5</td>
<td>-</td>
</tr>
<tr>
<td>Germ-killing agents</td>
<td>26</td>
<td>1</td>
<td>90</td>
<td>2</td>
<td>24</td>
<td>-</td>
<td>31</td>
<td>1</td>
</tr>
<tr>
<td>Blood and blood-derived products</td>
<td>1,586</td>
<td>31</td>
<td>1,429</td>
<td>29</td>
<td>3,378</td>
<td>50</td>
<td>2,053</td>
<td>42</td>
</tr>
<tr>
<td>Environmental health</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sera and vaccines</td>
<td>1,615</td>
<td>32</td>
<td>1,484</td>
<td>30</td>
<td>1,405</td>
<td>21</td>
<td>1,331</td>
<td>27</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>5,057</td>
<td>100</td>
<td>4,975</td>
<td>100</td>
<td>6,773</td>
<td>100</td>
<td>4,920</td>
<td>100</td>
</tr>
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</table>

### Quality Control Activities at Fiocruz

<table>
<thead>
<tr>
<th>Indicators</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analysis results</td>
<td>5,057</td>
<td>4,975</td>
<td>6,773</td>
<td>4,920</td>
</tr>
<tr>
<td>Technical analysis</td>
<td>120</td>
<td>165</td>
<td>249</td>
<td>99</td>
</tr>
<tr>
<td>Training of human resources for the network</td>
<td>293</td>
<td>225</td>
<td>246</td>
<td>260</td>
</tr>
<tr>
<td>Inspections, audits and evaluations in industries and laboratories</td>
<td>104</td>
<td>67</td>
<td>70</td>
<td>40</td>
</tr>
<tr>
<td>Technical consultancies and the distribution of reference materials</td>
<td>2,236</td>
<td>2,832</td>
<td>3,387</td>
<td>5,225</td>
</tr>
<tr>
<td>Evaluations of patent registry processes</td>
<td>230</td>
<td>109</td>
<td>223</td>
<td>324</td>
</tr>
<tr>
<td>External assistance</td>
<td>184</td>
<td>215</td>
<td>148</td>
<td>137</td>
</tr>
<tr>
<td>Development of new technical standards/ Standard Operating Procedures (SOPs)</td>
<td>251</td>
<td>154</td>
<td>225</td>
<td>177</td>
</tr>
<tr>
<td>Establishment of reference materials</td>
<td>199</td>
<td>127</td>
<td>259</td>
<td>91</td>
</tr>
<tr>
<td>Courses and seminars</td>
<td>109</td>
<td>135</td>
<td>87</td>
<td>96</td>
</tr>
</tbody>
</table>
Environmental Surveillance

Fiocruz is starting its environmental surveillance activities (a new area even for the Ministry of Health) by organizing the experience gathered by its units in the Health and Environment Research Program. This program follows the strategic guidelines determined by the National Health Foundation (Funasa), by the Health Surveillance Secretariat (SVS/Ministry of Health) and by the Pan American Health Organization (PAHO) and its objective is the development of methodologies and technologies that are adequate for the country’s social and cultural realities. It is, moreover, committed to improving the quality of health of the population and preserving biodiversity.

Fiocruz has participated in the establishment of policies in the sector as a technical and scientific consultant in the Permanent Environmental Health Commission (Copesa), which was created in 2003 by Administrative Rule number 1931 of the Ministry of Health. Together with the Ministry of the Environment, Fiocruz promoted its candidacy as a WHO Collaborating Center in the area of Health and Environment.

The Technical Chamber of Health and Environment decided to release PDTSP’s 2003 thematic call for proposals on the theme *Quality of Life and Management of Water Resources: Water, Means of Assuring Life*. Twenty-seven projects were submitted and 17 projects were approved. Moreover, an agreement between Fiocruz and the Ministry of Health in the area of health and environment was negotiated and implemented. Sixteen research and human resource training projects were approved, receiving around 280 thousand dollars.

Because of its participation in the National Program of Training in Laboratory Biosafety for Brazilian Public Health Laboratories (Lacens), Fiocruz has contributed to training around 3,800 secondary-level and undergraduate professionals and 283 multiplying agents.

Besides that, still in the area of environmental surveillance, Fiocruz conducts research, trains human resources and develops methodologies for diagnosis. The Foundation also provides services (generally for the Ministry of Health) in laboratory diagnosis of environmental contamination by chemical pollutants (including solvents, pesticides and organic or inorganic micropollutants).
**Health Care**

**Specialized care**

Fiocruz performs actions of specialized care and technical cooperation with a few services of the Unified Health System network in the areas of women’s, child and adolescent health and of infectious diseases, mainly in the Fernandes Figueira Institute (IFF) and the Evandro Chagas Clinical Research Institute (Ipec). Clinical assistance to patients with infectious diseases is provided in the Oswaldo Cruz Institute (IOC) and in most of Fiocruz’s regional centers.

Regarding health care to patients with infectious diseases, Ipec is the institute that provides care to the largest number of HTLV-1 patients in the Americas and receives more than half of notified cases of American cutaneous leishmaniasis and paracoccidioidomycosis of the state of Rio de Janeiro.

Ipec also provides technical assistance for the Ministry of health and for state and municipal secretariats throughout the country, besides organizing courses and training programs for staff members of reference centers, family health teams and professionals in the area of epidemiological surveillance.

IFF is a reference center in Medical Genetics, Perinatal Diseases, Pediatric Surgery and Pediatric Infectious and Parasitic Diseases. The institute is also a reference in assistance to high-risk pregnancies and to newborns and children with severe diseases such as osteogenesis imperfecta and cystic fibrosis.

The area of specialized health care received investments for renovations, improvements and equipment renewals at IFF and Ipec. Thanks to the
ReforSUS Project, it was possible to invest an estimate of 4 million dollars in new technologies for Fiocruz’s assistance units. Therefore, the increase in the number of hospital beds, as well as other activities, such as laboratory and diagnostic imaging exams, was made possible.

**Assistance Activities at Fiocruz**

<table>
<thead>
<tr>
<th>Activities</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical consultation</td>
<td>225,361</td>
<td>265,401</td>
<td>223,070</td>
</tr>
<tr>
<td>Laboratory exams</td>
<td>220,482</td>
<td>236,520</td>
<td>347,722</td>
</tr>
<tr>
<td>Diagnostic imaging exams</td>
<td>27,745</td>
<td>29,042</td>
<td>37,362</td>
</tr>
<tr>
<td>Histopathological and anatomopathological exams</td>
<td>no data available</td>
<td>8,223</td>
<td>10,760</td>
</tr>
<tr>
<td>ST exams</td>
<td>428,981</td>
<td>273,785</td>
<td>395,844</td>
</tr>
<tr>
<td>Specialized care*</td>
<td>53,659</td>
<td>55,627</td>
<td>43,355</td>
</tr>
<tr>
<td>Home care</td>
<td>6,116</td>
<td>7,301</td>
<td>22,739</td>
</tr>
<tr>
<td>Day hospital care / partial hospitalization</td>
<td>5,315</td>
<td>9,419</td>
<td>5,553</td>
</tr>
<tr>
<td>Hospitalizations</td>
<td>4,066</td>
<td>4,068</td>
<td>4,193</td>
</tr>
</tbody>
</table>

*Physiotherapy, Speech Therapy, Psychology, Social Service, Mantoux tests, ECGs, Dentistry, Nutrition, Nursing, Family Health Program

The data were only collected regularly as of 2002 and refer to the total production of all of Fiocruz’s units that offer reference health services: IOC, IFF, Ipec, Ensp, CPqGM and CPqRR.

The health assistance services rendered at Fiocruz’s units have the integration of technology and humanization as well as the notion of extended general medicine as guidelines. These guidelines intend to reclaim values that are essential for health professionals, recommending transformations in the practice of health care. In accordance to that, many humanization programs and projects were implemented, such as projects for improving parents’ and children’s time together during hospitalizations, projects involving workshops with mothers of hospitalized children, the Health Play (Saúde Brincar) project and the Living Library (Biblioteca Viva) project.

Developing and transferring clinical protocols help IFF and Ipec improve the services provided. Another important aspect of the area of specialized care is the development of new technologies for assistance, such as Day Hospital Care and Home Care, which served more than 22,700 people in 2004.

Quality management actions are being implemented in Fiocruz’s hospitals (IFF and Ipec) by means of the Consortium for Brazilian Accreditation of
Health Systems (CBA) and will represent an increase in the quality of services provided. Besides assistance activities, Fiocruz’s cooperation with the health services network of the Unified Health System in the areas of women’s, child and adolescent health and infectious diseases are also noteworthy.

IFF is recognized as a National Reference Center of Health Promotion for the Child Health Program of the Ministry of Health. The institute is also one of the training centers for Integrated Care in Childhood Diseases (AIDPI). The Health Secretariat of the state of Rio de Janeiro has recognized the Neonatology Department of IFF as a Training Center for the State System of High-Risk Pregnancies. An agreement was settled for in-service training and distance-learning programs, as well as for consultancies on implementing neonatal Intensive Care Units and for clinical care following Intensive Care treatment.

Fiocruz also cooperates in the National Network of Human Milk Banks (BLH), a network that presently counts on 150 banks and is considered the largest and most complex network of the sort in the world. The Brazilian Network of Human Milk Banks is an initiative of the Ministry of Health and is carried out by the Health Care Secretariat (in the area of Child Health) and by IFF/Fiocruz.

**Basic Care**

The Health Center Germano Sinval Faria School (CSEGFS) of the Sergio Arouca National School of Public Health (Ensp) keeps 15 multidisciplinary individual consulting rooms, three rooms for groups and infrastructure for complementary services, which include actions within communities. Its mission is to train professionals to work in the area of basic health care and to promote the technological development of methodologies and processes in public health.

The main intention in developing methodologies and procedures is to promote health and humanize clinical assistance. The Family Health Program is being emphasized because of national policies currently prioritizing this strategy.

An important landmark for CSEGFS was its participation in the strategy of Local, Integrated and Sustainable Development (DLIS) in the Manguinhos community (an initiative of Ensp/Fiocruz, Rio de Janeiro’s municipal government, a few businesses of the city, NGOs and local participants in the Manguinhos Community Forum). This project congregated four large initiatives: (1) the reorientation of CSEGFS’s and Ensp’s health care actions,
emphasizing Family Health strategies; (2) the Open University Program, which performs health promotion actions in housing and sanitation; (3) the Territorial Laboratory of Manguinhos, whose objective is to generate knowledge on environmental and technological risks and their impacts on health together with high-school students in the region; (4) the Education and Research Group (carried out by researchers of various departments at Ensp, in collaboration with the directors of the School of Governance in Health) devoted to evaluating health promotion and local development programs.
Information on Education, Science, Health and Society

Between 2001 and 2004, Fiocruz has created new instruments of information and communication and has strengthened the already existing ones. In 2002, two virtual libraries were released: the Virtual Library on Public Health (Brazil), a subdivision of the Virtual Library in Health for Latin America and the Caribbean, and the Virtual Library in Health – History of Health. Both of them are the result of a partnership between Fiocruz and the WHO/PAHO/BIREME. This partnership created two other Virtual Libraries in Health: one on Breastfeeding and another on Infectious and Parasitic Diseases.

The Fiocruz Library Network, which unifies and integrates the Foundation’s ten libraries, was also created in 2002. The network has constituted a committee of institutional users responsible for establishing policies for improving the collection of international periodicals tuned to research areas and education activities at the Fiocruz. The Network has 258,290 books and theses in its catalogue and subscribes to 992 periodicals.

In the following year, the Web Portal for Theses and Dissertations in Public Health (featuring full texts) and the master’s degree in Management of Information and Communication in Health [a partnership between the Sergio Arouca National School of Public Health (Ensp), the Scientific and Technological Information Center (Cict) and the House of Oswaldo Cruz (COC)] were developed. Also in 2003, a new periodical was released: Educação, Trabalho e Saúde (Education, Labor and Health) – a biannual journal on subjects related to professional training in health from the perspective of the contemporary organization of labor.

This title joins the list of Fiocruz’s renowned periodicals, which include Memórias do Instituto Oswaldo Cruz (Memories of the Oswaldo Cruz Institute); Cadernos de Saúde Pública (Reports in Public Health); História, Ciência, Saúde – Manguinhos (History, Science, Health – Manguinhos); and Radis – Reunião, Análise e Difusão de Informação em Saúde (Radis – Gathering, Analyzing and Disseminating Information in Health). It should be mentioned that the circulation of Radis’ more than tripled between 2000
and 2004, from 160 thousand to 508 thousand copies. Moreover, between 2003 and 2004, two more issues of *Cadernos de Estudos Avançados do Instituto Oswaldo Cruz* (Report on Advanced Studies of the Oswaldo Cruz Institute) were published.

Since 1993, the **Fiocruz Publishing House** deals with four themes: public health; biological and biomedical sciences; clinical sciences; and social and human sciences in health. The objective is to cover the vast field of health and its various aspects. In 2004, the Fiocruz Publishing House published 18 new books and has now surpassed 160 titles in its catalogue.

### New releases and reprints of the Fiocruz Publishing House

<table>
<thead>
<tr>
<th>Indicators</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Releases</td>
<td>15</td>
<td>15</td>
<td>19</td>
<td>18</td>
</tr>
<tr>
<td>Reprints</td>
<td>4</td>
<td>13</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
<td>28</td>
<td>27</td>
<td>26</td>
</tr>
</tbody>
</table>

**The Fiocruz Publishing House maintains a constant production of new releases and reprints**

Fiocruz’s Health Channel produces TV programs to inform, update and educate more than 2.5 million professionals of the Brazilian health services. Its programs are broadcast to the entire country by satellite as well as over the internet. The project has a weekly program on the National Network of Educational TV that is also broadcast to universities’ and community TV channels. A partnership with the National Confederation of Transportation permits that the Health Channel reaches the 1,500 stations of the Social Service of Transportation and the National Transportation Training Service (SEST/SENAT) throughout the country. Moreover, since 2001 the project has gained international status: its programs have been shown in the network Asociación de Televisiones Educativas Iberoamericanas (Atei), whose headquarters are in Barcelona, Spain. Since 2004, the Health Channel daily broadcasts part of the programs produced by this network.

Since 2001, the Health Channel has produced a total of 1720 editions of the six following programs: *Bate Papo* (interviews on public policies in health); *Canal Aberto* (news reports on conferences, meetings, seminars and other health-related events); *Canal Saúde* (news stories on health and quality of life); *É com Você Cidadão* (dissemination of information on promotion of citizenship); *Ligado em Saúde* (in which guests specialists answer thematic questions asked by people on the streets); *Unidiversidade* (a conversation with university students about health and quality of health).

**VideoSaúde Distributor** coordinates Fiocruz’s participation on the University TV of Rio de Janeiro. It also works on recording, cataloguing, treating, producing and distributing the audiovisual products. Every year, VideoSaúde produces more than four thousand copies of the programs for its users, including the Unified Health
System, private institutions, schools, students, community organizations and NGOs. In 2003, VideoSaúde promoted the 4th National Video Festival during the 7th Brazilian Congress of Collective Health of the Brazilian Association of Graduate Studies in Public Health (Abrasco). It also conducted the 3rd VideoSaúde Workshop, which gathered professionals from Fiocruz and other institutions to develop new ways of producing health videos.

The Museum of Life is another remarkable instrument of information at Fiocruz. The Museum is part of the House of Oswaldo Cruz (COC) and teaches science and health in a creative and playful manner, through exhibits, interactive activities, multimedia, theater, videos and workshops. Its objective is to instruct the general public on the processes and progresses of science. Moreover, the museum fosters a reflection on the impact of science on people’s daily lives and promotes social inclusion. In 2004, more than 75 thousand people visited its spaces at the Fiocruz campus. Its traveling
exhibits, which have been visited by more than 48 thousand people, include the exhibit about the *100 Years of the Vaccine Revolt* (visited by almost 4,300 people).

In conclusion, it should be mentioned that the *Fiocruz Web Portal* is being developed in order to offer the public a unified insight into Fiocruz’s areas of research and actions and to organize the information on relevant themes for the health area.

### Figures from the Program of Information and Communication in Science and Technology in Health

<table>
<thead>
<tr>
<th>Products and services</th>
<th>Period</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2001</td>
</tr>
<tr>
<td>Visitors to the Museum, libraries or documentation centers</td>
<td>168,160</td>
</tr>
<tr>
<td>Users served by the Videosaúde Distribuidora, the Laboratory of Geoprocessing and the National Poisoning Information System (Sinitox)</td>
<td>-</td>
</tr>
<tr>
<td>Creation and development of products of disseminating information and educating in science and health</td>
<td>54</td>
</tr>
<tr>
<td>Creation and organization of scientific exhibits</td>
<td>53</td>
</tr>
<tr>
<td>Publishing of periodicals, catalogues, technical and scientific reports, manuals, inventories and database modeling</td>
<td>62</td>
</tr>
<tr>
<td>Development and publishing of technical and scientific publications</td>
<td>-</td>
</tr>
<tr>
<td>Items acquired for scientific collections</td>
<td>4,190</td>
</tr>
<tr>
<td>Conservation of historic buildings (architectural heritage)</td>
<td>1,182</td>
</tr>
<tr>
<td>Visitors to the Museum, to scientific exhibits and to Fiocruz’s website and searches on virtual libraries</td>
<td>498,000</td>
</tr>
</tbody>
</table>

### Social Communication

Between 2001 and 2004, Fiocruz’s Center of Social Communication (CCS) implemented new projects and consolidated products in the area of publishing, press services and communication through the internet.
Folha de Manguinhos, Fiocruz’s official information dissemination center, was modernized (changes in the format, content expansion and new design) in 2002 and became the Revista de Manguinhos. Currently, every new edition comprises six thousand copies that are distributed to opinion leaders such as journalists, congressmen and directors in the areas of health science and technology. The bulletin Linha Direta, whose target-public is the Fiocruz community, disseminates information on the programs developed and the activities performed by the presidency of the Foundation and its technical and managerial units.

RNA Mensageiro, CSS Comunica and Agenda Fiocruz are other means of communication destined for the Fiocruz community. RNA Mensageiro is a bulletin/message board with information on courses, events, training programs, etc. Between 2001 and 2004, forty-eight editions of the bulletin were released and an on-line edition also debuted. CSS Comunica is a leaflet handed out on campus whose objective is to establish a quick link between the presidency and Fiocruz community. More than 800 editions of CSS Comunica were produced and distributed between 2001 and 2004. Agenda Fiocruz is a weekly publication, which is also available on-line, which disseminates thesis presentations, inaugurations, visits and other events occurring at Fiocruz. Two hundred and forty editions were released from 2001 to 2004.

Between 2001 and 2004, press services provided by CCS resulted in more than 2,700 news stories and notes about the Foundation published in newspapers and magazines. More than 72 hours of news reports on Fiocruz were shown on TV and 6 hours of radio programming.

Moreover, since 2004, a weekly e-bulletin with links to stories available on the CCS website is sent via e-mail to journalists throughout the country who cover the areas of health, science and technology. There have been 48 editions of the e-bulletin with a good return rate in terms of published and suggested stories.

In terms of e-communication, the CCS website (www.fiocruz.br/ccs) was reformulated and become more dynamic. Today, it is updated on a daily basis and is functioning as a true “news agency”. Between January 2001 and November 2004, CCS produced and made available through its website almost 500 news stories on activities and research at Fiocruz. The quality of the work was acknowledged in the
newspaper, *Folha de São Paulo*, which presented the 100 best pages of science dissemination.

Ever since the bioterrorist threat, the CCS website has been offering a special service with information on biosafety, data on anthrax and guidance on how to proceed in the case of suspect mail. This webpage was viewed more than ten thousand times in only a few days and the website became a reference for people looking for information on bioterrorism.

Between 2001 and 2004, other examples also revealed the speed with which Fiocruz can offer information on public health to society. That was the case of two special articles published on the CCS website, one with information on dengue fever and the other on SARS.

*Fiocruz for You* is an event that deserves special attention. More than 40 thousand people attend each new edition. Five thousand children are vaccinated, hundreds of health exams are performed and one and a half hours of TV coverage are devoted to it. The figures show that the yearly immunization and health promotion campaign entitled *Fiocruz for You* in the Manguinhos campus has been a huge success and one of the major means through which Fiocruz shares its activities with the population. CCS is glad to have created it and to plan and coordinate it every year.

**Scientific Collections**

Fiocruz’s scientific collections are permanently being updated and have inestimable historic and scientific value. They also function as a link between the research, technological development, education, reference services and the dissemination of technical and scientific information carried out at Fiocruz.

The Foundation collaborates with both national and international scientific communities by permitting the access to this knowledge on epidemiological surveillance. There are ten different organized collections that are maintained
and preserved by the Oswaldo Cruz Institute (IOC). The first was developed by the former Federal Serum Therapy Institute of Manguinhos and the others where created throughout the Foundation’s more than 100 years of existence.

<table>
<thead>
<tr>
<th>Collection</th>
<th>Started in</th>
<th>Figures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entomological</td>
<td>1901</td>
<td>More than two million specimens</td>
</tr>
<tr>
<td>Helminthological</td>
<td>1907</td>
<td>39,520 specimens</td>
</tr>
<tr>
<td>Fungi culture</td>
<td>1922</td>
<td>1,700 lineages</td>
</tr>
<tr>
<td>Yellow fever</td>
<td>1931</td>
<td>500 thousand samples</td>
</tr>
<tr>
<td>Bacteria cultures</td>
<td>1930/1940</td>
<td>850 reference lineages and 47 thousand isolates</td>
</tr>
<tr>
<td>Malacological</td>
<td>1948</td>
<td>4,300 batches of neotropical gastropods</td>
</tr>
<tr>
<td>Bacteria cultures of the gender Bacillus</td>
<td>1979</td>
<td>800 lineages</td>
</tr>
<tr>
<td>Leishmania and Endotrypanum</td>
<td>1980</td>
<td>100 reference strains</td>
</tr>
<tr>
<td>Trypanosomes</td>
<td>1995</td>
<td>250 samples</td>
</tr>
<tr>
<td>Micotoxin-producing Fungi</td>
<td>1997</td>
<td>400 lineages</td>
</tr>
</tbody>
</table>

More than 126,096 people visited IOC’s scientific collections between 2001 and 2005.

Other of Fiocruz’s collections of biological reference include the entomological collection of the René Rachou Research Institute (CPqRR) and the cell, bacteria and fungi banks kept by the National Institute of Quality Control In Health (INCQS). They are available for visits by both public institutions and private users.

The Federal Government’s Pluriannual Plan (PPA) from 2005 merged the scientific collections to a new project entitled Preservation of Health, Scientific, Cultural and Historic Heritage.
Strategic Administration

Between 2001 and 2004, structures and processes regarding Fiocruz’s unique and exemplary democratic and participative organization have substantially evolved.

Finally, after 15 years, the Statute of Fiocruz was made official by the publication of Decree number 4725 in the Federal Official Journal which approved the organizational practices, including the election process of directors and directing bodies, such as the Board of Directors and the Intramural Congress. This was certainly the most important landmark in the period. Decree number 4725 was later regulated by the Ministry of Health’s Administrative Rule number 2376, which describes the by-laws and statute of the Foundation.

Great steps and improvements in Fiocruz’s managerial practices have been the organization of the 4th Intramural Congress, the institution of the Board of Directors as a place for analysis and dissemination of the institution’s main strategies, the implementation of new Technical Chambers and of the Executive Board of Directors and the creation of the Ombudsman Service.

In the end of 2002, the Plenary Session of the 4th Intramural Congress gathered close to 250 delegates to discuss Science, Technology and Innovation to Improve the Quality of Life. The themes discussed (subjects to be decided upon) included macro-policies for the institution particularly regarding the strengthening of the National System of Innovation in Health. The system is linked to the development strategy of the Health Production Complex (CPS), which gathers research in health and technological development, focusing on innovation.

The creation of the Program for Technological Development of Health (PDTIS) and the Program for Development and Technological Innovation in Public Health (PSTISP) as well as the construction of the Center for Technological Development in Health (CDTS) and the Vaccine, Biopharmaceutical and Diagnostic Reagent Prototype Plant (CPBR) were landmarks of the Plenary Sessions.
The decisions made at the Intramural Congress were also a political and institutional incentive for Fiocruz’s participation in the 12th National Health Conference, in the end of 2003, and in the 2nd National Conference on Science and Technology, in 2004, which further reveals the Foundation’s political and organizational ideas.

Two specific extraordinary sessions of the 4th Intramural Congress were carried out in the second semester of 2003. In one of these sessions, the by-laws and statute of the institution, which included the commitment to creating instances for debating and proposing reforms in the organization of Fiocruz’s units, was ratified. The objective was to define managerial criteria that fit the different missions and characteristics of each unit. The other extraordinary session went deeper into discussing strategic of the management of labor at Fiocruz. This session was the basis for a series of innovations that were mentioned in the chapter dedicated to human resources.

The first three meetings of the Assembly of Directors, a committee that gathers all of Fiocruz’s directors and superior advisers (DAS), were carried out between 2001 and 2004. The assembly’s objective is to perform a profound analysis of important matters and strategic decisions for the institution, thus, facilitating the Foundation’s dissemination, harmonization and internalization.

The main subjects analyzed in these meetings, in which 180 to 200 directors and superior advisers participated, were: the guidelines for the pluriannual plan for 2001-2004, in October 2001; matters regarding the 4th Congress, especially innovation in health, in June 2002; and monitoring, evaluation and control, in September 2004.
As to planning and corporate management, the period between 2001 and 2004 may be characterized as one of the most valuable in the history of the institution. For the first time, in 2001, a Pluriannual Plan was discussed and developed in order to serve as political and strategic guidelines for the presidency throughout the period. Although concise, the first pluriannual plan facilitated the major decisions concerning the strategic planning of the institution. In short, the pluriannual plan assumes that the integration between different activities at Fiocruz is one of institution’s strong points. This potential synergy offers many options for developing and for producing relevant results, which may further contribute to the implementation of the policies of the Ministry of Health and improve the health and quality of life of the population.

Another important aspect of the institutional plan was the effort to correspond to the Federal Government Pluriannual Plan (2001-2004). Even though it had a reduced impact on Fiocruz’s strategic planning, the effort has paved the way for more influence on the management of the institution, a process which was further advanced by the development and implementation of the second Federal Government Pluriannual Plan (for 2004-2007).

In the second semester of 2003, together with the Technical Cooperation Department of the Public Management Secretariat of the Ministry of Planning, Budget and Management, Fiocruz released the corporate self-diagnosis of the institution. This is a pioneer process for federal institutions and facilitated in pointing out the institution’s strengths. The self-diagnosis, however, focused on
systematizing possibilities for improving almost all kinds of practices concerning planning, management and evaluation of results.

In 2004, the institutional planning system underwent a radical process of managerial modernization in great part because of the results obtained from this self-diagnosis. Therefore, the institutional planning system (whose efforts geared towards the development of tactical solutions designed to consolidate the normative program of the Foundation’s units) was made into an instance for organizing, systematizing, formulating and evaluating the institution’s strategic plan (developed in Fiocruz’s collective decision-making and advisory councils).

In this context, the active influence of Fiocruz’s planning system on the revision of the programs and actions established by the Federal Government in the Pluriannual Plan for 2004-2007 is noteworthy. This way, the Foundation’s objectives are all aligned with the objectives of the Federal Government for the four-year period. Therefore, it was the first time that Fiocruz’s previously defined objectives (POM) and the Federal Government’s programs and actions (established in the Pluriannual Plan and the Annual Budget Plans) would coincide, although in two different hierarchical levels. Later on, the plan, which included the yearly physical and budgetary plans, was named the PPA-Fiocruz.

Furthermore, a system for monitoring, evaluating and controlling the plan was established. Beginning in 2005, this system will observe the tactical and strategic development of the plan, in order to optimize processes, assure transparency and adjust the institutional plan.

In conclusion, the Integrated System of Managerial Information (SIIG) was incorporated in order to assist the plan. This system should be implemented in Fiocruz's units in the first semester of 2005 as a corporate system and an instrument for planning.

**Labor Administration**

Over the last few years, public institutions, especially those related to research, education and technological development (which include Fiocruz), underwent a reduction in the number of staff members. The reduction was due to policies for reducing the size of the state implemented in the 90’s, reduction in the number of positions available and the retirement boom in 2003 following changes in the law.

After intense negotiations, the Federal Government authorized that a civil service exam be conducted in 2002 for filling 326 positions, including 148 for technologists, 82 for researchers and 60 for Science and Technology analysts. In 2004, 35 candidates that had been approved in 2002, were called on to fill other positions, elevating the number of filled vacancies to 361. Another strategy of incorporating staff members was the so-called redistribution, that is, the
assimilation of staff members from other institutions. This policy represented an increase of 12.9 percent in the work force, in relation to April 2001.

Fiocruz’s staff members are comprised of 45.4 percent of formally employed individuals and 56.4 percent of individuals under other types of contracts. Around 1,350 people work at Fiocruz with grants and 230 as interns. These people are involved in programs of human resource training that will produce knowledge in the area of technology and management.

Between 2001 and 2004 there was a 77 percent increase in the number of contracts with companies, a 73.9 percent reduction in the number of contracts with individuals and an increase in the number of formally employed staff members (that is, public officials). These figures demonstrate that protected labor is now a priority in hiring policies.

Fiocruz now has the challenge of changing outsourced employees into formally hired individuals, a guideline determined in the Extraordinary Plenary Session of the 4th Intramural Congress, in November 2002. Therefore, the Ministry of Planning, Budget and Management is going through a request for a new civil service exam to fill a thousand positions, which may be carried out in 2005.
As to the schooling level, 79.03 percent of permanent active public officials have completed undergraduate or graduate studies and only 2.19 percent have not yet completed secondary school.

One of the most important means of promoting the so-called participative management was also created between 2001 and 2004. The Table of Negotiations is a means of permanent interchange between Fiocruz's directors and workers' representatives.

The Technical Chamber for Labor Administration was created in order to assure the participation of Fiocruz’s units in the formulation, development and management of policies and guidelines for human resources at Fiocruz. The Chamber has now been institutionalized as an important discussion forum for debates and proposals. It has been functioning since 2003 and houses two sub-chambers: The Sub-Chamber for Counseling on Career Plans and the Sub-Chamber for Performing Decentralized Activities regarding Human Resources.

In order to strengthen the interchange between directors and the community at Fiocruz, the Presidency of the Foundation called the already mentioned Extraordinary Plenary Session of the 4th Intramural Congress which occurred in November of 2003 under the issue Valuing Public Officials: a Challenge for the New Administration. The recommendations proposed at the meeting served as guidelines for the Technical Chamber of Labor Administration between 2003 and 2004.

The meeting led to the creation of a broad and consistent training program. This program’s priorities were developing capacity in management; establishing teams; professionalizing the work force and improving the quality of the work, of the workers and of the workers’ health. The Program for Professional Training and Institutional Development includes the creation of Vocational Master’s degrees;
the Specialization Course on Human Resources; the Technical Specialization Course on Human Resources; the Elementary School Program; The Secondary School Program; and the Technical Specialization Course on Public Policies of Health Science and Technology. In 64 different courses, 1,444 workers have been trained.

Between 2001 and 2004, a Model for Evaluating Performance was also created. This model seeks to establish relations between individual, team and institutional performance, applying the results to the formulation of a Development Plan that will encompass all of these dimensions. Only the first part of the model has already been implemented.

As to improving the quality of health of the worker, two projects have been implemented in the 2001-2004 administration. The Integrated System for Worker Health, whose intention is to incorporate the workers’ social environments to efforts towards promotion, prevention, assistance, treatment and rehabilitation, emphasizing multidisciplinarity, besides the knowledge of the workers, which are active participants in the process. The Healthy Fiocruz Program, which is coordinated by the Human Resources Board (Direh) and developed together with the Vice-Presidency for Reference Services and the Environment (VPSRA), introduces a new concept of health promotion regarding the organization of space.

New innovating instruments and processes for managing human resources and strengthening the strategy of decentralization are being created. The guideline concerning decentralization in the Pluriannual Plan takes place through the Local Planning for Human Resources Program, the Program for Management Development (Progestão), the Program for Development and Management (PDG) and the Work Regulation Program, under the criteria of decentralizing and strengthening services concerning human resources at Fiocruz.

Administration of Budgetary and Financial Resources

Fiocruz managed to significantly increase financial resources transferred by the Federal Government to the Foundation. These resources almost doubled between 2001 and 2004. This is a consequence of the political, technical and scientific importance of the activities carried out at Fiocruz and the efficiency with which resources are used at the Foundation, not only in specific areas but also in the actions of further improving the infrastructure of the Foundation (which is permanently being modernized, expanded and adjusted to comply with biosafety rules). Resources from the Federal Government, however, represented only one fourth of the resources Fiocruz managed in 2004.
Financial resources from the Federal Government managed by
Fiocruz between 2001 and 2004 (in reais)

Thus, Act number 10,837, which approved the Annual Budget Act for 2004 on January 16th 2004, has allocated around 180 million dollars for Fiocruz from the Federal Government (213 million for covering operating costs and 243 million for human resources). The law underwent many adjustments during the period, which increased Fiocruz’s budget for covering operating costs in 22 million dollars (25.9%) and the budget destined for human resources in around 17 million dollars (17%). Besides that, the law established a maximum of 9.6 million reais (around 3.8 million dollars) for external resources (that is, those obtained by Fiocruz’s own efforts).

The Foundation also obtained resources from other sources, mainly from the Ministry of Health, through the establishment of new agreements and the promulgation of new Administrative Rules. The total figure was of 509 million reais (around 200 million dollars), destined to the implementation of programs that were not on the Foundation’s budget and that were associated in great part to the production of medications and immunobiologics and the implementation of the Popular Pharmacy Program (which was created with resources from the Fund for Fighting and Eradicating Hunger).

In conclusion, the Foundation for Supporting Scientific and Technological Development in Health (Fiotec), an agency for proving support to Fiocruz, has negotiated and gathered around 34 million dollars. This amount was used by Fiocruz’s various units to pay for new equipment, input products and services, employed in the implementation of hired or accorded projects.
In 2004, Fiocruz used around 1.116 billion reais (around 440 million dollars). This figure includes the costs of human resources and an estimate of material expenses (input products and services) acquired through agreements with Fiotec: 45 percent came from non-budgeted sources, 24 percent from the Federal Government, 22 percent from human resources, around 8 percent obtained by Fiotec and one percent from Fiocruz’s own resources (the maximum amount established).
In 2003, Fiocruz increased its total resources in approximately 37.5 percent. Fiocruz’s resources coming from external sources were increased in 267 percent (concerning Fiotec) and 53 percent by means of agreements and the promulgation of administrative rules.

### Percentages of financial resources

<table>
<thead>
<tr>
<th>Source</th>
<th>2003</th>
<th>2004</th>
<th>% Variation 2003-2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Treasury</td>
<td>28%</td>
<td>24%</td>
<td>10.4%</td>
</tr>
<tr>
<td>Own Resources</td>
<td>1%</td>
<td>1%</td>
<td>9.2%</td>
</tr>
<tr>
<td>Non-budgeted</td>
<td>41%</td>
<td>45%</td>
<td>53.4%</td>
</tr>
<tr>
<td>Fiotec</td>
<td>3%</td>
<td>8%</td>
<td>267.8%</td>
</tr>
<tr>
<td>Human Resources</td>
<td>27%</td>
<td>22%</td>
<td>12.0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
<td><strong>37.5%</strong></td>
</tr>
</tbody>
</table>

Therefore, Fiocruz’s operation costs and capital expenditures using resources from the National Treasury (Federal Government) went from 28 to 24% and from 27 to 22% in 2003 and 2004 respectively.

Even though there is no information regarding the destiny of resources, particularly those appearing in budgetary items, an estimate clearly distinguishes the use of resources according to its sources. Therefore, around 84 percent of resources not previewed in the budget and gathered by means of agreements and the
Throughout the last four years, Fiocruz has strongly invested in infrastructure. The new building of the Joaquim Venâncio Polytechnic School, inaugurated in August 2004 by the President of Brazil, Luís Inácio Lula da Silva, is among the Foundation’s major actions in infrastructure. An agreement settled in 2002 between Fiocruz and the Vocational Education Expansion Project (Proep) of the Ministry of Education, granted 3.5 million reais (around 1.4 million dollars) for the construction of the building. The new building covers over 53,000 square feet, houses 24 laboratories and will serve a thousand students each year.

The Federal Government granted 6 million dollars in non-budgeted resources for the purchase of the Pharmaceutical Industrial Plant, in the neighborhood...
of Jacarepaguá, in Rio de Janeiro. The new plant was incorporated to the Drug Technology Institute (Farmanguinhos) and will allow a fivefold increase in the capacity of production in 2005. The Immunobiological Technology Institute (Biomanguinhos) applied around 37 million reais (around 14.8 million dollars) between 2001 and 2004 to modernize its industrial plant (which produces viral and bacterial antigens) and to start the construction of its prototype plant.

The functionality and the humanization of the hospital environment were the guidelines that served as principles for the remodeling of the Fernandes Figueira Institute (IFF). The spaces of the Pediatric Ward were reduced to better serve the needs of the medical team and to reduce the risk of hospital infections. Antechambers for sterilization and special rooms for preadmission procedures were constructed and sinks were installed in various places. The unit for patients in severe conditions was also remodeled. The hospital spaces were made more compliant with biosafety rules with the creation of a waste treatment area and the isolation of hospital beds.

The Laboratory of Measles and Respiratory Viruses, the Hantavirus Infection Laboratory and the Schistosomiasis Laboratories of the Oswaldo Cruz Institute (IOC) also underwent remodeling processes. The remodeling allowed the laboratories to be registered as reference centers of the World Health Organization (WHO). Furthermore, IOC’s Pathology Laboratory was also remodeled in order to receive a confocal laser scanning microscope, an equipment that, besides being a very powerful tool, is also very sensitive to physical shocks.

Fiocruz’s regional centers also underwent improvements. The remodeling of the animal facility of the René Rachou Research Center (CPqRR), in Minas Gerais, is currently underway. As to the Aggeu Magalhães Research Center (CPqAM), in Pernambuco, the Josué de Castro Pavillion, where the Collective Health Education Center (Nesc) operates, was inaugurated. The Virology Laboratory at CPqAM was also remodeled.

Since 2002, the Leônidas and Maria Deane Research Center (CPqLMD), in the Amazon, which operated in lands owned by the National Health Foundation (Funasa), now functions in its own headquarters. Moreover, the Center of Epidemiology and Biostatistics of the Gonçalo Moniz Research Center (CPqGM) will start operating in a new facility. This facility will house the databases of research conducted on molecular epidemiology of the human genome. Besides that, a unit for manipulating and freezing mice embryos and for the genetic control of mice lineages was constructed.
The Brasilia Regional Board (Direb), which only held a few offices on the fourth floor of the building of the Ministry of Health, was granted the basement of the building, which was totally remodeled and, in which, an auditorium, two classrooms and a computer room were constructed.

Other units and centers were also improved between 2001 and 2004: the Sergio Arouca National School of Public Health (Ensp), the old Evandro Chagas Hospital (which was made into the Evandro Chagas Clinical Research Institute – Ipec), the National Institute of Quality Control in Health (INCQS), Farmanguinhos, The Worker Health and Human Ecology Study Center (Cesteh), the Leprosy Pavilion, the Nursery, the Manguinhos Library, the Residential Village, and the Security Service of the Campus Administration Board (Dirac).

A project for the construction of a 322,000 square-foot pavilion to house the Center for Technological Development in Health (CDTS) is being developed. Moreover, the process of transforming two old warehouses previously used by Dirac for workshops into the new Museum of Life is in a very advanced stage.

Within the Environmental Management Program, one the most important actions carried out between 2001 and 2004 was the recovery of the campus’s Sewage Treatment Station (with the installation of a more modern treatment system).
International Technical Cooperation

The last four years were marked by an increase in the output of the Office for International Cooperation (ACI), not only in obtaining but also in offering technical cooperation, the latter especially for Latin America and Portuguese-speaking Africa. A total of 44 new agreements were signed with institutions of other countries between 2001 and 2004. The creation of the Technical Chamber of International Cooperation was approved by the Intramural Congress and the Board of Directors. The project for the creation of the Nucleus for International Health, a virtual space for the implementation of an improvement course on the subject and for gathering Fiocruz professionals who are interested in acquiring more knowledge in the field, was likewise elaborated.

Fiocruz has strengthened its relationship with the Brazilian Cooperation Agency (ABC) of the Ministry of Foreign Relations. The President of the Foundation was assigned as the Brazilian representative in the directing bodies of the World Health Organization (WHO). Fiocruz’s researchers have been representing the Brazilian government in the Joint Coordinating Board of the Tropical Disease Research Program of the WHO.

Fifty-six actions were performed together with the WHO and the Pan-American Health Organization (Paho). The Center for Drug Policies of the Sergio Arouca National School of Public Health (Ensp) and the Center for Vocational Training of the Joaquim Venâncio Polytechnic Health School (EPSJV) were approved as WHO Collaborating Centers. The launch of the Virtual Library (Bireme); actions concerning Distance Learning; the work carried out at the preparatory phase of the Rio +10 World Conference and the production and distribution of vaccines were performed together with Paho. Fiocruz also cooperates with or receives cooperation from Unesco, Unep, Unaids, Unicef and other international institutions.

As to multilateral cooperation, Fiocruz’s participation (together with TDR/WHO, Doctors without Borders, the Pasteur Institute, India’s Medical Research Council and the Ministries of Health of Malaysia and Kenya) in the elaboration of DNDi (the
Drugs for Neglected Diseases Initiative) should also be mentioned. In the context of
the Trilateral Program between Brazil, India and South Africa, Fiocruz has established
a cooperation agreement with India’s Medical Research Council and South Africa’s
Medical Research Center.

Fiocruz also participates in activities of Mercosul, especially those related to the
training of human resources and Science and Technology in Health. Together with
the Community of Portuguese-Speaking Countries (CPLP), the Foundation is
developing a program for strengthening and improving education in Public Health.
This is an Angola and Mozambique based program with distance-learning branches
in Guinea Bissau, Cape Green and São Tomé and Príncipe. Fiocruz’s actions in the
Portuguese-speaking Africa and East Timor were also supported by the Japanese
International Cooperation Agency (Jica). In the 80’s and 90’s, Fiocruz received only
30 students from Portuguese-Speaking African Countries (Palops), while in the four-
year period covered by this report, this figure increased to more than 70 students.

Over the last four years, bilateral cooperation was significantly expanded in many
Latin American countries, including courses on health administration in Argentina
and Chile, technical support for the production of medicines in Venezuela and the
urgent export of 3.5 million doses of the yellow fever vaccine to the same country.
Previously, the Foundation had supplied Peru with 1.6 million doses of the vaccine
and other countries of the region with smaller amounts. The partnership with the
Scientific Complex of Cuba is facilitating the transfer of technology concerning the
production of interferon alpha and erythropoietin to Fiocruz, which could generate
a yearly economy of around 16 million dollars to the Brazilian National Treasury.

Moreover, Fiocruz has assumed the commitment of studying the possibility of
building a production unit for manufacturing antiretroviral drugs in Mozambique.
Fiocruz would be responsible for conducting this project.

The cooperation with Canada, financed by the Canadian International Development
Agency (Cida) and operationalized by the Canadian Public Health Association (CPHA),
let to an increase in the array of education and service activities in the field of health
promotion at Ensp. Agreements with the German and Russian governments have led to
scientific interchange in tropical medicine, virology, molecular biology and entomology.

As to France, the interchange of researchers carried out since 1989 with the support of the
National Institute of Health and Medical Research (Iserm) has continued. This includes the
creation of an immunology laboratory in association with France. The Institute of Research
for Development (IRD) keeps French researchers at Fiocruz for relatively long periods of
time. IRD has also financed the first mission to Senegal and Guinea Bissau (which Fiocruz
participated in), in which the cooperation for improving Public Health laboratories was
proposed. Moreover, the historic links between Fiocruz and the Pasteur Institute were
reaffirmed in October 2004 with the establishment of a new agreement redefining
the priorities for cooperation. In December 2004, Fiocruz was invited to integrate the
International Network of the Pasteur Institute and is currently studying the creation of the Doctoral School Pasteur-Fiocruz for advanced vocational education in Public Health.

The Interinstitutional interchange programs, not only with France, but also with the United States, deserve highlight. In 2001, Fiocruz has established a Memorandum of Understanding with Fogarty International of the National Institutes of Health (NIH). Afterwards, the Foundation settled an agreement with the National Institute of Allergy and Infectious Diseases (Niaid), in which the possibility of intramural postdoctoral training is analyzed. Fiocruz’s technicians visited the Center for Disease Control (CDC) to seek guidance on the architectural development of the Center for Technological Development in Health (CDTS). On the other hand, Fiocruz has been developing extramural projects supported by NIH in the areas of HIV/Aids, dengue fever, and leptospirosis, among other diseases. The Foundation has received more than 20 million dollars from 36 projects in the last four years.

The number of foreign visitors at Fiocruz went from 76 to 309 between 2001 and 2004, which reveals an increasing interest for the Foundation and the intention to establish scientific and educational interchange with it. International travel for the participation in expert groups and international meetings, as well as to render consultancies to other countries, significantly increased from 207 in 2001 to 319 in 2004.

Social Projects

Fiocruz’s object areas have always had a strong social character. Besides these institutional activities, a great number of social projects intending to improve the quality of life of underprivileged populations should be taken into account. This way, Fiocruz promotes employment, increase of income, education, vocational training and social integration.

Through an agreement with the National Federation of the Hearing and Speech Impaired (Feneis), Fiocruz hires hearing-impaired individuals to work as assistants, messengers and administrative clerks, among other occupations. Presently, 160 hearing-impaired individuals work at the Foundation.

In the Fazendo e Aprendendo (Doing and Learning) Program, a partnership with the São Martinho Association, Fiocruz teaches gardening and office and laboratory services to adolescents from 16 to 18 years of age and former street children. They are formally employed, receive minimum wage salary, receive instructions from a “master volunteer”, attend extra school classes twice a week and are offered psychological care (all financed by the Foundation). More than 150 young individuals have been through the program, many of whom were subsequently hired by companies.

Fiocruz’s formally employed workers and service providers that have not yet completed elementary school have the opportunity of continuing their education
inside the Foundation during working hours. In order to increase the level of education of its employees, Fiocruz also maintains the Secondary School Program.

Every year at the National Multivaccination Day, Fiocruz’s Manguinhos campus receives an average of 50 thousand visitors to a fair known as Fiocruz for You. The vaccine station has the record of vaccinating almost six thousand children on a single day. Various cultural, artistic, sport and education activities are also provided to the population. There is a mini-laboratory simulating the manufacturing process of vaccines and a gigantic science fair where people can get information on the prevention of Sexually Transmitted Diseases/Aids, breastfeeding, disease vectors, parasites and intoxications. Glucose, cholesterol and blood pressure exams are offered free of charge.

The Open University, an education and labor program created in 1994, whose first action was to implement paper waste separation for recycling at Fiocruz, has the objective of reducing unemployment, increase income, improve the quality of life and raise awareness concerning environmental preservation at Manguinhos. The project led to the creation of the Freelance Workers Cooperative of the Manguinhos Complex (Cootram). Today, the cooperative has 1,300 members that perform activities such as gardening, cleaning and maintenance of Fiocruz’s equipment. Dance, music, capoeira (a typical Brazilian martial art), children’s theater and physical education classes, besides elementary and secondary school education for young individuals and adults are offered by Cootram’s cultural center, which operates at the Juscelino Kubisteche Integrated Center for Public Education (Ciep).

The process of social mobilization initiated at the Open University gave rise to the Program of Local, Integrated and Sustainable Development (DLIS) in the community of Manguinhos. It is an innovative experience within the health promotion strategy of the Sergio Arouca School of Public Health (Ensp).

Fiocruz has a wide array of projects concerning health promotion. In the Program for the Health Care of the Elderly, for instance, people with more than 60 years of age not only receive geriatric care, but may also join tours, events, and literacy, dance, singing and arts and crafts courses. More than 200 people are enrolled in the program, whose objective is to promote health, increase autonomy and build self-esteems of the elderly. The Terrapia Project is intended for people that are interested in changing habits and adopting health-related natural practices, which includes performing physical activities and eating healthy.

There are also programs for supporting patients with diseases such as sickle-cell disease and hepatitis type C. Moreover, there are various projects concerning Sexually Transmitted Diseases/Aids. The Leônidas and Maria Deane Research Center (CPqLMD), for example, carries out many activities with low-income HIV patients in the city of Manaus, in the state of Amazonas, for instance, experience-sharing groups, visits to patients’ home, leisure and arts and crafts workshops. Furthermore, a stand is set in the main street of the Manguinhos complex to provide information
on Sexually Transmitted Diseases/Aids, distribute condoms and encourage prevention. The Solidarity Bazaar is organized once a month with donations from employees of the Health Center Germano Sinval Faria School (CSEG). The money gathered is used in emergencies with HIV patients and their families. There are also other projects such as the Youth Group in Sexually Transmitted Diseases/Aids and the Program for Aids Prevention at Carnaval in Salvador.

The objective of the Health Agents in Chemical Dependence is to actively intervene in problems related to drug use, abuse and dependence. The program also employs and provides an income to former chemical dependants, which usually have problems finding jobs. Moreover, the Health Agents in Alcoholism program has registered a 40 percent average recovery rate.

The underprivileged communities in the outskirts of Fiocruz are the targets of many of the Foundation’s social projects. Through the Arts and Crafts Workshop, women from the community of Manguinhos not only have the opportunity to socialize, but also to acquire a new ability in order to help complement family income. Moreover, 70 youths of the same community also regularly participate in the Black Heritage project, which offers workshops and classes on capoeira and dances of African origin. There are also initiatives to resolve social and environmental problems of the Manguinhos Complex, which involves, for example, improvements in housing and sanitation.

The Center for Legal Assistance Support to Communities offers free legal assistance inside the nearby favelas three times a week. An average of 15 cases (concerning all judicial areas, except crime) are taken to courts every month. The Access to the Digital World project is also intended for the underprivileged population living in communities nearby Fiocruz and not only offers courses on computers but also provides internet access and a database on science and health.

The following projects in the field of education should also be mentioned: the ABCs of Scientific Education; the Hands On project, which intends to improve science education in public schools; the Preparatory Course for Secondary School Equivalency Exams, which allows youths and adults of the community of Manguinhos to continue their academic lives; the Literate Brazil program, which was coordinated by the Ministry of Education (MEC) and whose Rio de Janeiro’s edition was organized by Fiocruz and the NGO Alfali. Fiocruz also participates in the Hunger Zero Program, in a partnership with the Federal Government.

In conclusion, there are projects at the Fernandes Figueira Institute (IFF) that intend to make the hospital environment less hostile to children and, thus, favor their recovery. This is the case of the Health and Play and the Living Library projects.
Institution Chart

Board of Directors

Presidency

Vice Presidencies:
Research and Technological Development
Education and Human Resources
Institutional Development, Information and Communication
Reference Services and the Environment

Units Directly Assisting the Presidency

- Cabinet
- General Attorney’s Office
- International Advisory Board

Technical-administrative Units

- DIRAC
- DIRAD
- DIREH
- DIPLAN

Technical Support Units

- CECAL
- CICT

Technical-scientific Units

- IFF
- IOC
- CPqAM
- CPqRR
- CPqLMD
- CPqGM

Units Directly Assisting the Presidency

- Social Communication
- Audit Department

Biomanguinhos — Immunobiological Technology Institute
CECAL — Laboratory Animal Breeding Center
CICT — Scientific and Technological Information Center
COC — Oswaldo Cruz Institute
CPqAM — Aguêa Magalhães Research Center/Recife, Pernambuco
CPqGM — Gângalo Maria Research Center/Recife, Pernambuco
CPqLMD — Leônidas and Maria Deane Research Center/Manaus, Amazonas
CPqRR — Raul Rachou Research Center/Belo Horizonte, Minas Gerais
DIPLAN — Strategic Planning Board
DIRAC — Campus Administration Board
DIRAD — Administration Board
DIREB — Brasília Regional Board
DIREH — Human Resources Board
ENSP — Sergio Arouca National School of Public Health
EPSJV — Joaquim Vendrúscolo Polytechnic Health School
Farmanguinhos — Drug Technology Institute
IFF — Fernandes Figueira Institute
IOC — Oswaldo Cruz Institute
INCQS — National Institute of Quality Control in Health
IPEC — Evandro Chagas Clinical Research Institute

Farmanguinhos

Biomanguinhos

CPqAM

CPqRR

CPqLMD

CPqGM

TIOS

COC

Enservnas

Enservnas
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Brasília Regional Board Chief - www.direb.fiocruz.br
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Fiocruz Employee Association
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Human Resources Board Director – www.direh.fiocruz.br
Márcia Teixeira

Campus Administration Board Director – www.dirac.fiocruz.br
Maria da Cunha Lana

Technical-scientific Units

Oswaldo Cruz Institute – www.ioc.fiocruz.br
Renato Sérgio Balão Cordeiro

IOC is one of the most important Brazilian biomedical and biotechnological research institutes in the area of health. Many of the institute’s laboratories are recognized as national and international reference centers for epidemiological surveillance. It has recently mastered the avian influenza virus life cycle (in 2002) and patented a yellow fever infectious clone (in 2003).

The institute’s mission is to promote policies, management actions and general actions concerning research, as well as to stimulate the technological development, train human resources and render reference services in the biomedical field. Moreover, IOC is also committed to information and communication actions.

IOC is Fiocruz’s oldest unit. It was founded as the Federal Serum Institute in 1900 and maintains important scientific collections, such as the entomological collection, which is presently comprised of more than two million insects. Some of these collections were created in the early 1900s.

Among the diseases studied by IOC are Chagas disease, Aids, leishmaniasis, schistosomiasis, malaria, dengue fever, yellow fever, bubonic plague, leptospirosis, filariasis, leprosy, tuberculosis, respiratory infections, onchocerciasis, meningitis, measles, rubella, hepatitis, gastroenteritis, cholera and other types of enteritis. Inflammatory processes and natural products have also been researched by the institute.
Gonçalo Moniz Research Center – www.cpqgm.fiocruz.br
Lain Carlos Pontes de Carvalho

CPqGM’s mission is to develop and implement activities and actions concerning biomedical research, education, training of human resources and reference assistance oriented towards the promotion of the public health in the state of Bahia and in Brazil. The center conducts research on pathology, classic and molecular epidemiology, molecular biology, parasitology, and immunology of both regionally and nationally relevant diseases.

One of the center’s laboratories (the Advanced Laboratory of Public Health – Lasp) is listed as a reference center for the isolation and characterization of HIV-I in Brazil. Pioneer studies on other retroviruses, such as HTLV-I and HTLV-II, which are similar to the Aids virus, are also conducted there. CPqGM’s research on the use of stem-cells in Chagas disease patients should also be mentioned.

René Rachou Research Center – www.cpqr.fiocruz.br
Roberto Sena Rocha

Fiocruz’s unit in the city of Belo Horizonte is a reference in four of its areas: schistosomiasis control, clinical care and therapy against leishmaniasis, biology and epidemiology of Chagas disease and vectors of leishmaniasis.

Research conducted at CPqRR on the biology, immunology, physiology and epidemiology of and therapy against infectious and parasitic diseases are also important. Natural products, aging and risk behavior, among other fields are also being studied.

CPqRR has been functioning for more than half a century and its objectives are to produce, adapt and transfer scientific knowledge and technology in health. By integrating research, training of human resources and service rendering, the center offers strategic support for the Unified Health System (SUS) and improves the health of the population.

Aggeu Magalhães Research Center – www.cpqa.fiocruz.br
Rômulo Maciel Filho

The center was created in 1950 in the city of Recife and, today, is considered a reference unit in filariasis, bubonic plague and culicidae vector control by the Ministry of Health and in schistosomiasis by the World Health Organization (WHO). CPqAM also collaborates with the WHO in the fields of health and environment.
The center is dedicated to studying and fighting the major endemic diseases in the Northeast of Brazil. Within CPqAM, the Center for Studies in Public Health (Nesc), for example, trains specialized professionals for serving the Unified Health System (SUS).

CPqAM produces antigens and performs tests for malaria and Chagas disease. Its mission is to conduct research on tropical medicine, pure and applied biology and public health; promote technological development; train new researchers; serve as technical advisors for SUS and scientific and technological institutions; and participate in the National System of Information in Health and Science and Technology.

Leônicas and Maria Deane Research Center – www.amazonia.fiocruz.br
Luciano Medeiros de Toledo

CPqLMD is Fiocruz’s newest unit. The unit has the goal of recovering the pioneer work carried out by Fiocruz’s scientists in historical expeditions in the Amazon in the beginning of the 20th century. Currently, the unit has been researching Indian populations, sex workers, and populations living nearby rivers, in urban peripheral areas and in the Amazon agricultural frontier.

The center’s efforts are concentrated in implementing actions in the fields of virology, mycology and phytotherapeutic products, as well as in monitoring and analyzing disease-related situations in the Eastern Amazon. CPqLMD has been carrying out health research and education activities, focusing on both the biodiversity and the social diversity of the Amazon.

Sergio Arouca National School of Public Health – www.ensp.fiocruz.br
Jorge Zepeda Bermudez/ Antonio Ivo de Carvalho

The production of knowledge and service rendering in public health; training of specialized human resources through, for instance, master’s and doctor’s degree programs; and the technical cooperation with various states and municipalities in Brazil are Ensp’s major fields of action. Since its creation, in 1954, the School has been dedicated to research on the improvement of the quality of life, disease prevention and social sciences applied to the health field.

Ensp was a very important factor in the development of projects and proposals that would later become the Unified Health System (SUS). In order to further improve SUS, Ensp conducts studies on planning, programming and evaluating health systems, services and organization.
Ensp is also managing the School of Governance in Health (a strategic reorientation which intends to contribute to the training of new leaders and the expansion of intelligence in health) and the Distance-learning Program (destined to institutions and professionals involved in the administration of health systems and services).

**Joaquim Venâncio Polytechnic Health School** – [www.epsjv.fiocruz.br](http://www.epsjv.fiocruz.br)

André Malhão

The school integrates activities in the areas of education, research and technical cooperation to offer professional education in health on a nationwide level and primarily for secondary-level professionals working for the Unified Health System. EPSJV has been training new technicians and improving the training of professionals, providing them with tools for efficiently responding to the demands of the contemporary world. The school also trains new teachers for permanent education projects.

EPSJV works in strategic areas for public health and for health science and technology. It offers courses in the fields of health surveillance, care, information and management and on laboratory practice and equipment maintenance. The school also seeks to develop new strategies for teaching youths and adults and new didactic/pedagogical material for education in health.

The school actively participates in the development of national and international policies formulated by the Ministry of Health, the Pan-American Health Organization (PAHO) and by the World Health Organization for education and technical cooperation in health. The WHO recognized EPSJV’s work by making it a Collaborating Center.

The School is the headquarters of the Work Station Health Technicians Observatory and of the Technical Secretariat of SUS’s Network of Vocational Schools (RET-SUS). EPSJV also coordinates the Program for Training of Local Agents in Health Surveillance (Proformar) throughout the country and is responsible for the scientific journal *Trabalho, Educação e Saúde* [Labor, Education and Health].

**House of Oswaldo Cruz** – [www.coc.fiocruz.br](http://www.coc.fiocruz.br)

Nísia Verônica Trindade de Lima

The House of Oswaldo Cruz preserves the memory of Fiocruz and maintains its architectural heritage. It performs activities on research, education, documentation and dissemination regarding the history of public health and biomedical sciences. The House also keeps the personal files of Oswaldo Cruz, Carlos Chagas and Belisário Penna. Thanks to the Virtual Libraries Program, part of the House’s archives can be accessed through the internet.
The House of Oswaldo Cruz was created in the 1980’s and conducts multidisciplinary research on history and sociology of science and culture; history of public policies and health institutions and professions; history of the production and use of immunobiologicals; history of medicine and diseases, and philosophy of life sciences and health.

The House also coordinates the Museum of Life, which was created in 1999. The Museum’s objective is to educate and awaken the interest for science by means of permanent and temporary exhibits, interactive activities, theater plays and workshops.

Immunobiological Technology Institute – www.bio.fiocruz.br

Akira Homma

Biomanguinhos is Latin America’s largest producer of vaccines and diagnostic kits and reagents for infectious and parasitic diseases. The institute’s modern facilities may produce 200 million doses of vaccines per year, besides 2.5 million diagnostic reagents. The results show that Brazil has been advancing towards self-sufficiency and the mastering of technology concerning input products.

The Institute has the capacity of producing 100 million doses per year of the yellow fever vaccine, which makes it the largest world producer of this vaccine. Biomanguinhos’s production exceeds the demand of the Ministry of Health, which allows part of it to be exported through the United Nations.

Biomanguinhos currently also produces vaccines against polio, meningococcal meningitis and meningitis caused by the Haemophilus Influenzae type b (Hib). It also produces the MMR (against measles, mumps and rubella) and DTP-Hib (against diphtheria, tetanus, pertussis and Hib) vaccines. The DTP-Hib vaccine is produced conjointly with the Butantan Institute. As to diagnosis, the reagents for Aids, leishmaniasis, Chagas disease, dengue fever, rotavirus diarrheas, hepatitis, rubella and other diseases, should be mentioned.

In 1976, Biomanguinhos started its course towards becoming a large industrial laboratory. Today, the institute’s contribution regarding production and research responds to the demand of the country’s epidemiological situation.

Drug Technology Institute – www.far.fiocruz.br

Núbia Boechat Andrade

Farmanguinhos is the only public laboratory really prepared to respond to emergencies of the Unified Health System (SUS). The Institute, thus, is devoted to technological development and to the production of essential drugs that are freely distributed to the population. Per year, Farmanguinhos produces 1.5
billion pharmaceutical units (such as pills, capsules, and ointment tubes) of 70
drugs against malaria, leprosy, hypertension, diabetes, anemia, tuberculosis,
hepatitis, Aids, psychiatric disorders and other diseases.

By producing generic drugs (especially against Aids), the Institute plays an
important role in the Federal Government’s policy for controlling the prices
and reducing the cost of drugs. Farmanguinhos prioritizes the strategic
programs of the Ministry of Health, but also serves the state and municipal
health secretariats.

The institute evolved from the Medicines Service of the National Department
of Rural Endemics, created in 1956, and was integrated to Fiocruz in the
1970’s. Among Farmanguinhos’s most recent efforts are the validation of new
phytotherapeutic products and the research for new drugs.

National Institute of Quality Control in Health – www.incqs.fiocruz.br
André Luís Gemal

INCQS is part of the substructure of the National System of Sanitary
Surveillance and has the objective of protecting the population against
possible risks and hazards posed by the production and commercialization
of food, drugs, cosmetic products, biological products, blood, blood-derived
products, among others. The institute’s laboratories analyze the quality of
products, input products, services, and environments used in the health area.

INCQS was inaugurated in 1981 and is today the most important national
reference agency in matters concerning technology and rules related to
quality control in health. The institute’s functions include: Performing
technical analyses on matters related to sanitary surveillance; inspecting
and evaluating industrial plants and laboratories; evaluating products;
discussing and developing sanitary-related legislation; discussing, updating
and disseminating information and methodologies; and developing and
implementing analytical methodologies. INCQS also coordinates the National
Network of Official Laboratories of Quality Control in Health.

Fernandes Figueira Institute – www.iff.fiocruz.br
José Augusto de Britto

The institute’s objective is to promote women’s, child and adolescent health.
IFF not only is a center for developing and disseminating technology but also
performs activities on research, education and medical assistance. The only
free clinical genetics infirmary in Brazil is located at the institute. IFF also has a
very modern nursery room for high-risk newborns and provides assistance for
the Ministry of Health in developing policies for reducing child mortality.
The institute’s actions concerning breastfeeding should also be mentioned. The reformulation of IFF’s Human Milk Bank (today a national and international reference) has stimulated the creation of the first federal law on the subject. IFF coordinates the National Network of Human Milk Banks, which unifies more than 170 units throughout the country.

The institute was created by Carlos Chagas and doctor Antônio Fernandes Figueira, Chagas’s assistant at the institute formerly known as Department of Public Health. IFF was integrated to Fiocruz in 1970. Today, the institute is a reference center for the city and the state of Rio de Janeiro in medical genetics, high-risk neonatology, perinatal pathology and pediatric infectious and parasitic diseases. Moreover, IFF offers master’s and doctor’s programs on women’s and child health and residency in related areas.

Evandro Chagas Clinical Research Institute – www.ipec.fiocruz.br
Keyla Balizia Feldman Marzochi

The institute provides clinical and laboratory services that are integrated to research projects and education in infectious diseases. Currently, IPEC houses reference centers in cutaneous leishmaniasis, fungal infections and for the histopathological diagnosis of infectious diseases. The institute’s major lines of action include studies on Chagas disease, tuberculosis, dengue fever, sexually transmitted diseases, oncovirus infections, clinical studies and studies on pharmacokinetics.

IPEC is the first and only hospital in the country to be created with the objective of conducting research. Today, the Institute counts on a multidisciplinary team to conduct in-depth studies on patients with communicable diseases of high social and human impact. The institute was conceived by Oswaldo Cruz in 1904 and has always been dedicated to the major Brazilian endemic diseases. IPEC also intends to produce knowledge and develop new methodologies and protocols for health care. Therefore, the institute also laid efforts on training human resources in graduate courses.

Technical Support Units

Scientific and Technological Information Center – www.cict.fiocruz.br
Ilma Noronha

Cict was created in 1986 and performs activities regarding the production, treatment, analysis and dissemination of information, as well as participates in the development of policies for communication (strategic areas for the improvement of the quality of life of the Brazilian population and for the scientific and technological development of the country).
Besides promoting the intramural integration of Fiocruz and the articulation between Fiocruz and other institutions in the field of information and communication in health, Cict also seeks to identify and respond to social demands and demands of the Unified Health System (SUS) and of other governmental agencies.

The center is also responsible for managing Fiocruz’s libraries, which include virtual libraries and the web portal for graduate theses. Cict also coordinates the National Poisoning Information System (Sinitox), a national reference on poisoning and intoxication. Moreover, it conducts activities regarding research, education and technical cooperation. Investing in new media and technologies is among the center’s present objectives.

Laboratory Animal Breeding Center – www.cecal.fiocruz.br
Antenor Andrade

Cecal is capable of producing 100 thousand milliliters of blood and breeding 200 thousand animals per years. These are used in Fiocruz’s programs regarding research, education, production and quality control. The center breeds mice, rats, guinea pigs, hamsters, rabbits, goats, horses and non-human primates in compliance with the guidelines determined by the Ethics Commission on Animal Use. The colony of Rhesus monkeys, brought to the institution by Carlos Chagas, is today the largest in Latin America.

Cecal was created in 1997, but its roots go back to 1904, when Oswaldo Cruz planned the institute’s first animal facility. The center helps to keep Fiocruz in the forefront of biomedical science. The center is capable of producing specific pathogen-free animals and various lineages of genetically modified animals. Cecal seeks to improve genetic engineering and molecular biology techniques not only to breed animals that are more adequate to the purposes of each specific research project, but also to reduce the traditional use of these animals in the Foundation’s laboratories.

Units Directly Assisting the Presidency

Brasília Regional Board – www.direb.fiocruz.br
Denise de Oliveira

Direb is the unit responsible for directly and immediately assisting the President of Fiocruz on matters related to the Board’s activities. The Board’s objective is to serve as a representative of the Foundation in Brazil’s capital and to contribute to the strengthening of the Unified Health System in the Center-West region of Brazil. That is one of the strategies for developing this region which, in terms of health sciences, congregates only two percent of the country’s graduate programs.
Direb was created in 1979 and provides Fiocruz’s directors with the operational and logistic support in the capital. The Board seeks to perform integrated activities in the areas of education, research, communication and assistance in public health. Since 2002, Direb has been developing research programs and programs regarding the training of human resources in education. It offers *lato sensu* graduate courses on nutrition, health law and sanitary surveillance and the environment. The Board also maintains an ambitious program of science popularization, which encompasses the *Science & Society* forum, the literary award *Youth and Public Health*, and the *Fome de Letra* project.

**Internet Websites**

- **Virtual Libraries**
  - Oswaldo Cruz Virtual Library: www.prossiga.br/oswaldocruz
  - Carlos Chagas Virtual Library: www.prossiga.br/chagas
  - Vital Brazil Virtual Library: www.prossiga.br/vitalbrasil
  - Virtual Library in Public Health: www.saudepublica.cict.fiocruz.br
  - Virtual Library in Health – History of Health: www.bvsam.cict.fiocruz.br
  - Virtual Library in Health – Breastfeeding: www.bvsam.cict.fiocruz.br
  - Virtual Library in Health – Infectious and Parasitic Diseases: www.bvsdip.cict.fiocruz.br
  - Virtual Library of Museums of Science and Science Dissemination: www.prossiga.br/divulgaciencia
  - Overmeer Project: www.fiocruz.br/bibliotecas/obrasraras

- **Publications**
  - Memórias do Instituto Oswaldo Cruz: www.memorias.ioc.fiocruz.br
  - Cadernos de Saúde Pública: www.ensp.fiocruz.br/csp
  - História, Ciência e Saúde – Manguinhos: www.coc.fiocruz.br/hscience
  - Educação, Trabalho e Saúde: www.epsjv.fiocruz.br/revista
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