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*Press release*

**Nantes University Hospital** **Center and the Institute of Transplantation, Urology and Nephrology (ITUN) announce their 4000th transplant operation**

*Nantes University Medical Center, the first transplantation center in Europe to have performed this number of transplant operations*

**Nantes, Tuesday 30 March 2010** – [Nantes University Medical Center](http://www.chu-nantes.fr) and the Institute of Transplantation, Urology and Nephrology ([ITUN](http://www.chu-nantes.fr/institut-de-transplantation-et-de-recherche-en-transplantation-urologie-nephrologie-iun--557.kjsp)[[1]](#footnote-1)) today announced the performance of their 4000th transplant operation. The city of Nantes' candidature for a government-funded University Hospital Institute (*Institut Hospitalo-Universitaire*, IHU), a project directed by the Professor Jean Paul Soulillou, will be unveiled shortly.

In 2009, organ, blood, platelet and bone marrow donation was recognized as a "**Major National Cause**" by the French Prime Minister, in order to raise public awareness of unmet needs in donated organ supply - one of today's major public health issues.

Within Nantes University Medical Center, the ITUN brings together researchers and clinicians working on organ and cell transplantation. It is today Europe's leading center for kidneys transplants and the second-ranked center in France for pancreas transplants. As of March 17, 2010, a total of 40332 kidney transplants had been performed and 2216 functional transplant recipients are currently being monitored in Nantes.

“*This high level of excellence for kidney and pancreatic transplantation in Nantes has been achieved by close collaboration between the ITUN's nephrologists, urologists and anesthesiologists. The unpredictable nature of transplantation medicine requires practitioners to be continuously on call and adopt a specific organizational structure for optimizing this activity. This intricate organizational structure is even more complicated for multi-operated patients and those waiting for a combined kidney and pancreas transplant. These difficulties remain - despite technical progress in pancreatic transplantation and the laparoscopic removal of a kidney from a living donor. We have been performing the latter technique since 2002; it improves post-operative outcomes and speeds the donor's recovery”,* commented Professor Georges Karam, head transplant urologist at the ITUN.

The ITUN has a powerful translational research capability ("from bedside to bench and bench to bedside"), which favors collaboration between researchers and clinicians. This approach benefits not only patients (via the development of novel therapeutics and predictive/diagnostic tests) but also the scientific and medical communities (with the generation of very innovative, promising approaches, as witnessed by 2 recent publications in *Science* 2009 and *Science Translational Medicine* 2010).

*"Transplantation results in tremendous improvements in the state of health, quality of life and life expectancy for thousands of patients with kidney failure disease. In the absence of transplantation, these patients would be on dialysis (a burdensome, restrictive and expensive procedure) for the rest of their lives. Professor Soulillou and his ITUN colleagues at Nantes University Medical Center are pioneering translational medicine via tight integration of healthcare and R&D on new treatments. The ITUN is now at the cutting edge of therapeutic innovation in kidney transplantation for the benefit of patients",* emphasized ITUN director Professor Gilles Blancho.

**Cohort of transplant patients and epidemiologic and clinical research**

The follow-up of the transplant patients’ cohort is facilitated by audited database of validated information in the field of organ transplants (DIVAT), which is the first online database in Europe with a unique audited information system

DIVAT allows real-time collection of more than 250 biological and medical parameters per patient who went through a transplanted kidney and / or pancreas operation. From this device developed in partnership with the IT company IDBC/A2COM, the ITUN organised via the Internet a unique network in France between Nantes University Hospital, Paris Necker, Nancy, Montpellier, Toulouse and Lyon : “DIVAT NetWork”. DIVAT includes clinical and biological data for nearly 15 000 transplanted patients who are followed by this network.
One of the features of DIVAT is that its data are validated by the annual practice of ‘cross audits’ conducted by the various centers of the network, a token of the high quality of the collected information. The DIVAT database is coupled to a descriptive statistical tool which allows knowing thoroughly and in real time the number of transplanted patients. This allows, first, to rapidly identify patients fulfilling the inclusion criteria to participate in a clinical trial and, secondly, to initiate research on the fate of renal and pancreatic transplants.

In addition, a team supervised in cooperation with Dr. Véronique Sébille-Rivain (Nantes University) and the Professor Magali Giral (ITUN) allows the realization of complex statistical models and innovators in the field of transplantation, to determine the particular level of rejection risk of patients. The objective is to develop personalized medicine that’s tailored to the circumstances of each patient.

Finally, the Professor Georges Karam of ITUN has obtained in 2009 on request (PHRC national - Hospital Clinical Research Program) the funding from the Ministry of Health to adjoin to DIVAT the data on surgery and its aftermath: it’s regarding the DIVAT Uro database. DIVAT Uro is an innovative tool to promote epidemiological studies as well as identifying good practices and risk factors in the field of transplant surgery. The methodical, broad and standardized computerization of the surgical data should improve the assessment of the surgery impact and its complications on the fate of the transplants; the overall objective is to improve the quality of the transplantation surgery and the follow-up, through a better knowledge of the risks.

**Nantes adopts an innovative approach in e-healthcare/telemedicine for monitoring transplant recipients.**

Thanks to collaboration with the IT company IDBC-A2COM, the ITUN has developed a software package called DIVAT Integralis. It integrates the medical records of all the kidney and/or pancreas transplant patients being monitored in Nantes. As long as the user holds a secure access certificate, this Internet-based software can connect to the patient's medical records from any computer. The data are encrypted with the https protocol. The new tool can be used to set up a follow-up network with GPs, general hospitals, dialysis centers and (in the longer term) medical laboratories. This network optimizes the management of transplanted patients. For example, DIVAT Integralis enables the transplantation clinicians to establish the patients' risk levels and select frequent, hospital-based monitoring for high-risk patients or partly GP-based monitoring for low-risk patients. Thus, by adapting the type of monitoring to the patient's state of health, the goal is to improve overall patient management and quality of life and to reduce healthcare costs. Lastly, thanks to the ongoing development of a secure, personalized device for accessing the medical files on DIVAT Integralis, patients will gain access to a valuable online health education tool.

**Organ transplant: a major health issue**

In many late-stage diseases (from cystic fibrosis and diabetes to liver cancer), transplantation is the only remaining treatment option. In 2008, the situation in France was as follows:

* More than 13,6003 patients were waiting for a transplant (versus 13,112 in 2007), with an average waiting time of around 3 years.
* There were 43,400 transplant recipients, including 4,620 operations in 2008:
* 2,937 kidney transplants, i.e. 64% of all transplants.
* 186 kidney transplants were performed in Nantes (a leader in terms of the number of kidney transplants performed and the number of recipients being followed up (2216)).
* 73 combined kidney-pancreas transplants (26% of which were performed in Nantes).
* 8 pancreas transplants (50% of which were performed in Nantes).

Even though kidney transplantation has grown strongly (with an 8% increase between 2007 and 2008 and a doubling in the number of operations over the last 20 years), there is still a lack of donors. In 2008, 40,0004 patients in France were on dialysis - a burdensome, life-long treatment for the patients and a costly option for healthcare payers.

Beyond the issue of the lack of donor, two other general problems are present in transplant field: the risk of graft rejection and the side effects related to immunosuppressant drugs. The ITUN's research groups are looking at these two issues (especially in collaboration with biotech companies).

According to a 2007 study in the [*International Journal of Health Care Finance and Economics*](http://www.springerlink.com/content/106603/?p=95eb11a32ff54cf6866fd9ab633babf0&pi=0) ([Volume 7, Numbers 2-3 (September 2007](http://www.springerlink.com/content/h580500n25t5/?p=95eb11a32ff54cf6866fd9ab633babf0&pi=0)) by **Isabelle Durand-Zaleski,** Christian Combe, and Philippe Lang using French national health insurance data from 2005**, the cost of a kidney transplant falls below that of dialysis from the second year onwards - essentially due to the gains in life expectancy and quality of life for non-dialyzed patients. The cost per transplant patient was estimated at €84,407 for the first year post-transplantation and €14,005 for subsequent years; this can be compared with €58,356 per year (for life) for patients on hemodialysis.**

**About the ITUN**

The [ITUN](http://www.chu-nantes.fr/institut-de-transplantation-et-de-recherche-en-transplantation-urologie-nephrologie-iun--557.kjsp) is a dedicated healthcare, research and teaching institute in the fields of transplantation, nephrology and urology. The ITUN arose from a merger between the ITERT (Institute of Transplantation and Transplant Research, created in 1991 by Professor Jean-Paul Soulillou) with Nantes University Medical Center's departments of nephrology, dialysis, clinical immunology and transplantation and the [INSERM 643](http://www.ifr26.nantes.inserm.fr/ITERT) mixt research unit (Nantes University/Inserm), headed by Dr. Ignacio Anegon. The Institute is jointly administered by [Nantes University Medical Center](http://www.chu-nantes.fr), the [University of Nantes](http://www.univ-nantes.fr) and the [Inserm](http://www.grand-ouest.inserm.fr/go/fr/home/index.html). The ITUN now federates clinicians, medical staf, researchers, research professors, engineers and technicians, so over 350, of wich 125 in the 643 unit. These teams work at the bedside to improve patient care on a daily basis. One of ITUN's main objectives is to transfer lab discoveries into the clinic and to industry and offer innovative solutions for better care and improved quality of life to transplant patients.

Since January 2010, the ITUN is headed by Professor Gilles Blancho. He succeeded to Professor Jean-Paul Soulillou. He’s assisted by the Executive Board of clinicians and researchers. The institute's novelty relates to the fact that it includes physicians, care teams and researchers within the same entity. This organizational structure (one of the first of its kind in France) enables physicians and researchers to pool their skills and develop new, beneficial therapeutic strategies more quickly. The ITUN is one of Europe's leading centers for kidney and pancreas transplantation. It is also a key player in transplantation research and immunotherapy.

The ITUN filed 8 patents and settled 2 contracts licenses since 2004. In addition, ITUN is responsible for creating of three start-ups: Lynatech created in 1991 (Biotechnology company, who later merged with Sangstat Medical Corp.), [IDBC](http://www.idbc.fr) in 2000 (Society of IT development in the field Biomedical, acquired by A2Com) and TcLand in 2002 (whose rapid development has given rise to 2 distinct entities: [TcLand Expression](/www.tcland-expression.%20com) and [TCL Pharma](http://www.tcl-pharma.com) in 2007).

Furthermore, the ITUN works with other teams of transplants (organs, cells and genes) of the University Hospital of Nantes, for the creation of a Science IHU Transplantation and Immunotherapy and an international influence.

**About Nantes University Medical Center**

As the leading healthcare establishment and employer in the Pays de la Loire region, Nantes University Medical Center has 10,500 staff: 1,900 consultants, interns and medical students and 8,600 nurses, technicians and administrative operatives. It is spread across seven hospital sites: Hôtel-Dieu Hospital, the *Mère et Enfant* mother and child hospital, Saint-Jacques Hospital, Laënnec Hospital, Seilleraye Hospital, Maison Beausejour and Bellier Hospital. One of Nantes University Medical Center's specific features is its full range of healthcare services: 616 beds in internal medicine/surgery/obstetrics wards, 362 beds in aftercare and rehabilitation wards, 551 long-term care beds and 560 beds in psychiatric wards. The annual activity data illustrate the dynamism of the establishment: 850,000 patient-days, 78,000 admissions, 470,000 out-patient consultations, 88,000 emergency room admissions, 375,000 emergency calls taken, 3,600 births, a short-stay bed occupancy rate of over 86% and a mean hospitalization time (in short-stay wards) of 5.5 days.

For over 20 years, Nantes University Medical Center has been committed to an extremely pro-active biomedical research policy, this policy is driven with the Nantes Medicine Faculty in accordance with the French National Health and Medical Research Institute, Inserm. It is now one of France's top 10 university medical centers for research. This policy has enabled the creation of 4 research and healthcare institutes around important themes: the ITUN for immunology/transplantation, the IRCNA for oncology, the *Institut du Thorax* (Thorax Institute) for cardiovascular, endocrine and lung diseases and the IMAD for digestive tract diseases. This institute-based organizational structure effectively interfaces healthcare and research, generates innovation and is cited as a model by other hospitals.

Three key figures illustrate the progression of the medical research sector in Nantes: staff numbers in specialist research laboratories rose from 70 in 1990 to over 700 in 2009; the number of labs accredited by the INSERM (the French national institute for medical research) increased from 1 to 13 over the same period and there has been a 10-fold rise in the number of biomedical spin-outs. Nantes-based medical research is characterized by strong hospital involvement in preclinical research, thanks to high-quality collaborations with the Inserm, with the University of Nantes' teaching (Medicine, Pharmacy and Odontology Faculties) as well as research units and significant efforts to structure and professionalize clinical research over recent years.

**About the Inserm**

Founded in 1964, the French National Health and Medical Research Institute (Inserm) is a public science and technology institute, jointly supervised by the French Ministry of Higher Education and Research and the Ministry of Health.

The mission of its scientists is to study all diseases, from the most common to the rarest, through their work in biological, medical and public health research.

With a budget of 834 million euros in 2009, Inserm supports more than 300 laboratories across France. In total, the teams include nearly 13,000 researchers, engineers, technicians and administrative staff, etc.

In order to consolidate its role at the forefront of clinical research, the Institute prioritises the establishment of infrastructure dedicated to clinical research and the promotion of ever more innovative clinical trials. In this respect and with the support of the Ministry of Health, the institute has been a driving force in the creation of Clinical Investigation Centres (CIC) within the University hospitals. In 2009 there were 53 CIC.

Inserm, which is entirely dedicated to research in the fields of biology, medicine and public health, is active in all aspects of this work, from the research laboratory to the hospital bed. At national level, it coordinates its research within various specialized institutes.

- Cancer

- Circulation, metabolism, nutrition

- Genetics, genomics and bioinformatics

- Molecular and structural basis of life

- Cellular biology, development and evolution

- Immunology, haematology and pneumology

- Infectious diseases

- Neurosciences, neurology and psychiatry

- Public health

- Health technologies

At the European and international level, the 9 Associated European Laboratories and 15 Associated International Laboratories, aim to establish co-operative programmes, starting from an existing collaboration between an Inserm laboratory and a foreign laboratory, which could not have be achieved without this association. Such a partnership associates two laboratories situated in different countries, has a director at its head and is set up around a collaborative project.

**About the University of Nantes**

Created in 1961, Nantes University is a multidisciplinary university, which hosts over 46 000 students, including 35 000 students who are in training. About 3 000 students comes from UFM and 11 000 students of the Continuing Education and the permanent university. It employs almost 4500 staff (permanent and contractual) and about 300 researchers of the research organizations (CNRS, INSERM and INRA). Its annual budget is around 260 million euros, nearly 77% of the earnings comes mostly from the state funds.

The university, which includes 21 training and research components (11 faculties, 6 institutes including 3 IUT and 1 School of Engineering, 1 Center for Sciences, 1 Center for Continuing Education and the Permanent University), develops on 7 major campuses, which 5 are located in Nantes, 1 in St Nazaire and 1 in La Roche sur Yon (340 000m ² of total area). It is empowered to issue more than 250 different certificates and a total of 71 different laboratories and research facilities accredited by the Ministry of Higher Education and Research, which 32 are co-accredited by organizations (Inserm, CNRS, INRA).

The University of Nantes organized the landscape of his research into 8 thematic clusters, consistent with its 8 Doctoral Schools (over 250 Doctoral theses are defended each year).

Among them, the pole "Biology, Biotechnology, Health” is the largest and involves a staff of approximately 700 people including (teachers-researchers of the University, hospital-university researchers, INSERM/CNRS and INRA researchers, hospital practitioners of the CHU in Nantes, technical staff and administrative staff (contractual and permanent), contract researchers, Doctoral students) who perform their work in 15 accredited laboratories (including 11UMR teams and 4 welcome teams), and who are working in synergy with the 3 institutes of care, research and education (CHU / INSERM / University) and the federal Institute 26 (University / INSERM).

The research in this area concerns 4 major identified areas who’s in cooperation with INSERM and the CHU: "Immunology / Oncology / Transplant," "Cardio-vascular / Nutrition / Digestive", "Biomaterials / Osteo-arthritis / Dental" and "Biotherapy / Biotechnologies. They include essential, upstream research and technological research who are strong generators of innovation in biotechnology and biotherapy with many clinical applications at the University Hospital of Nantes (Which is a specificity of the Nantes biology and health research). They rely on many strong mutualised platforms, located at the University Hospital CHU or in premises of the University such as the Cyclotron Arronax (most are being labelled as part of [Biogenouest](http://www.ouest-genopole.org)).

The whole pole research is also developing elsewhere in many regional, national and international networks.

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1. THE [ITUN](http://www.chu-nantes.fr/institut-de-transplantation-et-de-recherche-en-transplantation-urologie-nephrologie-iun--557.kjsp) is administered jointly by [Nantes University Medical Center](http://www.chu-nantes.fr), the [University of Nantes](http://www.univ-nantes.fr) and the [Inserm](http://www.grand-ouest.inserm.fr/go/fr/home/index.html)

2 Source : Nantes University Medical Center, March 15, 2010 [↑](#footnote-ref-1)