

RIGSHOSPITALET'S ANNUAL REPORT 2012



Rigshospitalet's Annual Report 2012

Rigshospitalet

Board of Management

Blegdamsvej 9

2100 Copenhagen, Denmark

Telephone +45 35 45 35 45

Email: rigshospitalet@rh.regionh.dk

www.rigshospitalet.org

Graphics

Region H Design

Photo

Tomas Bertelsen

Poul Rasmussen (page 19)

Video

Rigshospitalet

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Torben Stentoft Hospital Director



Jannik Hilsted Hospital Medical Director



Helen Bernt Andersen Hospital Nursing Director

Training in international perspective

Rigshospitalet has more than 100 highly specialised departments and functions, and carries out a number of very specific tasks within patient treatment, research and training/education. The high research activity means that new and better treatment methods for patients are constantly being developed, and the hospital is the obvious place of training/education for many thousands of students in the field of health. Rigshospitalet's vision is to be Denmark's international hospital, and to be among the ten best research hospitals in Europe. In order to work at this level, the hospital has major focus on learning from others, and on disseminating knowledge and experience across Danish borders.

The fact that Rigshospitalet has many research and development projects at international level was manifested in 2012, when Rigshospitalet could offer treatment for recurrent nasopharyngeal cancer to patients who previously had been sent to Hong Kong for treatment. The treatment was introduced at Rigshospitalet thanks to Chinese physicians who trained their Danish colleagues in the procedure. The treatment provides the surgeon with a better overview and thereby completely new opportunities to apply this technique in connection with other operations, for example benign nasopharyngeal tumours. The global outlook and the strong, professional networks Rigshospitalet's experts are involved in throughout the world bring new knowledge and opportunities for treatment to Denmark, and this ultimately benefits all patients.

Moreover, experience is constantly being gathered through strong collaboration with international colleagues. For instance, in 2013 Rigshospitalet's liver surgeons can celebrate the 40th anniversary of a very fruitful collaboration with Japanese physicians. The collaboration has meant that Japanese experience with particularly effective and gentle surgical techniques to operate liver cancer and liver metastases has been transferred to physicians at Rigshospitalet. In return the collaboration has also meant that Danish expertise in liver transplants has inspired the largest transplant centre for children in Japan. This exchange of knowledge and techniques has contributed to the fact that about 300 patients with liver cancer or liver metastasis undergo surgery each year, compared to only a couple of operations annually back in the 1990s.

Thus Rigshospitalet is now among the ten best hospitals in liver surgery in the world. Rigshospitalet is also at the forefront with regard to research and training in robotic-assisted keyhole surgery. In 2012, with a donation from The John and Birthe Meyer Foundation, Rigshospitalet purchased a robot which can assist in operations of the gynaecological disorder, endometriosis. Nearly one in ten Danish women suffer from this disease, and one in five of them, i.e. about 2% of all Danish women, are affected so severely that they end up having to undergo major surgery. Endometriosis operations are often very lengthy and complicated. They typically last three-four hours, and sometimes up to six-eight hours. Patients undergo keyhole surgery, in which two surgeons stand in locked positions and operate on inaccessible and badly affected areas in the abdominal cavity. Robotic surgery provides physicians with completely new opportunities during these long operations, such as greater access with instruments, 3D vision and far better ergonomics. This increases patient safety.

In order to be able to use this new robot, the department's most experienced surgeons in keyhole surgery and theatre nurses have been certified as robot operators, and a senior house officer has been sent to Florida for six months to learn from the world's leading surgeons within robot gynaecology. However, Denmark also has something to offer in this field. The very complicated robot operations are only carried out by specially trained surgeons in two places in Denmark; at Rigshospitalet and at Aarhus University Hospital. This generates respect in the US, where also less experienced surgeons are allowed to perform the difficult endometriosis operations.

In addition to better patient treatment, the mutual exchange of experience within robotic surgery also means that strong professional networks are being formed across national borders. Networks that lead to involvement in new international research projects and more collaboration. All this to the benefit of patients.



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Cancer treatment sets the agenda

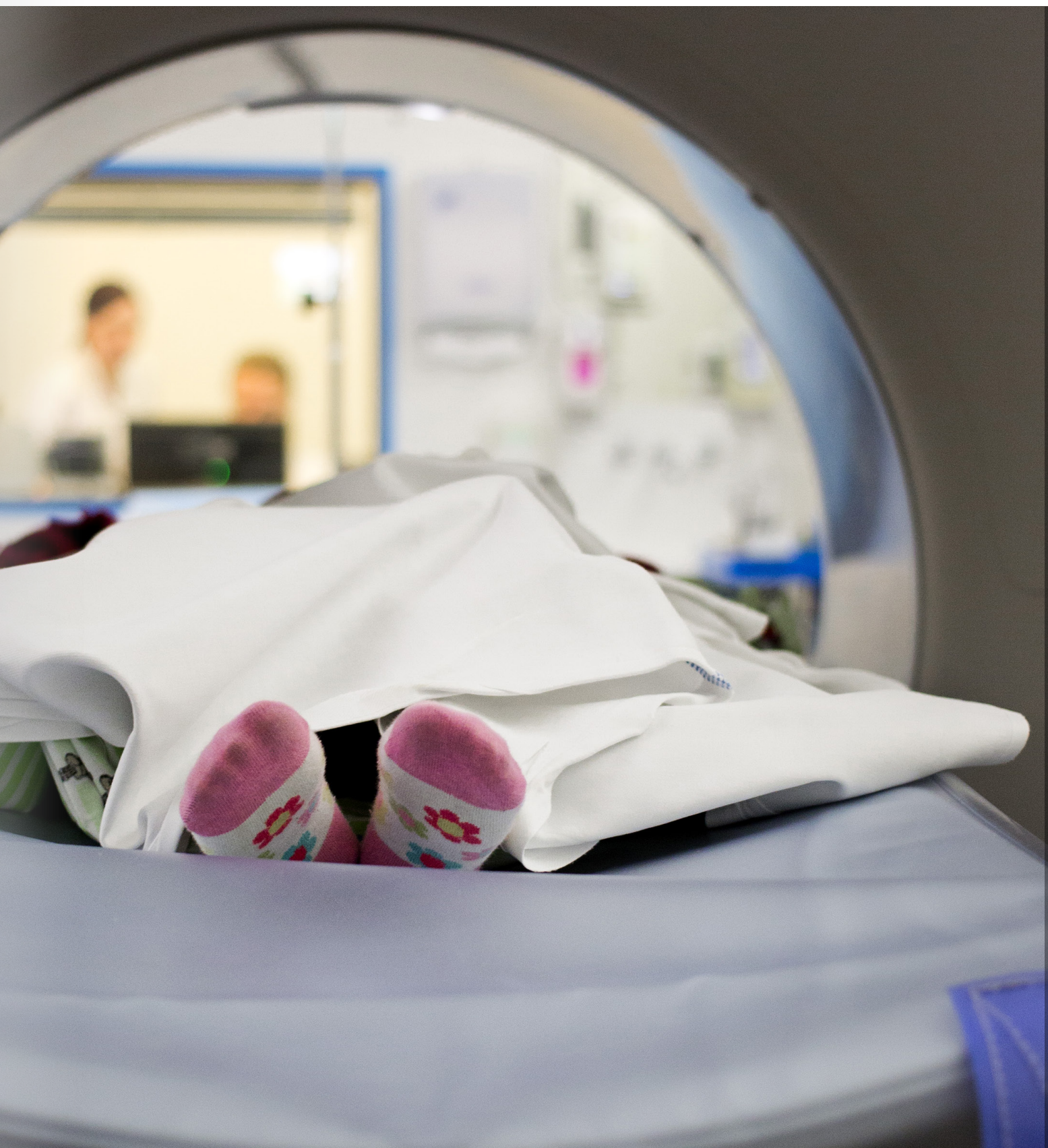
Diagnosis and treatment of cancer are becoming increasingly complex. More people are being diagnosed with cancer, and today physicians are able to treat more cancer diseases than ever before, with both chemotherapy and radiotherapy in new and more effective combinations. The diagnostic possibilities through e.g. advanced PET/CT scans and PET/MRI scans also give access to more precise diagnostics and thereby faster treatment.

In the past decades, cancer treatment has seen tremendous technological advances. Today, far more patients live longer with a serious, chronic disease than they used to. About a third of Rigshospitalet's activities are related to cancer diagnostics and cancer treatment. The hospital has a leading position in Europe within CT image formation, and is the third hospital in the world to have a PET/MRI scanner. This benefits children in particular. Today children are increasingly surviving cancer, for example due to better treatment. Yet, a precondition for a long life is that the treatment and examinations children with cancer go through early in life do not raise the risk of developing cancer later in life. Unfortunately this may be the case, if the child has undergone many CT scans and nuclear medicine scans.

Of the few hospitals in the world with a combined PET/MRI scanner, Rigshospitalet has carried out the most examinations of children, primarily because this very combination is a huge advantage in child examinations. Many of the situations in which PET/CT scans were previously carried out can now be replaced by PET/MRI scans with a consequential lower radiation dosage. Moreover the PET and MRI scans can be carried out simultaneously and with a much higher level of detail in the image formation. Rigshospitalet's new CT scanners also give a minimal radiation dosage, and the image formation is carried out at unprecedentedly high speed (less than one second) and with improved image quality.

The new scanners and combination options improve diagnostics considerably, and the child being scanned does not have to be under general anaesthesia, so he or she can quickly return to the ward. This means the child and the parents feel safer.





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There have also been major advances within cancer diagnostics and cancer treatment among adult patients. A team of researchers at Rigshospitalet has found a new and simple way of detecting testicular cancer before it develops. Previously, suspicion of testicular cancer meant that a patient had to be subjected to one or two painful biopsies, and despite a 95% survival rate, the testicular cancer diagnosis meant having to go through treatment that could be extremely hard on the body.

Researchers at Rigshospitalet have now discovered the markers which can reveal early stages of testicular cancer, so by using a simple sperm sample physicians can now detect the disease before it develops into cancer. This means that the hospital can provide early and gentler treatment. Gentle treatment is beneficial in particular for men who are affected by the disease in their 20s or 30s and therefore have a long life ahead of them with possible late complications from their treatment. Furthermore, researchers assume that, in the long run, the early and gentle treatment will result in an even better chance of survival.

The discovery has also been beneficial to patients outside Denmark. So far Rigshospitalet's researchers are collaborating with colleagues in Norway, Germany and Poland, which in each their own way can use the Danish research.

Moreover, Rigshospitalet's scanning capacity is now among the best in the world in terms of treatment. In 2012, a Truebeam Novalis STx-accelerator was commissioned for stereotactic radiotherapy of patients with certain types of prostate and brain cancer. Rigshospitalet is the only hospital in Denmark with this apparatus.

This type of radiotherapy has been applied since the mid 1950s. However, with the latest image and computer technology developments this is nothing less than a revolution.

In stereotactic radiotherapy, the bundle of rays is shaped so that it accurately covers the tumour. The radiation apparatus circles around the patient while it targets the tumour. This gives a high dosage of radiation in the tumour, while the brain around the tumour, for example, receives less radiation because the rays move past very quickly. The further away from the tumour, the less the radiation.

Up to 400 patients a year with prostate or brain cancer tumours which cannot be removed by surgery can now be offered high-dosage, precision stereotactic treatment. In the long run, it may be possible to avoid operating many types of cancer. Furthermore, the accelerator, which is fully digitalised, forms the basis for new international research collaborations, collection of data and simulation of new treatment models and techniques.

The year 2012 also saw surprising and positive research results within medical cancer treatment. The Nordic Lymphoma Group represented by researchers from Rigshospitalet showed very good results of treatment for elderly patients with a type of lymphatic cancer which until now has been incurable. Treatment with mild immunotherapy followed by maintenance with an antibody has proven to be surprisingly effective and a good example of how far we can get by combining chemotherapy and biological products; a mild and at the same time effective treatment.

Mild and effective treatment is necessary when lymphatic cancer strikes elderly people who do not tolerate intensive treatment. The research is ground breaking for this type of serious lymphoma, because the majority of patients today are alive and free of the disease more than six years after their treatment started. Moreover, the results reflect the strength in European, and not least Nordic, research collaboration in the lymphatic cancer area.

In order to share Rigshospitalet's international research with the surrounding community, the first Danish Global Excellence Symposium with focus on cancer was held in 2012. The 'Update on Cancer' symposium focused on the most recent knowledge within cancer research and was aimed at clinicians and not least the general public. The symposium comprised a number of presentations from Rigshospitalet's own researchers as well as international colleagues; all about projects which had not previously been published.

Ongoing trials are now the next step in establishing whether new types of immunochemotherapy and maintenance with new antibodies or biological products could be even better than those we already know.

One of the topics in focus at the symposium was the many cases of both ovarian cancer and cervical cancer in Denmark, and the importance of preventing these types of cancer, for instance through public screening and HPV vaccine programmes. The Update symposium will be repeated every year with changing topics. The 2013 symposium will focus on neurology.

Neurology across borders

In 2012 Rigshospitalet presented the newly instituted international KFJ Award for the second time. This time the award was given to Professor Tomas Olsson from the Center for Molecular Medicine and the Department of Neurology at Karolinska University Hospital in Stockholm, Sweden. Among other things, Tomas Olsson and researchers at Rigshospitalet are working on establishing the causes of multiple sclerosis and the mechanisms behind the disease in order to better prevent the disease and treat it more effectively in the long term.

Tomas Olsson is internationally recognised as one of the leading experts within neuroimmunology and neurogenetics, and he is currently President of the International Spinal Cord Society. The award, which has been made possible by a donation from the Kirsten and Freddy Johansen Foundation, is DKK 1.5 million, of which DKK 250,000 is awarded personally to the award winner, and the remaining DKK 1.25 million is earmarked for research collaboration between Rigshospitalet and the award winner to help develop research and future treatment of patients.

For a number of years, Tomas Olsson has had close collaboration with the Danish Multiple Sclerosis Research Centre at Rigshospitalet and has been instrumental in the Centre being appointed as a Centre of Global Excellence - in Health. The award enables development of collaboration on new projects and mutual exchange of knowledge and study visits for younger researchers in the area.

Sclerosis research and treatment has made great progress in recent years. Multiple Sclerosis is a severe and disabling autoimmune disease, in which the body's cells are attacked by the patient's own immune system. In Denmark, 12,500 patients have been diagnosed with multiple sclerosis, and the number of young women in particular who are affected by the disease is increasing. Denmark is among the countries with the highest risk of multiple sclerosis. Currently, there is no treatment for this disease. However, in animal experiments, researchers have now demonstrated that mesenchymal stem cells can inhibit the immune system's attacks on body cells, reduce infection in affected areas and reduce the deterioration of nervous tissue.

More specifically, after injection into the vascular bed, mesenchymal stem cells can find their way to the affected areas in the brain and curb the infection. Animal experiments also indicate that the stem cells can stimulate damaged nervous tissue to actually rebuild itself, and this is radically different from the usual medical treatment. The question now is whether the researchers can reproduce the same effect in patients with multiple sclerosis if they are treated with their own mesenchymal stem cells.

In order to answer this question, a comprehensive trial with stem cell treatment for patients with sclerosis commenced in 2012. A total of 25 Danish patients with severe multiple sclerosis from the Danish Multiple Sclerosis Research Centre at the Department of Neurology at Rigshospitalet were selected for a large international study which involves about 160 patients from about 15 centres in different countries.

In the cross-disciplinary research project, bone marrow is removed from the patient's iliac crest. The mesenchymal stem cells are then isolated, cultured and multiplied over a few weeks and in a specially designed laboratory for clinical cell culture at the Blood Bank at Rigshospitalet. About two million stem cells per kilogram body weight are then injected into the patient's blood vessel. The patient is monitored regularly on an out-patient basis with clinical examinations as well as MRI scans of the brain to assess the infection activity. The study is a double-blind study, which means that one half of the patients will be injected with their own mesenchymal stem cells, and the other half will receive a placebo injection. The two groups will switch after six months. In this way, all 25 patients will be treated with their own stem cells, but not at the same time as each other. When all patients have completed two rounds of treatment, data will be compared with the test subjects in other participating centres outside Denmark. The first results are expected in 2015.



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Transplants are picking up

Transplants are one of Rigshospitalet's important clinical areas, and this area has been given very high priority. Rigshospitalet carries out most transplants in Denmark. Severely ill patients with critical problems and treatment come from all parts of Denmark as well as Greenland and the Faeroe Islands to undergo transplants using the latest techniques. Rigshospitalet is among the best in the Nordic countries and an international leader within transplants.

From the first heart transplant in 1990 and up to the end of 2012, 328 heart transplants have been carried out at Rigshospitalet. And there have been great developments. What was once a ground breaking operation, is now one of Rigshospitalet's highly specialised general treatments, although there is a great shortage of organs. Of the patients who so far have undergone a heart transplant at Rigshospitalet, 79% are men and 21% women. The youngest patient to have undergone a heart transplant is a six-month-old boy, and the oldest is a 70-year-old woman.

As with heart transplants, kidney transplants have also developed from a pioneer treatment to a general treatment offer. About 170 kidney transplants are performed annually in Denmark, and 100 of these are carried out at Rigshospitalet. More than 2,000 kidney transplants have been carried out at Rigshospitalet since the treatment was first introduced in Denmark in 1964. Today, science is so advanced that husband and wife can exchange organs, even though tissue type and blood type do not match at all. There have also been significant developments in how quickly patients recover from a transplant and in how long they are admitted to hospital. The average time of confinement to bed is currently only about two weeks compared to previously a month or more. Rigshospitalet performs kidney transplants on virtually all age groups, from around 18 months and upwards, provided that the patient is otherwise well enough to go through with the treatment, which weakens the immune system for a period.

In 2012, Rigshospitalet could celebrate the 20th anniversary of the first lung transplant carried out in Denmark. Each year about 30 patients undergo a life-saving lung transplant. The number of transplants is fairly constant, and corresponds to the number of lung transplants in each of the five Scandinavian lung transplant centres that collabo-

rate with Rigshospitalet's Heart Centre through, for example, Skandia Transplant. Rigshospitalet also benchmarks programmes and results with these centres. The one-year survival rate of a lung transplant is more than 90%, and this is 5-10% higher than the international one-year survival rate. The longer-term prognosis is also good for patients who have undergone lung transplants, with 60% still alive after five years.

When the first lung transplants were performed in the early 1990s, the average time of confinement to bed was two months. Today, the patient is in hospital for four weeks, and during these four weeks, the patient will have been at home for some time. The short admission time is due to several factors: new surgical methods, new medicines, ongoing developments of the highly specialised nursing care and not least the fact that most treatment is given on an outpatient basis. Development has also enabled transplants on patients with severe or complicated lung diseases, who previously had to be turned down because they were too ill to undergo a transplant.

Rigshospitalet has also performed liver transplants since 1990, and has performed about 50 transplants annually in recent years. Rigshospitalet is the only hospital in Denmark that performs liver transplants. However, as with the other types of transplant, the shortage of donors is one of the greatest challenges. Therefore, Rigshospitalet has launched a number of initiatives. Among other things, split-liver transplants have been introduced. Split-liver transplants exploit the liver's ability to regenerate. The liver is split into two segments, so that two people can live with each their own part of the same liver.

New solutions have also been developed to the problem of donor shortage for lung transplants. In 2012 Rigshospitalet was the first hospital in Denmark to commission a new system, Vivoline. The Vivoline system enables donor lungs, which would previously have been rejected because they did not meet the medical requirements for functionality, to be evaluated and reconditioned. Vivoline is expected to help an additional 10 patients a year to a lung transplant.



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Greater priority assigned to intensive and acute care

Rigshospitalet comprises one of the largest multi-disciplinary intensive care departments in Denmark as well as the largest trauma centre in the country. The Trauma Centre has international certification according to American standards, a so-called Level 1 certification. The Trauma Centre receives severely ill and injured patients from the Capital Region of Denmark, Region Zealand and other acute patients from all parts of Denmark, for example burn patients who need highly specialised treatment. This requires collaboration between all diagnostic and clinical specialist areas of the hospital.

In acute medicine, time and thorough scientific documentation are vital to determine the type of prevention, diagnostics and treatment that provide the best results. Therefore, Rigshospitalet has employed its first professor in acute medicine. The new five-year professorship has been developed in collaboration between the Capital Region of Denmark, Region Zealand and the University of Copenhagen, and it has been financed by Tryg-Fonden. Rigshospitalet also welcomed its first Professor of Nursing for patients with acute and critical diseases in 2012.

These new professorships have been implemented to redress the lack of priority previously given to the acute care area in research contexts. Among other things, this means that scientific documentation must be found for where and how to best diagnose and treat the acutely ill patient. Large acute care units such as the Trauma Centre can offer the patient 'the whole package', because all technical specialities are readily available. This provides new and better opportunities to strengthen research into acute injuries and diseases.

Strengthening research and development in trauma and acute medicine as well as retaining and further developing Rigshospitalet's trauma manager function can ensure the seriously injured patient a documented and even better course of treatment in the future. For the same reason, the results of the Trauma Centre are being benchmarked with the results of foreign trauma centres.

The year 2012 also saw the first Danish trauma convention. As the largest trauma centre in Denmark, with just over 1,000 annual trauma patients, Rigshospitalet was the host for Denmark's four trauma centres, which together

receive about 2,500 trauma patients annually. The overall situation was assessed at the convention. Although traumatology is stronger than ever in Denmark, there are still many challenges and much to learn from each other and from abroad. The convention enabled physicians to exchange experience in order to strengthen traumatology in Denmark, and to get inspiration through specially invited guest speakers from abroad. The convention included the hospitals' management of terrorist attacks with a presentation based on experience from Oslo and Utøya in Norway in 2011.

The year 2012 offered sensational new research within the intensive care area. Here, researchers from Rigshospitalet's Intensive Care Department proved that the present standard treatment for patients with severe blood poisoning is poorer than treatment with regular saline water. Just over 800 patients with severe blood poisoning admitted to intensive care departments in the Nordic countries took part in the blinded study. Half the patients received the standard treatment with hydroxyethyl starch (HES), while the other half was treated with saline solution. Overall the mortality rate was high, both among the patients who were treated with HES and among the patients who received the saline solution. However, the mortality rate was highest among the patients who received HES. Several of the patients who received HES also needed dialysis and blood transfusion. Results went around the world and have prompted much debate on whether the international guidelines for treating severe blood poisoning should be updated.

Patients by helicopter

696 patients from throughout Denmark arrived at Rigshospitalet by helicopter in 2012, of whom 176 were trauma patients. In 2011 the number of patients was 664, of whom 148 were trauma patients, and in 2010 560 patients arrived by helicopter, by whom 113 were trauma patients.

Patients admitted by helicopter include patients with heart problems, burns trauma, and new borns.



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Research and collaboration ensure future fertility treatment

Gender and fertility are important factors in health and disease. The majority of research into, and treatment of, infertility takes place at Rigshospitalet. This means that the hospital has great international focus in this area.

During the Danish EU Presidency and in connection with the 10th Men's Health Week in 2012, Rigshospitalet hosted the first international 'Gender and Health Through Life' conference. The conference was organised by the European Men's Health Forum, the European Patients' Forum, the European Cancer Patient Coalition and the Men's Health Society, Denmark. Speakers from Denmark, Portugal, Ireland, Sweden, the US, the United Kingdom, Belgium, Canada, Australia, Austria and Finland brought men, health and disease into focus as well as the significance of gender for health.

A large conference on fertility also made its mark on 2012. In June, the latest research within fertility and reproduction was presented for health professionals and politicians. The conference presented results within research into semen quality in men, assisted insemination, the impact of endocrine disruptors on fertility as well as the importance of involving the male partner in fertility treatment.

Since the first child conceived through assisted insemination was born in 1978, fertility doctors and researchers have feared these children would not be as healthy as children conceived naturally. However, the latest research, which was also presented at the conference in June 2012, has proven this fear was unfounded. Large Nordic studies confirm that ART children, i.e. children born from assisted insemination, have only a slightly increased risk of anomalies, premature birth and stunted growth. This is good news given that recent data shows that up to 10% of birth cohorts come into existence through assisted insemination.

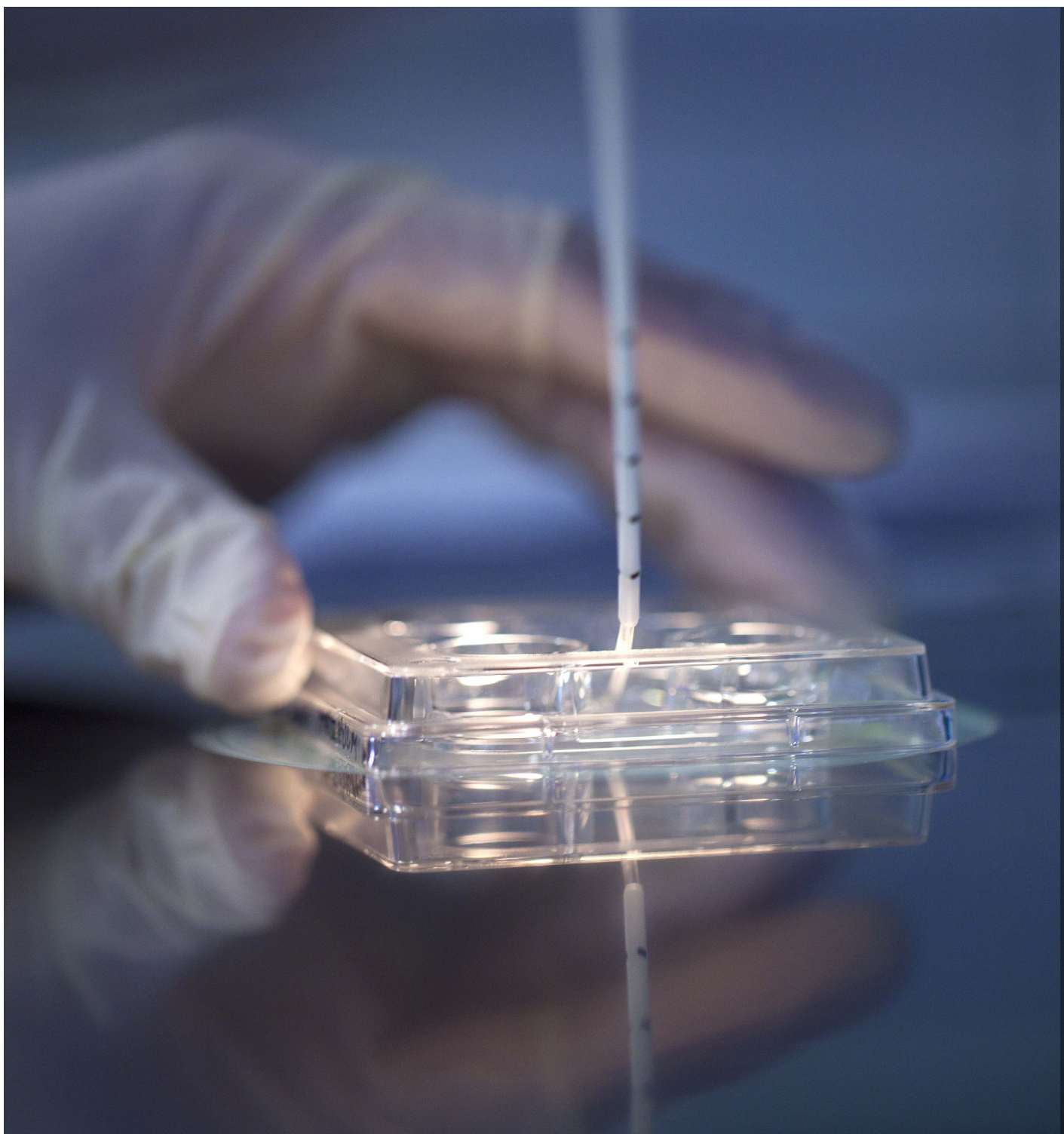
The reason is to be found in a special initiative to insert fewer embryos and thereby reduce the number of multiple births - twins, triplets or more. Early treatment of childless couples, milder hormone stimulation and better culture media as well as the possibility to freeze embryos has also had great impact on the well-being of ART children.

In order to strengthen treatment and collaboration across national borders, in 2012 the Capital Region of Denmark and Region Skåne in Sweden established collaboration on advanced specialist help in the fertility area. The aim is to exploit the special skills that already exist in Copenhagen and Malmø, respectively. For instance, Rigshospitalet excels in the latest techniques within freezing ovarian tissue from women in cancer treatment, and in Malmø women have better opportunities to receive donor eggs.

Moreover, the collaboration will shorten waiting times and ensure the best help in connection with complications. The collaboration is being established through EU support. Skåne University Hospital and Lund University are taking part from Sweden, and Rigshospitalet, Herlev Hospital, Bispebjerg Hospital as well as the University of Copenhagen are taking part from Denmark.

The year 2012 also saw important research results. Among other things, a large international study confirmed that low oestrogen birth-control pills increase the risk of arterial blood clots by about 50%, and that birth-control pills with a higher dose of oestrogen increase the risk by about 80%. The international study also confirmed that there are products that do not increase the risk at all, for example mini pills (progestin-only birth-control pills), hormonal IUD and hormonal implants. A total of 1.6 million Danish women took part in the study, which has attracted much attention from e.g. France, in which the Danish registers behind the research have evoked inspiration.

With more than 5,000 women with blood clots taking part in the study, it is by far the largest study carried out so far on arterial blood clots (blood clots in the brain and heart) and birth-control pills. Moreover, the study is the only study to have surveyed the impact of all new types of birth-control pills and other types of hormonal contraception placed on the market over the past decade. On the basis of this research, the Danish Health and Medicines Authority introduced new recommendations on the subject in 2012.



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An organisation under development

Rigshospitalet employs more than 8,000 people. The hospital holds more than 25 different specialist groups and most clinical specialist areas. Therefore, some work processes and routines can always be improved and changed for the better, and health and safety as well as the physical environment can be enhanced.

A safe working environment, in which employees thrive is necessary for Rigshospitalet to be able to offer high-quality core services to the patients. In 2012 Rigshospitalet was nominated by the unions and the employers' organizations and the Danish Working Environment Authority for the European working environment award 'European Good Practice Award' as one of two Danish enterprises. The award for 2012-2013 focuses on the enterprises and organisations which best encourage management and employees to collaborate on improving the working environment. The news that Rigshospitalet was among the nominees came in October 2012. The award will be presented in 2013.

By and large, it is important for Rigshospitalet to incorporate flow and the good working life when working on efficiency improvements, renovations, new building and investments. Therefore, all centres and departments must be given the opportunity to work with LEAN and methods such as Productive Ward. The entire hospital is focusing on implementing well-being initiatives, for example through the hospital's health ambassador.

Productive Ward is an evidence-based method to create higher quality in care and more time for the patients using the same resources. The method was developed by the Institute for Innovation and Improvement under the National Health Service (NHS) in England. Productive Ward has been translated into Danish and adapted to Danish conditions.

For a number of years there have been various LEAN projects at departments and centres, and in 2012 a comprehensive project was launched at all outpatient departments at Rigshospitalet. 'The Good Outpatient Departments' project forms the framework of five different projects inspired by LEAN. Some projects are the same for all outpatient departments in order to ensure knowledge-spillover and standardisation of work processes.

Others have been customised for the individual departments in order to accommodate the many different challenges that may arise.

Among other things, 'The Good Outpatient Departments' project has streamlined the work processes of secretaries, reduced waiting lists and referral times for patients and strengthened cross-disciplinary collaboration. Furthermore, the project has also meant that management information is now shared and used across departments to the benefit of outpatients. The project has been so successful that it will continue with new initiatives, such as introducing NemSMS (text message system used by the public sector to send reminders to citizens and enterprises about appointments, meetings, deadlines and similar) for patients, and there is good progress in sub-projects already introduced. In future the 'The Good Outpatient Departments' project will be expanded to include the entire department and not only the outpatient area. This means that wards, laboratories etc. will also benefit from the experience gathered.

The physical environment at Rigshospitalet will also develop. On the basis of a nomination from a jury, in May 2012 the Regional Council decided that the Danish architecture firm aarhus arkitekterne A/S is to design Rigshospitalet's new north wing. aarhus arkitekterne A/S will be the coordinating contractor with a team comprising 3XN, Grontmij, Nickl&Partner from Germany and Kirstine Jensens Tegnestue.

In 2012 Rigshospitalet received an important international award for the hospital's future physical environment; the World Architecture Award for best future hospital building ('future projects - health' category). The judges described it as 'a very logical design'. It's not only functional but goes beyond a simple hospital to allow for some architectural value.'

The future Rigshospital will comprise a treatment building with more than 300 new single-bed rooms, new up-to-date operating theatres, an intensive-care ward, outpatient departments and image diagnostics. The building will mean that conditions for patients as well as for staff will be raising the value of the highly specialised treatment offered by Rigshospitalet.



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Financial result for the year

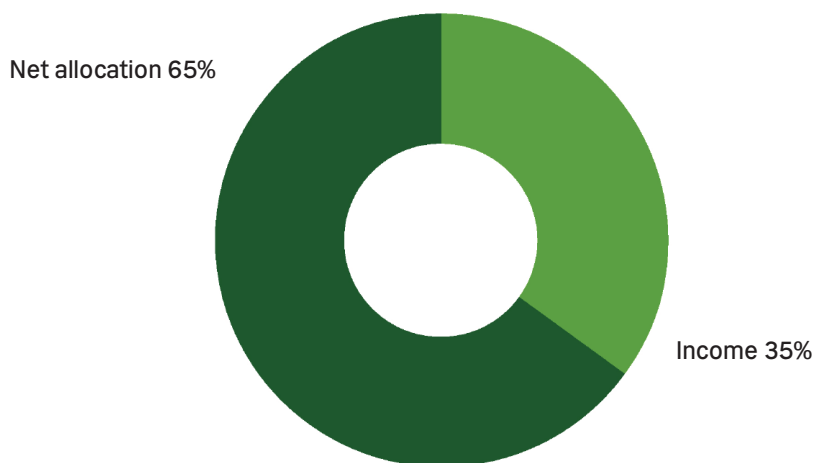
Rigshospitalet ended 2012 with lower consumption, which is primarily attributable to accruals for projects which were budgeted in 2012.

Again 2012 saw changes in the organisation of responsibilities at Rigshospitalet: The IT and medico-technical areas, like training/education and the HR area have been centralised. On this basis, in 2012 employees and budgets were transferred from Rigshospitalet to the two new central units; IT, Medical and Telephony and the Human Resources Unit, respectively.

The Department of Spinal Cord Injuries, Hornbæk has been transferred from coming under Rigshospitalet to now coming under Glostrup University Hospital.

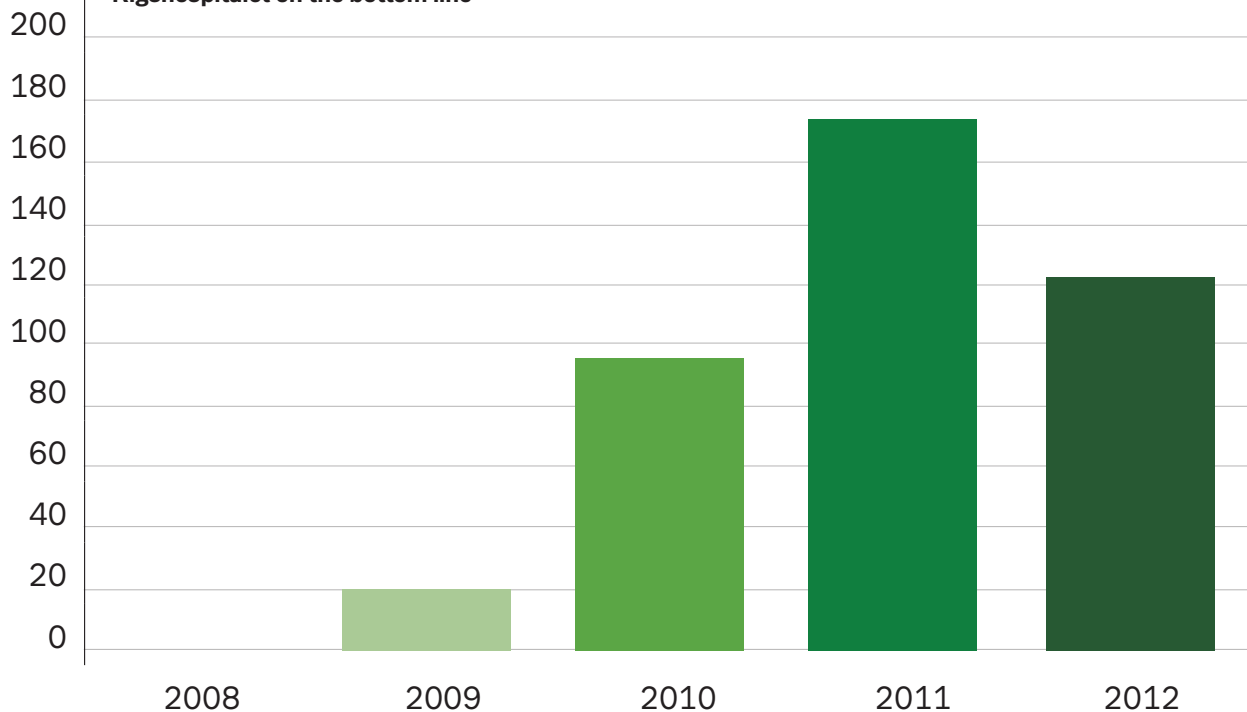
Finally on 1 July 2012, the Kennedy Centre was transferred from being a government institution to now coming under Rigshospitalet, the Juliane Marie Centre.

Financial basis 2012



DKK. mill

Rigshospitalet on the bottom line



Other results for the year in summary

The number of discharges rose by 5,6% to 80.148.

The number of bed days rose by 3,1% to 350.594.

The number of operations 1,9% to 55.601.

The number of outpatient visits rose by 4,9% to 442.590.

The average time of confinement to bed fell by 0,2 days to 4,2 days.

The bed occupancy rate was 88,3%.

Rigshospitalet's total activities 2012

Only activities subject to rates

Number	Financial statements 2011	Financial statements 2012
Operations	54.573	55.601
Discharges	75.864	80.148
Outpatient visits	421.947	442.590
Affected civil registration number	133.283	141.590
Bed days	330.333	340.594
Other services a)	171.089	184.338
Bed occupancy rate b)	83,9%	88,3%
Average time of confinement to bed (days) c)	4,4	4,2

The figures stated do not include Rigshospitalet's external functions.

a) Other services such as subsequent radiotherapy, CAG, dialysis etc.

b) The bed occupancy rate has been calculated based on the number of beds available.

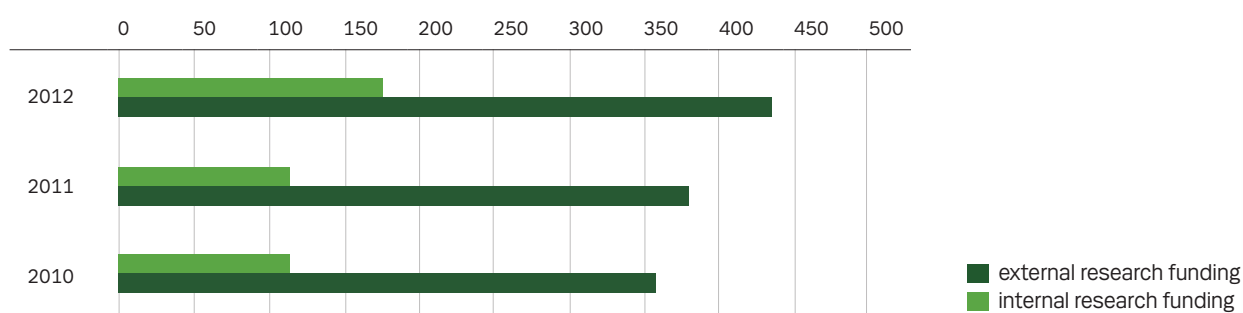
c) Average time of confinement to bed has been calculated as number of bed days per discharge.

Research

External research funding 2010 - 2012

DKK. mill.	2010	2011	2012
Balance brought forward	431	473	552
Expenses	352	384	432
Income	394	464	479
Balance carried forward	473	552	599

Internal and external research funding (2010 - 2012)



A new method for registration of internal research funding has been used for 2012. Therefore the numbers can not be compared directly with numbers from previous years.

Rigshospitalet's production of research 2008 - 2012

Research in figures	2008	2009	2010	2011	2012
DMSc degrees	6	4	8	8	6
PhD degrees	37	49	36	44	58
Higher academic degrees	43	53	44	52	64
Foreign language journal articles	1155	1129	1288	1469	1635
Danish journal articles	151	133	142	100	114
Total journal articles	1306	1262	1430	1569	1749
Foreign language publications	1212	1163	1329	1549	1683
Danish publications	182	226	193	138	145
Total publications	1394	1394	1522	1687	1828
Patents	0	0	1	1	2



Rigshospitalet in brief

Rigshospitalet is a highly specialised hospital, organised under the Capital Region of Denmark. With a few exceptions, Rigshospitalet covers all medical specialist areas. Rigshospitalet carries out highly specialised functions for all of Denmark and also carries out assignments for Greenland and the Faeroe Islands.

Management and organisation

The hospital is managed by a Board of Management with a hospital executive director and two assistant directors (a hospital medical director and a hospital nursing director) with staff functions for finance and planning, for staff/law, for human resource development and quality improvement, and for IT and communication.

Rigshospitalet is divided into six treatment centres and two interdisciplinary centres. Each centre has a number of departments. Each centre is run by a centre director with independent administrative and financial responsibility. Also a nursing head of centre/laboratory technologist head of centre is part of the management of the clinical centres. In 2012 Rigshospitalet employed about 8,300 full-time employees, and had about 1,200 beds.

Information and contact

Find information about the individual centres, departments and units at www.rigshospitalet.org



Rigshospitalet

