EVERY DAY IS AN OPPORTUNITY FOR NEW LIFE

Every day, HUS carries out examinations, provides care, conducts surgeries, and sees births and deaths. All the organ transplants carried out in Finland, for example, are done by HUS. This means that one patient’s passing can give a new lease of life to another patient. A successful organ transplant requires seamless teamwork, high-quality care and continuous training. The thousands of professionals employed by HUS prepare for these and other demanding specialist medical care tasks every day.

ORGAN TRANSPLANT COORDINATOR SIV ANSA:
What makes my job feel meaningful is knowing that a seriously ill patient has been given a new lease of life.
PAGE 8

SPECIALIST NURSE PAULA MÄKIÖ:
We have a good working environment, and the patients can sense this.
PAGE 22

HEAD OF DEPARTMENT KARI KROOTILA:
Some of the development work we do here is unique.
PAGE 32

DONOR COORDINATOR TUIJA LEVÄLAMPI:
It is really important for the entire staff to realise that a potential organ donor could be found in-house.
PAGE 38

CHIEF OF CLINIC GROUP SAMI PIRKOLA:
Outpatient care has achieved excellent treatment results and significant cost savings.
PAGE 44
<table>
<thead>
<tr>
<th>Care</th>
<th>Work</th>
<th>Science</th>
<th>Responsibility</th>
<th>Finance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Half a Million Patients</td>
<td>Finland's Second Largest Employer</td>
<td>Research Improves Care</td>
<td>Efficiency and Support</td>
<td>Cost Management</td>
</tr>
<tr>
<td>8  Organ Transplant Coordinator Siv Ansa</td>
<td>22 Specialist Nurse Paula Mäkiö</td>
<td>32 Head of Department Kari Krookia</td>
<td>38 Donor Coordinator Tuija Levälampi</td>
<td>44 Chief of Psychiatric Clinic Group Sami Pirkola</td>
</tr>
<tr>
<td>9  Specialist Helena Isoniemi</td>
<td>23 Specialist Salla Koivunen</td>
<td>33 Specialist Risto Renkonen</td>
<td>39 Specialist Lasse Lehtonen</td>
<td>45 Specialist Anne Berner</td>
</tr>
<tr>
<td>10  A Heart Transplant Gave Me a New Lease of Life</td>
<td>24 People from HUS</td>
<td>34 Careful Eye Surgery</td>
<td>40 Energy-Efficient Operations</td>
<td>46 Major Construction Projects</td>
</tr>
<tr>
<td>15  Anatomy of an Organ Transplant</td>
<td>25 Correct Technique Can Prevent Back Pain</td>
<td>35 New Ophthalmology Outpatient Clinic in Lauttasaari</td>
<td>41 OLKA Offers Peer Support</td>
<td>48 Controlled Growth</td>
</tr>
<tr>
<td>18  World's Best Stroke Treatment</td>
<td>26 Rehabilitation Helps Stroke Patients</td>
<td>36 Research Improves Care Practices</td>
<td>42 Procurement Competence Leads to Hospital Efficiency</td>
<td>52 Profit and Loss Account, Investments and Balance Sheet</td>
</tr>
<tr>
<td>19  Healing Art</td>
<td>29 Job Orientation Developing Hand in Hand with Students</td>
<td>37 Best Leukaemia Care</td>
<td>43 Simulator Turns Theory into Reality</td>
<td></td>
</tr>
<tr>
<td>20  Accident and Emergency Department Saves Lives and Patches Up Wounds</td>
<td>30 HUCH Cardiology Provides Assistance 24/7</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4 Review by the CEO

6 Review by the Chair of the Executive Board
HUS is repairing old things and building new things, all the while providing effective care for its patients.

Aki Lindén, CEO
THE KEY FIGURES IN THE 2013 FINANCIAL STATEMENTS WERE GRATIFYING FOR THE HUS JOINT AUTHORITY. THE COSTS ALLOCATED TO THE HUS MEMBER MUNICIPALITIES, I.E. THE BINDING NET COSTS, FOLLOWED THE BUDGET WITH AN ACCURACY OF 0.1%. THIS WAS THE FIRST TIME HUS HAS BEEN BELOW BUDGET SINCE 2002. THE BINDING NET COSTS GREW BY 1.6% COMPARED TO 2012.

THE GOOD RESULTS WERE PARTLY THANKS TO THE GOOD DEVELOPMENT OF SERVICE SALES TO AREAS OUTSIDE THE HUS MEMBER MUNICIPALITIES.

THE BUDGETED RESULT FOR 2013 WAS A DEFICIT OF EUR 7 MILLION; THE OUTCOME WAS THE OPPOSITE, HOWEVER, AND HUS MADE A SURPLUS OF EUR 10 MILLION. THE SURPLUS WAS DUE TO INCREASES IN BOTH DEMAND AND SERVICE PRODUCTION. DURING THE YEAR, HUS REDUCED ITS TOTAL DEBT AND DID NOT TAKE ON ANY NEW LONG-TERM LOANS, EVEN THOUGH INVESTMENTS WERE MADE TO THE TUNE OF OVER EUR 100 MILLION.

OPERATIONAL RESULTS WERE ALSO GOOD. SERVICE PRODUCTION GREW BY 2.5%. STILL, THERE IS ROOM FOR IMPROVEMENT IN MANY RESPECTS. THERE ARE SERIOUS DEMANDS WITHIN SPECIALIST MEDICAL CARE: THE CARE GUARANTEE HAS NOT YET BEEN COMPLETELY FULFILLED, FOR EXAMPLE.

IN CORPORATE JARGON, YOU COULD SAY HUS HAD A GOOD ORDER BOOK BUT ITS LEAD TIMES WERE TOO SLOW. THE DIFFICULTY OF THE SECTOR IS REFLECTED IN THE FACT THAT HALF OF ALL PATIENT CARE IS PROVIDED IMMEDIATELY, I.E. WITH A WAITING TIME OF A FEW SECONDS TO A FEW HOURS, BECAUSE THEY ARE CASES OF LIFE, DEATH AND HUMAN WELFARE.

HUS STAFF COMPLETE A JOB SATISFACTION SURVEY EVERY YEAR. THIS ALLOWS THEM TO GIVE FEEDBACK ANONYMously ON THEIR WORKING CONDITIONS AND MANAGEMENT. THE RESPONSE RATE IS USUALLY GOOD, WHICH IS PROBABLY PARTLY DUE TO THE FACT THAT EACH YEAR THE ANALYSIS OF THE RESULTS LEADS TO ACTUAL EFFORTS TO RESOLVE THE ISSUES IDENTIFIED.

IN 2013, AS IN PREVIOUS YEARS, THE RESULTS IMPROVED, WHICH WE ARE HAPPY ABOUT. THERE IS NO ROOM FOR COMPLACENCY, HOWEVER: CONTINUOUS IMPROVEMENTS MUST BE MADE.

PREPARATIONS WERE MADE THROUGHOUT 2013 FOR A MAJOR REFORM OF THE SOCIAL SERVICE AND HEALTH CARE SYSTEM IN FINLAND. THIS REQUIRES CONTINUOUS ACTIVITY AND INFLUENCE ON HUS’S PART TO PREVENT MISTAKES FROM BEING MADE IN THE REFORM, OF WHICH THERE HAVE PREVIOUSLY BEEN INDICATIONS. BY THIS I MEAN PRIMARILY THE POSSIBILITY OF THE ORGANISATIONAL RESPONSIBILITY AND SERVICE PRODUCTION ALLOCATED TO HUS BASED ON ITS EXTENSIVE CATCHMENT AREA BEING FRAGMENTED.

WE AT HUS BELIEVE THAT SUCH A BREAKDOWN WOULD REDUCE THE QUALITY OF CARE, J Jeopardise the equal availability of services, and increase costs.

A DRAFT NEW SOCIAL SERVICE AND HEALTH CARE BILL PUBLISHED RIGHT AT THE END OF 2013 PROPOSED A MODEL IN WHICH THE UUSIMAA REGION FORMED A SINGLE SOCIAL AND HEALTH CARE AREA. WE BELIEVE THAT THIS IS A VERY APT MODEL FROM THE POINT OF VIEW OF PATIENTS AND TAXPAYERS.
The good results achieved by HUS speak for themselves.

Ulla-Marja Urho, Chair of the Executive Board

The past year was dominated by preparations for a large-scale reform of social services and health care in Finland. HUS first adopted an expectant attitude towards the reform; once proposals were published towards the end of the year, we were no longer shocked by them after our extensive efforts within working groups and on proposals. The proposed bill safeguards the ability of HUS to ensure cohesive specialist medical care throughout its catchment area.
Throughout my time as a holder of a responsible position at HUS, I have seen and given proof of the fact that patient care at HUS works and that costs are reasonable. Plenty of convincing proof of this has been available in recent years. Throughout the preparations for the social service and health care reform, the trusted representatives of HUS have worked to prevent this functioning organisation from being dismantled. For example, based on its current strategy, HUS already works in close collaboration with basic health care providers, and also supplies support services for laboratories, imaging and transport. The facts speak for themselves.

This large, well-functioning organisation must be permitted to develop further as an entity. A big and cohesive health care organisation within Uusimaa is an advantage for both patients and taxpayers.

The huge construction projects on the Meilahti campus progressed in 2013. The location of the new Children’s Hospital has been approved in zone plans; the placement of the Traumatology and Oncology Hospitals has been agreed, and construction costs were included in the budget and approved by the Council.

A novel multichannel funding model has been approved and adopted for the Children’s Hospital. The funding will come from the HUS investment budget, state subsidies and private donations. The hospital is being built by a foundation which is very grateful for the donations it receives from citizens, and feels a grave responsibility for this. The funding model lightens the investment load on HUS. HUS will rent the premises for the Children’s Hospital from the foundation.

Another important decision apart from the Children’s Hospital has been the construction of a new hospital for traumatology and oncology. The project cannot start until the new laboratory facilities and the renovations of the patient tower have been completed.

In a university hospital, specialist medical care also implies the development of new things. HUS has adopted a new way of organising patient care through centres of expertise. The Heart and Lung Centre successfully started operating one year ago, followed by the Cancer Centre. Throughout the past year, work has been carried out to set up another ten centres of expertise. Their directors have been appointed and efforts to organise competence to best serve patients are well under way.

New regulations came into force in Finland at the start of 2014, which allow citizens greater freedom in choosing their place of treatment. This has not yet had an effect on a large hospital such as ours, but it is evident in our competitors’ marketing. The country’s largest university hospital must work together with the other hospital areas, but also maintain its own competence.

A decision on the establishment of a national oncology centre is still awaited in 2013. It must be a joint development company of all the university hospitals, but it should be headquartered in the country’s leading oncology centre, HUS. Besides this, the shared biobank run by HUS and the university must be put in place and certified as soon as possible.

Although we have achieved success in many respects in 2013, not everything went according to plan. The Ministry of Education and Culture did not grant the University of Helsinki a licence to provide master’s education courses in health sciences. Efforts to achieve this professorship will continue, because posts requiring a postgraduate degree will, through retirement, soon become available in Uusimaa.
What makes my job meaningful is knowing that a seriously ill patient has been given a new lease of life.

Siv Ansa, Organ Transplant Coordinator, Meilahti Hospital

I work with four other coordinators to arrange round-the-clock organ transplantation operations that serve the whole country. We coordinate everything related to every single organ transplant made in Finland, from the very first phone call onwards. In my work, I am concretely involved with life and death. Death is always a shame, but when it is inevitable, it is a great advantage if someone else – or perhaps several people – can derive a new lease of life from it. One person’s passing can fulfill another’s most profound desire in the form of a donated organ. Such a simplification may sound callous, but this is the positive aspect that makes our work rewarding and meaningful. Although the main emotion felt by the donor’s nearest and dearest is, naturally, sadness, giving the gift of life to someone else may also help to console them in their grief. We have the highest respect for the organ donors and their family and friends.
The 22 hospitals within HUS provided care for a total of 508,949 patients.

- 1,657,421 outpatient care visits
- 86,982 operations
- 18,061 births

One in four HUS patients are aged over 65.

For non-emergency waiting times, the criterion was the number of patients awaiting treatment or examination in proportion to the population. The target for HUS was to achieve the shortest queues of all the university hospital areas. The results of this are as yet unknown, because comparative data for 2013 have not yet been released. With regard to patient safety and effectiveness, targets were met.

Naturally, the fulfillment of health care targets is monitored using metrics and performance indicators. Behind the figures, however, is the everyday provision of care on which all of HUS’s operations are based. Strategic targets can only be met if every patient arriving at the hospital is treated as our most important patient. This – the attention and care provided to individuals – leads to the results that form the bigger picture.

Liver transplantations have become established as a way of treating advanced hepatic failure. Transplants have been made in Finland for over 30 years, and the country’s one thousandth liver was transplanted in late 2013. The results of HUS’s work with transplants are top of the league internationally, with a survival rate exceeding 90% for the first year and 80% for ten years.

The main causes behind the need for a liver transplant are immunological diseases. In many countries, the main cause is cirrhosis of the liver caused by Hepatitis C or alcohol use. In Finland, too, the number of alcohol-induced cirrhosis cases is slowly growing. Liver transplants are also carried out on infants, usually due to congenital bile duct insufficiencies or metabolic disorders.

Usually there are 5–12 patients awaiting liver transplants in Finland at any one time, and 50–55 transplantations are carried out each year. The target is to reach 70–80 transplantations each year. The biggest factor limiting the number of organ transplants is the availability of suitable organs. Organs are donated by persons declared to be brain dead. Usually the entire liver is transplanted into one recipient, but one liver can also be shared between two; a few such cases have been seen at HUS.

The objective of a liver transplantation is to return the patients to normal life: young people to their studies, adults to work, and pensioners to a full life enjoying their retirement. The quality of life of liver transplant patients has been found to be equivalent to that of the rest of the population.
“A HEART TRANSPLANT GAVE ME A NEW LEASE OF LIFE”
2013 has been a year of learning about parenthood for icon painter Jonna Riihonen. After her heart transplant, Riihonen has been so fit that little Jaro could soon have a sister or brother. She sees her new heart as a miracle, because it has brought so many good things.

On a March Sunday in 2006, the Riihonens had been having a perfectly ordinary, nice day. Just before midnight there was a phone call. Jonna and her husband Jukka Riihonen were still up. The call was from Meilahti, from Organ Transplant Coordinator Catharina Yesil.

She gave them the news that a new heart had been found for Jonna. She had to get to Meilahti as quickly as possible, so the Riihonens ordered an ambulance. Despite the 250-kilometre journey from their home in Vilppula, they made it there in under three hours.

The heart transplantation was successful. The surgery was carried out on a Monday, and Jonna woke in the early hours of Tuesday morning.

“I had the most awful headache. Compared to that, the pain of the surgical wound was nothing.”

Jonna recovered swiftly. After spending a week in intensive care, she was transferred to an inpatient ward in Meilahti. She was sent home after a few weeks. During the summer following the surgery, Jonna was already so fit that she managed to climb the fell at Ylläs. Naturally traces of the operation remained, such as the immunosuppressive medication that Jonna will have to take for the rest of her life.
Congenital Disorder
Jonna suffered from a congenital thinning of the aorta. Surgery had been carried out to try to improve her condition, starting first in 1980, when Jonna was eight years old. An artificial aortic valve was put in in 1987. Her aorta ruptured in 1990, resulting in more surgery. Jonna became used to ambulance rides, hospitals and procedures at an early age.

An extended good period followed the first three operations. Jonna studied fine art and art education, specialising in icon painting. She began having heart symptoms again in the late 1990s. She gradually developed congestive heart failure, and her body began retaining fluids. At the time Jonna lived in Jyväskylä, where her doctors kept changing. No one had a proper view of her situation as a whole.

For the academic year 2003–04, Jonna moved to Haapavesi in Northern Ostrobothnia. When she went for a check-up in Oulu, the cardiologist ordered more tests. The examinations were transferred to the Tampere University Hospital, as Jonna was about to move to that area.

Waiting for Surgery
In Tampere, Cardiologist Pasi Lehto examined Jonna and diagnosed congestive heart failure. The topic of heart transplants was brought up. Jonna was concerned and frightened about the procedure, as she had already had three operations previously. The cardiologist patiently answered her many questions.

Her condition worsened. In early 2005 Jonna was given extended sick leave. She applied for the heart transplantation waiting list, but was not given a place during that year. The year was not all bad, however, as Jonna married Jar-Ja in early 2005.

A new transplantation evaluation was carried out at the start of the following year. Jonna’s condition had deteriorated to such an extent that she had to use a wheelchair and even talking made her out of breath. This time she was put in the queue. She only had to wait a couple of months for the summons.

Could I Be a Mother?
When she received her new heart, Jonna was 34 years old. Her first child, Jaro, was born six years after that. There were no prior cases in Finland of heart transplant recipients subsequently becoming mothers.

Not everyone adopted a positive attitude, and concerns were expressed at both Tampere and HUS. Jonna also worried whether her heart and kidneys could cope with pregnancy and childbirth. She reckoned that if her body allowed her to become pregnant at the age of forty, then it would be able to bear it.

Towards the end of her pregnancy she had frequent check-ups with a cardiologist at Meilahti and with the Women’s Hospital. For the childbirth she came to the Women’s Hospital in Helsinki, in order to have all the necessary assistance close by.

Everything went well, however, and Jaro was born in the summer of 2012. “The birth was wonderful. I felt like crying and laughing at the same time,” Jonna says.

Living on a Small Boy’s Terms
“He’s the opposite of camera-shy,” Jonna says of Jaro, who is peering at the photographer with interest. The baby is balancing in his mother’s arms, giggling. Jonna becomes infected with the laughter. There is great happiness at the Riihonens’ kitchen table in Vilppula.

Jonna has gone through a huge variety of emotions since the birth of her child. Her happiness is immeasurable, but certain feelings such as a fear of death have also hit her hard. The life expectancy of a heart transplantation patient is around 20 years. Jonna is an optimist, however, and medical advances are being made every day.

“A child is worth all that expectation and fear.”
Jonna received good care at the Women’s Hospital when Jaro was born. They took her condition into account, but did not make a big deal of it. That is how Jonna continues to live now: aware of her situation, but focusing on life and her little son.

“I am so happy that our family is where it is now. We have a healthy child and I am so fit that I could get pregnant again.”

1980 | Jonna has her first surgery for her congenital aortic stenosis.
1987 | A mechanical artificial aortic valve is installed.
1990 | Jonna’s ruptured aorta requires a new operation.
1990 Late | Jonna develops heart failure.
2005 | Jonna applies for a heart transplant.
2006 Winter | Jonna is put in the heart transplant queue.
2006 Spring | Jonna receives a new heart.
2011 | Jonna realises she is expecting her first child.
2012 Summer | Her son Jaro is born.
2013 | Jonna enjoys a full family life.
When she received her new heart, Jonna was 34 years old. Her first child, Jaro, was born six years after that. There were no prior cases in Finland of heart transplant recipients subsequently becoming mothers.
ANATOMY OF AN ORGAN TRANSPLANT: FROM A PHONE CALL TO A NEW LIFE

The organ transplantation process begins with a phone call to the HUCH Transplantation Services, which is continuously manned by at least one of the five existing organ transplant coordinators. In 2013, 281 phone calls related to potential donors were received. Of these, 95 cases led to completed transplantations. Most of the incomplete cases were due to the potential donors being too elderly or ill, or having other issues that prevented organ donation. Most of the suitable donors had perished from a cerebral haemorrhage.

HUCH conducts all the organ transplantations carried out in Finland. Donors can come from anywhere in Finland, particularly from the other university hospitals, and in emergencies also from the other Nordic countries. Several organs can be obtained from a single donor: for example, Oulu University Hospital had ten suitable organ donors in 2013, from whom 28 organs were received.

Time-Critical Collaboration between Experts
Having found a potential donor, the organ transplant coordinator collates the necessary data for the surgeon who is on call at that time, who will decide whether the donor is suitable. If this is the case, the necessary staff are called in and a schedule is drawn up for the procedure.

The oldest living liver transplant patient is currently 88 years old, having received their new organ 20 years ago.

ALL ORGAN TRANSPLANTATIONS IN FINLAND ARE CARRIED OUT BY HUS
In 2013, 285 organ transplantations were carried out. Donors can come from anywhere in Finland, and in emergencies also from the other Nordic countries. Eleven kidney transplants, four liver transplants and seven chest cavity organ transplantations were performed on children.
IN 2013, THERE WERE 281 PHONE CALLS CONCERNING POTENTIAL ORGAN DONORS. OF THESE, 95 CASES LED TO COMPLETED TRANSPLANTATIONS.

The surgeon calls in a suitable patient who needs a transplant. The patient arrives at Meilahti Hospital and is prepared for surgery in a ward. Apart from the operating surgeon, transplantation surgery is attended by two other surgeons, an instrument nurse, an anaesthetist, a nurse anaesthetist and a supervising nurse.

Meanwhile, a surgical team consisting of three surgeons, an instrument nurse and an organ transplant coordinator travel to wherever the donor is for removal of the organ. Depending on the length of the journey, they do this by road or by air. The removal surgery is done in a hospital and attended by a local anaesthetist, anaesthetist nurse and supervising nurse.

If the donor is donating both heart and lungs, there are two removal surgery teams. The heart and lungs are removed first, as less time is available for transplanting them than for the kidneys and liver. The surgeries are coordinated so that the recipient of the transplant is anaesthetised at the time when the removal surgeon has personally seen that the donated organ is suitable for transplantation.

The first incision of the transplantation surgery is made when the organ has been removed, washed and packed. The organ transplant coordinator then brings the organ to Meilahti, where the receiving team has already prepped the recipient. The recipient’s malfunctioning organ is not removed until the new organ has arrived in the operating theatre and has been declared to be in working order. After the surgery, the patient is placed in intensive care.

Most of the incomplete cases were due to the potential donors being too elderly or ill, or having other issues that prevented organ donation. Most of the suitable donors had died from a cerebral haemorrhage. Many donors come from university hospitals. Several organs can be obtained from a single donor.
The first incision of the transplantation surgery is made when the organ has been removed, washed and packed. The organ transplant coordinator brings the organ to Meilahti, where the receiving team has already prepped the recipient. The recipient’s malfunctioning organ is not removed until the transplant has arrived in the operating theatre and has been declared to be in working order.

After surgery the recipient is placed in intensive care and the operating theatre is prepared for the next procedure.
WORLD’S BEST STROKE TREATMENT

The HUS Stroke Unit at Meilahti has always been known as a good place to receive treatment. In 2013 this fame became international, as the unit was confirmed as the world’s fastest and best provider of stroke treatment.

When a stroke patient is brought in to Emergency Services in Meilahti and transferred from the ambulance to a ward, the staff do not walk, but run. Running a distance of even 60 metres is worth it, as speed can determine the outcome in these cases.

“The sooner we can start thrombolysis, the better the patient’s chances are of making a full recovery. The average time from the door to the start of thrombolysis is 18 minutes. My own record is seven minutes, and I think that is actually a world record,” grins Specialist Satu Mustanoja.

The speed at which treatment can be started, regardless of the time of day or year, is one of the factors that has made the Meilahti Stroke Unit a world leader. This is indicated by the results of comparative quality surveys done by the Dr Foster Intelligence system. The highly regarded British comparison method covers around 40 major hospitals around the world, including HUS as the first hospital in Finland.

Experts from Dr Foster visited Helsinki in December to present the results, according to which HUS is the world’s best hospital in the treatment of cerebrovascular accidents. The Stroke Unit cares for some 500–600 patients per year, and has the lowest mortality of stroke patients in the world, at just 46.8% of the expected value.

“These results are only possible thanks to the optimal fine-tuning of collaboration that covers the entire HUS area. Apart from solid competence, it requires extreme commitment from staff,” says Turgut Tatlisumak, who is the Head of Department in charge of stroke care at HUS.

Tatlisumak wants to draw attention to the persistent efforts made over several years at HUS in relation to stroke patient care. Research related to increasing the efficiency of patient care has played a crucial role in the success of stroke care.
HEALING ART
On an autumnal Monday morning, users of the pedestrian underpasses at the Meilahti Hospital campus were pleasantly surprised to find more than 100 metres of colourful works by some of Finland’s foremost graffiti artists.

The ten works of art in the maze of tunnels brought a smile to the faces of the staff and patients who saw them. This was the result of an order made by the HUS Art Committee, which had started working at the beginning of the year. The aims of the committee could be summarised as analysing existing art-related activity, establishing an art committee at each hospital, and providing funding for new artistic initiatives. One such initiative was the Healing Art project conducted with the Arts Academy at Turku University of Applied Sciences.

In drafting its budget for 2014, HUS decided to allocate funding for art on a percentage basis. A grant of EUR 100,000 was reserved in the budget for art purchases for the new hospitals currently being built or planned.

HUS Strategy for 2012–2016: ART AND CULTURE IN HOSPITALS
A specific action plan is in place for making the patients’ care environment conducive to good health and supportive of the patients’ resources. Varying uses of art and culture are increasingly used as part of patient well-being. Art committees are being set up at HUS and its hospitals.
The Töölö Accident and Emergency Department is the centralised unit for treating all serious accidents in the HUS catchment area. It is the ultimate port of call for 1.6 million people when something really bad happens. Besides patients from the HUS catchment area, the department looks after seriously injured people from around the country.

The quality of care provided to seriously wounded patients is monitored at the Töölö hospital with the use of a trauma register. The patients entered in the register are those whose NISS score (which indicates the severity of the trauma) exceeds the internationally agreed and conventionally used limit of 15.

The data recorded in the register includes information
on the accident, on the state of the patient in the first aid room and during intensive care, and on transfer to further treatment.

Specialist Tuomas Brinck has used the register in order to compare the Töölö Accident and Emergency Department with large German trauma centres. The comparison looked at the content of the care and the average results achieved over a period of approximately six years. The patient data were made comparable, which made it possible to compare figures such as mortality.

The results indicate that in Töölö, intensive care continues for less time and patients are transferred to further treatment earlier than in the large German accident and emergency hospitals used for comparison. However, the most important metric, expected mortality, did not differ between the hospitals.

Expected mortality takes into account differences between patients, for example, with regard to injuries and age, and gives a comparable indication of how well the trauma centre succeeds in its primary task: saving lives.

“These kinds of comparisons are important. If our mortality were to be higher, we would know that there was something very significant to improve and learn from,” says Chief Physician Jarkko Pajarinen.

The register shows that the quality and results of care at the department have improved during the recording period, and the results from recent years exceed those of the comparison hospitals.

“In future we will also want more details on what happens to all the accident patients treated at the Töölö department after they leave intensive care and monitoring in our hospitals. That will allow us to follow up on the quality of our care and to change any procedures if necessary,” Pajarinen says.

According to Pajarinen, the next step will be to contact all patients, however serious or slight their injuries were, and to monitor their recovery and rehabilitation as a standard aspect of the treatment chain.

In large-scale accidents, the Töölö unit is the major reception point for casualties in the HUS area.

• Round-the-clock service
• 20,000 patients per year

Töölö Is There to Help When the Worst Happens

Patients end up in Töölö Hospital as a consequence of high-impact car crashes, neurosurgery, serious burns from major fires and other serious injuries.

Some patients have multiple injuries that separately or in combination lead to a life-threatening situation; around 90 such patients arrive in Töölö each year.

Around 1,000 advance notifications are given by a pre-hospital emergency care unit annually, and some 400 of these lead to trauma alarms at the Accident and Emergency Department. The department cares for patients requiring orthopaedic, accident-related, hand, neurological and maxillofacial surgery.

An average of 70 patients are treated per day, of whom 20-25 are transferred to a ward and from there to further treatment. Currently, the average patient throughput time is 2 hours and 31 minutes. New ideas and continuous development of operating processes are being applied to shorten this time.

HUS is building a new Trauma Hospital in Meilahti, which will replace the Töölö Accident and Emergency Department by the end of the current decade.
We have a good working environment, and the patients can sense this.

Paula Mäkiö, Specialist Nurse in Internal Medicine and Surgery, Day Hospital

The Day Hospital cares for patients requiring care in many specialist areas, so I get to carry out the full range of nursing tasks. I usually work for one week at the same workstation, such as procedures or infusions. Working at the Day Hospital is really diverse and challenging and requires good professional skills. I have learnt a lot in my couple of years here, but in this job your learning is never complete. There is plenty of training available. I completed the Competent Internal Medicine Nurse course while working a little over a year ago. I also have a rather diverse professional background, which brings confidence to my work. Our patients are of all ages. Every nurse has his or her own patients, but we also look after each other’s patients and are prepared to help a colleague. We have a good working environment, and the patients can sense this: they like to visit the Day Hospital. Some come for procedures every few weeks. This often leads to friendly relations between the patient and nurse.
HUS IS THE SECOND-LARGEST EMPLOYER IN FINLAND.

21,751 EMPLOYEES

- 12,189 nursing staff
- 5,690 other staff
- 2,860 physicians
- 1,012 special employees

For HUS to succeed in its operations, it needs sufficient, competent and motivated staff. The satisfaction of existing and future staff is one of HUS’s major goals. Continuous development work is carried out in relation to leadership, the ability of staff to influence their work, and job satisfaction. The results of a job satisfaction survey (the Working Life Barometer) indicate that more than eight in ten HUS employees would recommend HUS as a workplace.

Around 85% of employees are women. During the year, 1,274 permanent positions became vacant, and 17,598 job applications were received for these. Similarly, there were 528 temporary positions and 855 applications. Some 4,150 health care students received practical training at HUS.

The large organisation includes units of many different sizes, and there are as many as seven management levels. There are some 950 managers in total. Every manager has an average of 23 direct subordinates. The quality of leadership is monitored in the annual Working Life Barometer surveys. The score achieved by the management based on several questions was 3.7 (on a scale of 1–5). There is room for improvement, as this did not quite reach the target level of 3.9, but the score followed the positive trend of the preceding few years. The best scores were given to managers for their target-oriented action and fairness.

Annual development discussions with a supervisor are the right and obligation of every HUS employee. The fulfilment and content of these discussions are monitored, and managers receive training in conducting them. In 2013, the realisation rate of development discussions was 67%, which fell short of the target of 80%. Of those who had the discussions, 71% considered them to be useful.

The amount of work completed by HUS staff grew by 128 person-years.

TRAINING GUARANDEMIES HIGH QUALITY

HUS is known for its high-quality care and good treatment results. It has achieved this reputation thanks to the efforts of competent professionals. This is why it continues to develop its staff competence with a long-term approach and plan.

Through training, HUS can maintain and increase competence in the strategic areas of patient-oriented, timely treatment, first-rate research and education, ever closer partnerships with basic health care, and effective and competitive operations.

Competence development is based on the needs of HUS customers and on the specialist medical services that HUS provides to its member municipalities and other customers. HUS achieves top results in many areas, including intensive care for new-borns, cancer treatment, demanding hip and knee replacement surgery, and treatment of cerebral and myocardial infarctions. All the organ transplantations in the country are carried out at HUS.

The development of staff competence is planned using diverse tools. These include annual development discussions with a supervisor. Plans are also made to predict future personnel needs.

Besides basic and specialist education offered by institutions, staff develop their competence through internal training, job rotation, mentoring, online learning and development projects.
Anna Blubaum, Practical Nurse: “Coming to a hospital can be scary, and a nurse can work to make the patient’s stay more pleasant.”

Mirja Koponen, Nurse: “Here at the dialysis ward we laugh a lot. We get to know the patients very well thanks to our long care relationships with them.”

Mikko Keränen, Specialising Physician, Blogger: “I contribute to a blog about the life and work of people at HUS. The blog is a way to increase internal communication and team spirit.”

Transfer Ergonomics Training

THE CORRECT TECHNIQUE CAN PREVENT BACK PAIN

Lifting patients is a thing of the past: now care personnel transfer patients or assist them in the transfer. The main difference here is psychological and linguistic. With the correct technique, nothing is too heavy, and back trouble can be avoided.

A perfect sliding drawsheet has a lower surface that slides wonderfully from side to side, but not downwards. Nurse Mervi Klapuri-Kari could not live without these sheets, which can be ordered from the HUS central laundry.

“Another thing I wouldn’t change is the position of the sheet in the bed. It has to be beneath both the shoulders and the buttocks. Otherwise, moving the patient is much harder.”

According to transfer ergonomics trainer, Physiotherapist Tiina Karjalainen, every nurse could use less strength and more aids when moving patients. It is essential to take into account the patient’s own functional ability and weight.

“If your back hurts even a little bit after the working day, you are doing something wrong,” Karjalainen says.

• Training in transfer ergonomics should become a standard part of staff training from next year onwards. Musculoskeletal disorders are the biggest single cause of sick leave at HUS. The training reduces the physical strain of nursing and increases patient safety.
Bozo Kipré, Chef:
“It’s easy at Ravioli. When you come to work, you don’t see people of other nationalities: you see colleagues.”

Matti Snellman, Photographer:
“One of the sources of joy for a clinical photographer is seeing a patient smile at the last follow-up session.”

Hanneli Saarikoski, Chiropodist:
“One of the crucial aspects of patient care is choosing the right footwear. The wrong shoes can cause lots of different problems.”

Working Life Barometer:
CONTINUED POSITIVE DEVELOPMENT
Since 2006, HUS has systematically analysed the views of its staff on the organisation’s operations, leadership, interaction and personal well-being in a job satisfaction survey called the Working Life Barometer. In 2013, the survey was completed by 14,561 employees, i.e. 72.2% of the personnel (2012: 68.4%). The response rate has risen steadily, indicating that employees understand the significance of responding. Of the respondents, 84% said that their unit had processed the results of the former survey during the preceding year.

The results of the survey have followed a positive trend for several years, and in 2013 results were again mostly level with or slightly better than in 2012. Positive development was seen in questions related to the operation of the respondent’s work department and to work ability. The rating of the usefulness of development discussions fell, however, and in terms of leadership there was room for improvement, particularly as regards giving feedback, which was one of the areas of development for 2013.

- The areas chosen for special development attention in 2014 were the usefulness of development discussions, the support given to managers and the participation of staff, particularly during periods of change.

HUS OFFERS PLENTY OF OPPORTUNITIES FOR TRAINING.
During 2013, 17,474 employees or 80.3% of the personnel took part in training.
When **Jukka Aho**'s cerebral artery ruptured due to blood pressure, he had to learn everything from scratch, including how to walk.

Jukka Aho, a lecturer in chemistry and mathematics, was about to supervise an exam taken by his students in February 2013, when he suffered a stroke in the shower. Thanks to a neighbour’s resourcefulness, he received timely assistance and was taken by ambulance to the Stroke Unit at Meilahti Hospital. There it became evident that his cerebral artery had been weakened by blood pressure and had ruptured.

The exact diagnosis was a form of cerebral haemorrhage: intracerebral haematoma or ICH. It means that blood leaks into the brain tissue or another part of the cranium. The blood is so deep within the brain, around the basal ganglia, that neurosurgeons cannot treat it with surgery.

82,000 Finns have suffered a stroke. Stroke is an all-encompassing term that can refer to the damage caused to brain functions by a cerebral infarction, a cerebral haemorrhage or a subarachnoid haemorrhage.

The biggest cause of brain haemorrhages is arterial hypertension (blood pressure) that has been improperly managed.

---

**REHABILITATION HELPS STROKE PATIENTS**

---

**Stroke victim Jukka Aho and his journey back to normal life in 2013.**

- **25 February** Paralysis
- **1 March** Moved from Meilahti to Peijas Hospital
- **13 March** Moved from Peijas to Orton
- **19 April** Allowed to walk alone outside the hospital
- **23 April** Returned home
- **25 April** Start of rehabilitation period at Neurological Rehabilitation Clinic
- **30 April** Exhausted by balancing exercises
- **12 May** Able to use a knife and fork at Mother’s Day luncheon
- **18 June** Walks up and down the rock stairs at Meilahti several times
- **3 October** End of rehabilitation period

---

**Jukka Aho with the rehabilitation team:** (from the left) Social Worker Danielle Engström, Nurse Hanne Tiainen, Occupational Therapist Mirja Lahtinen, Chief Physician Minna Riekkinen, Physiotherapist Marika Hillo and Neuropsychologist Heidi Heinonen.
treated or left untreated for a long time. This causes the cerebral arteries to degenerate and weaken. The risk of haemorrhage is increased by anticoagulation medication, bleeding disorders and brain tumours. In young people, the cause may be disorders in the structure of blood vessels.

The subacute stage of paralysis lasts for three to six months. Usually that is the most effective period for rehabilitation.

For Jukka Aho, treatment during the acute paralysis stage continued at Peijas Hospital. Often on waking up, he would think he was at home and try to get up to make coffee, even though his left leg did not yet work. On one occasion the nurse found him on the floor.

“For a long time I had to reason with myself: consciously think about the fact that such a long corridor would not fit in our house, and, therefore, I couldn’t be at home,” Aho says.

Two weeks after his attack, Aho was moved to Orton, which provides outsourced neurological rehabilitation for HUS. At Orton, Aho made such progress that he only really needed a walking stick as a psychological crutch.

By April, just two months after his stroke, Aho was able to return home. He took an orchid as a gift for his clever upstairs neighbour. His home was just as before, although he now has a stove and a coffeemaker that switch off automatically.

Aho visited the Neurological Rehabilitation Clinic at HUS many times a week, sometimes for three hours at a time. On his first visits, he met with Physiotherapist Marika Hillo and Occupational Therapist Mirja Lahtinen. Based on examinations, they made a plan for treating Aho’s problems. He had problems maintaining his balance, which quickly wore him out, and he had poor function in his left hand. The rehabilitation also included instructions for exercises to complete at home.

The occupational therapist helped Aho to cope with important daily functions. Meanwhile the physiotherapist focused on improving muscular strength and mobility, as well as physical capacity.

Blood Pressure and Smoking Increase Risk
Rehabilitation Nurse Hanne Tiainen measured Aho’s blood pressure and spoke to him about the risk factors for cerebral haemorrhage: smoking and high blood pressure. Up to a half of strokes are recurring, so monitoring is vital. Another major risk factor is diabetes.

“My greatest sin was not measuring and keeping track of my blood pressure, even though I knew it was high. I trusted that the medication would keep it under control. And I am really fighting against smoking now,” Aho says.
The Balance Master is used to evaluate and analyse a rehabilitation patient’s balancing ability. Physiotherapist Marika Hillo tested Jukka Aho’s progress at the start, in the middle, and at the end of rehabilitation.

According to Chief Physician Minna Riekkinen, improper treatment of high blood pressure is very common. Many patients don’t even discover they have it until their arteries rupture. For some, it is immediately fatal.

The motivation of the patient is a major factor in the results of rehabilitation. The main factor that predicts the success of recovery from a stroke is, however, the severity of the infarction or haemorrhage.

For many adults the best sign of a good recovery is the ability to return to work. That is the aim of the HUS rehabilitation clinic: getting people back to work – sometimes to their former jobs, and at other times to adapted tasks. Not everyone is able to return to working life; in that case the aim is to allow the patients to enjoy a full everyday life and to complete activities that they find meaningful. One half of neuropsychological rehabilitation patients are able to return to work.

In 2013, more than 4,000 health care students received practical instruction at HUS. Additionally, there were around 1,500 summer interns who gained work experience in our hospitals. Careful job orientation is one key to ensuring HUS remains an attractive employer for future professionals.

In 2013, HUS continued developing its job orientation according to a project initiated in 2011. A general orientation programme was completed in late 2013 and will be introduced in 2014. The purpose of the programme is to ensure and harmonise the orientation received by new employees, based on received feedback.

Every student has the right to receive proper orientation and to work as an equal member of a team in a functioning learning environment. Students receive feedback throughout their practice period. It is also important for them to give feedback, as it helps HUS to develop its operations. This can in turn improve the long-term effects of practical studies.

Practical work and summer internships are important channels for advance recruitment and improvement of its image as an employer for HUS. Practical teaching leads to competence that corresponds to the needs of the labour market, which is why the aim is to offer students the best possible guidance and orientation. It is a way for HUS to ensure the availability of competent personnel in the future.
The HUCH Heart and Lung Centre started operating in 2013. Its cardiology services look after the hearts of 2.5 million Finns, day and night.

A grey screen shows the beating of a human’s most important muscle, with contrast medium flowing through the coronary arteries on its surface.

Cardiologist and Senior Physician Ilkka Tierala points at the screen: there is a marked narrowing (stenosis) of one of the branches of the artery. The heart cannot obtain the necessary oxygen and nutrients, and the patient has been brought to hospital due to severe pains. An ST elevation myocardial infarction is a deadly serious situation and must be treated immediately.

Cardiologist Juha Heikkilä inserts a catheter in the artery via the radial artery and feeds in a three-millimetre balloon, which is inflated using a pressure of 20 atmospheres. The procedure is finalised by ensuring the coronary artery stays open with a piece of mesh: a stent. The result is a proper, wide artery with no stenosis.

At the Cardiology Clinic at Meilahti Hospital, blocked coronary arteries are filmed and stented all the time, around the clock. One in three victims of ST elevation MI (STEMI) die before reaching hospital, and mortality is one in five even for those who receive paramedic assistance.

For those who reach hospital, the situation is better: the mortality rate for STEMI patients at hospital is only 3%. STEMI is treated with either angioplasty (the balloon inflation technique) or thrombolysis. The ambitious target is for every STEMI patient to be treated immediately at a cardiology unit with angioplasty.

Paramedics bring 700 STEMI patients and around the same number of NSTEMI patients to HUCH each year.

Ilkka Tierala wishes the hearts of all Finns were cared for at cardiology units.
What Makes a Good Cardiologist?

“Firstly, you have to be patient: think and diagnose as carefully as an internal medicine specialist. Secondly, you must be decisive enough to take care of your duties in a timely manner, without being scared of taking action. You have to have nimble fingers without being too slow or too much of a perfectionist, because it takes too much time. A cardiologist is an artisan who enjoys the noise of things happening all around,” Tierala says.

The maximum delay between diagnosis and angioplasty is two hours, because the risk of death increases with time. The faster action is taken, the better the patient’s prospects. Within the HUS catchment area, a hospital is never far away, and patients receive angioplasty within the time specified in the Current Care Guidelines.

The Disease that Affects Everyone

Everyone suffers from coronary heart disease as they get older. Heikkilä describes the disease as dynamic and very broad. The most typical sufferer is a 50-year-old male smoker or a 70+-year-old female non-smoker. Adult-onset diabetes is the main risk factor after smoking; the others are high cholesterol and blood pressure.

Some never suffer an actual heart attack, even if their symptoms are so severe that they can become exhausted from reading the newspaper. Others collapse with ventricular fibrillation without any sort of advance warning. A tiny cholesterol plaque on an artery wall can suddenly become ruptured and a blood clot will block the vessel.

Finnish hospitals treat 7,000 ST elevation myocardial infarctions (STEMI) per year and 15,000 non-ST elevation MIs (NSTEMI). Sudden death is a common occurrence in heart disease, with 7,000 of those in Finland each year.

“If prehospital care can treat the fibrillation and restore the heartbeat, the patient may be able to return to a perfectly normal life later,” Heikkilä says. With the help of physical and psychological rehabilitation, lifestyle advice and social support, some can regain their former functional ability.

The HUS unit is responsible for the hearts of 2.5 million Finns. Many of the older physicians specialising in the heart were originally internal medicine specialists, whereas younger doctors may have specialised directly in cardiology.

What Makes a Good Cardiologist?

“Firstly, you have to be patient: think and diagnose as carefully as an internal medicine specialist. Secondly, you must be decisive enough to take care of your duties in a timely manner, without being scared of taking action. You have to have nimble fingers without being too slow or too much of a perfectionist, because it takes too much time. A cardiologist is an artisan who enjoys the noise of things happening all around,” Tierala says.

We return to the catheterisation lab, where the lead-clad Juha Heikkilä is about to start the evening’s last contrast medium imaging procedure, while chatting with the patient about the dangers of smoking.

Hopefully, no one will get such severe chest pains tonight that Heikkilä and his team will have to return to the hospital.
Some of the development work we do here is unique.

Kari Krootila, Head of Department, Physician Responsible for Anterior Segment Surgery Unit

My work offers challenges every day. I get to follow and take part in the extensive and rapid development of anterior segment surgery. HUS makes diverse use of modern cataract surgery in carrying out demanding eye operations. We also utilise the latest technique in corneal transplantations, for example, only replacing the damaged layers of the cornea. This reduces the number of complications and rejection reactions, and shortens recovery time. This is the only unit in Finland where personnel can specialise in the anterior segment surgery field. Thanks to our development efforts, there are now more treatment options from which we can choose according to patients' individual needs.

One thing we have worked on is a treatment for keratoconus, which reduces the need for corneal transplantations. Some of the development work we do here is unique, for example, our femtosecond laser-assisted surgery to correct corneal damage and astigmatism.
INTERNATIONALLY HIGHLY RATED RESEARCH PRODUCES

NEW KNOWLEDGE FOR BETTER TREATMENTS

1,000 undergraduate students of medicine and dentistry
2,000 specialising students of medicine and dentistry
169 graduates with a degree in medicine
191 graduates with specialist degrees in medicine
10 graduates with specialist degrees in dentistry
104 theses

5% of HUS employees have research training

Finnish society rightfully expects HUS to provide diagnostics and treatment based on the most up-to-date knowledge. High-quality and persistent research is a crucial prerequisite for this to be achieved. Through scientific research, staff obtain expertise on the best treatment practices based on evidence.

The success of HUS as an internationally renowned generator of scientific knowledge and developer of treatments is based on close collaboration between the hospitals and the university's researchers: HUS forms a part of the Academic Medical Center Helsinki (AMCH), which is among the top ten European organisations carrying out clinical research. Since the year 2000, HUS personnel have carried out more than 1,600 tasks as international visiting experts, and nearly half of its research team leaders have been invited to take part in the highly competitive task of authoring international textbooks.

The results of research are also visible in the hospital's everyday operations. In the last 11 years, HUS has introduced more than 700 improvements related to patient examinations or treatment, based on research conducted in-house. One example of a world-class achievement is the time-critical treatment of stroke victims: at HUS thrombolysis begins within 20 minutes of the patient arriving at the hospital, whereas the general target around the world is 60 minutes.

ACADEMIC MEDICAL CENTER HELSINKI MODERNISES TEACHING

The core of the Academic Medical Center Helsinki is formed by HUS and the Faculty of Medicine at the University of Helsinki. The main forms of collaboration within the centre are medical education and research. AMCH is internationally ranked among Europe’s top ten and the world’s top 50 medical education, research and treatment centres.

During 2013 it initiated a reform of the content of its teaching in medicine and dentistry. This was preceded by an analysis of the changed operating environment, so that the content of education could be reformed to correspond to modern health care.

Teaching technologies are also being upgraded. Digitisation of education has progressed very swiftly and successfully. One development project involved providing all first-year students with iPad tablets, thanks to funding from the Jane and Aatos Erkko Foundation.

Research into optimal patient care is another central theme at AMCH. The centre publishes more than 2,000 peer-reviewed scientific articles each year. A list of the articles, updated daily, can be found on the website of Terko, the Meilahti campus library. The “Viikon julkaisu” blog also provides information on research, with experts presenting interesting studies once a week.
The HUCH Eye and Ear Hospital’s eye bank is just a modest room, but the Anterior Segment Surgery Unit of the clinic conducts diverse and demanding operations on the eye, including corneal transplants.

The Ophthalmology Clinic is unique in Finland in terms of its diagnostic ability and treatment equipment. It carries out half of the corneal transplantations in the country, and it is the only place that can conduct partial transplantations. Just over 100 corneal transplantations are carried out each year. The cornea is only half a millimetre in thickness and around 10 millimetres in diameter. It is the most refractive lens of the eye and consists of five layers. The top layer is the epithelial, the second is Bowman’s layer, the third is the corneal stroma (i.e. a thick network of collagen fibres), the fourth is Descemet’s membrane, and the lowest and fifth layer is an endothelium that pumps fluid and is only the thickness of a single cell. Most patients needing a tissue transplant suffer from keratoconus, which is a conical deterioration of the cornea. Transplantations are carried out on children with a congenital corneal disorder, and on the elderly.

Head of Department Kari Krootila and Adjunct Professor Juha Holopainen started carrying out light-curing treatments on keratoconus patients at the Ophthalmology Clinic around four years ago. In this method, the deterioration of the cornea is halted using UVA radiation. It is not suitable for everyone: it cannot be done if the disease is very advanced or if the cornea is very thin.

Usually by the time a corneal transplantation is considered, the keratoconus has significantly reduced the patient’s functional ability.

“A corneal transplant is a risky operation that always has some kind of after-effects,” Krootila says.

Stitches have to be kept in the eye for a year after penetrating surgery. There is no cicatrization in tissue with no blood vessels, so it takes a long time to become attached. All in all, the post-surgical treatment takes eighteen months. It cannot be done at a central hospital; everyone is treated at the HUCH Ophthalmology Clinic.

There are three surgical methods for treating keratoconus: apart from the light-curing technique, the conical cornea can be encouraged to return to its correct shape using a C-shaped support arch placed inside the cornea. Another method is a penetrating corneal transplantation, in which the whole cornea is replaced, and some patients can have the surface membranes replaced layer by layer. In Finland, this latter form is only carried out at HUCH.

The problem with a penetrating graft is that the body will often reject the new cornea. The lowest layer of the cornea, a non-renewing endothelium the thickness of a single cell, is the most sensitive to rejecting foreign tissue.

But if that layer is healthy, as it is in keratoconus, then it does not always have to be replaced. The surgeon can take off only the top layers and leave in place the difficult endothelium and Descemet’s membrane, which protects it.

These two layers together are about 1/100 of a millimetre in thickness. The partial transplantation is a very demanding operation: 10–15 micrometres of cornea must be left in place. That is incredibly thin. If the deepest corneal layers rupture during surgery, a traditional transplantation of the entire cornea must be carried out.

Krootila started carrying out layer transplantations in 1999. Now these operations can be carried out by two eye surgeons at the clinic. All in all, there are four surgeons who conduct corneal transplantations. The cornea can become permanently clouded after
cataract surgery. If the inner endothelium of the cornea is diseased, it is possible to replace just that layer. In that case, both the endothelium and Descemet’s membrane are removed. The replacement layers are inserted in the eye through a tiny incision. This helps the patient recover more quickly than in the case of penetrating surgery.

Krootila started carrying out transplantations of the inner layer with now-retired Adjunct Professor Risto Uusitalo in 2006. Today Krootila is the only surgeon capable of conducting them.

“The objective is that several surgeons should be able to carry out all the procedures. We are very happy to teach young surgeons, but it is a very long process,” Krootila says.

He says there is no acute shortage of corneas for use in transplantation, but there is a constant need. The organs are obtained in collaboration with the HUS Transplantation Services, but sometimes they have to be acquired from outside the hospital area. The transplant queue usually has a couple of hundred patients in line at any one time. The waiting time can be years.

“Organ transplant activities have to be increased throughout the HUS area. If the chain worked properly, there would be enough organs for us.”

THE WESTERN OPHTHALMOLOGY OUTPATIENT CLINIC STARTS OPERATING IN LAUTTASAARI

The HUCH Ophthalmology Clinic obtained long-awaited extra space with a new clinic that opened on Gyldenintie in Lauttasaari, Helsinki, in late August.

A six-year lease has been signed on the premises. The new premises house cataract surgery operations and the corneal clinic from the Eye and Ear Hospital, as well as ocular rehabilitation, which used to be divided between three different locations. As the population ages, there will be a sharp increase in ocular diseases, and, therefore, in the demand for eye-related medical services, and the facilities on the Meilahti campus are not well equipped to cope with this. There is also use for the space that became free at the Eye and Ear Hospital. More space is needed by diabetes sufferers, who make up a growing proportion of patients, as well as by child patients. The operating theatre capacity that has been freed up will be used for other types of eye surgery.

Corneal transplants await their new destinations in the eye bank refrigerator. When a new cornea has been inserted, the stitches have to remain in place for a year, otherwise the graft will not become properly attached.
Domestic violence affects the lives of 22% of the Finnish population.

RESEARCH IMPROVES CARE PRACTICES

Making use of the results of a survey concerning domestic violence in practical care work at HUS has improved the care chain from the points of view of both the patient and the care staff.

“Research and practice depend on and feed each other. When we research something and apply the results in practice, we observe things that will either support the results or call them into question. It may also lead to completely new areas of research. The relationship between theory and practice is like an endlessly spinning wheel,” says Researcher Tiina Lindholm.

Lindholm got her PhD in Health Science from Åbo Akademi University with a thesis on the topic of domestic violence from the points of view of women and men. The thesis formed a part of the shared EVO research project of HUS and Åbo Akademi, which combines the caritative care theory developed by Professor Emerita Katie Eriksson with practical treatment methods.

Through this nursing science research project, Lindholm has been able to watch the application of her research results in practice. She was involved in a multidisciplinary development team at Jorvi Hospital, which created a care pathway for victims and perpetrators of violence, and updated the patient guidelines.

“The aim was to harmonise and simplify treatment practices so that the care chain would be unbroken, and so that the patients would not have to seek assistance by themselves using their limited resources. Instead, they would know what to do next when they left the hospital.” The care pathway is also an important tool for medical staff in meeting and treating both parties involved in violence.

Lindholm says that care work often focuses on the physical damage caused by the violence and ignores all the other related issues.
“The patient has more than just physical wounds and injuries: they feel a lot of guilt and shame, for example. They may even be considering existential questions related to life and death, which should be handled in a multidisciplinary way.”

Focus on Ethical Perspectives
Lindholm emphasises the ethical point of view in treatment.
“...My primary message is that the care personnel must really understand the ethical perspectives of their work, as well as the idea of care, as they are particularly strong in encounters with patients who have committed acts of violence. They have human dignity and value, too. It is our duty to help the patients on their way, impartially, without blame and judgement. As care workers we have the opportunity to assist them in leading a better life.”

The care pathway and the new patient guidelines were introduced in Jorvi in the spring of 2013. Lindholm has received positive feedback on them.
“The model gives the employee the courage to intervene in cases of violence. When they know how things are done here, they have ‘permission’ to intervene and act. The patient is at the core, but the guidelines also consider what’s best for the nursing staff: violence can be a sensitive, difficult and frightening issue even for a professional.”

The Jorvi project ended in late 2013, but Lindholm hopes it will continue.
“We dearly hope that the project can be extended to the whole HUS area, and that shared care practices can be created in relation to the victims and perpetrators of domestic violence. It would be a benefit for the whole organisation, the care staff and, above all, the patients.”

Around 150 people contract acute myeloid leukaemia in Finland each year. The related medical care causes damage to healthy tissue, increasing treatment-related mortality, so there is a great need for treatments that focus more specifically on the cancer cells.

The objective is that the best treatment can be specified for each patient individually. This requires a seamless information flow between the laboratory and the care unit.
“Research is conducted to develop and apply new tests to measure the medical sensitivity of individual cancers. The main focus is on examining each cancer individually,” Porkka says.

Instead of the usual sample group of patients, Porkka and Kallioniemi are researching an individual patient, whose responses to medication and biological properties may lead to answers to questions.
“We make use of the sensitivity classifications of cancer drugs, as well as research on the genetic alterations of drug-resistant cancers. Based on these we are working to develop better combined therapy methods that will prevent cancer recurrence in the future,” Porkka and Kallioniemi explain, summarising the aims of their research.

BEST LEUKAEMIA TREATMENTS, INDIVIDUALLY

Professors Kimmo Porkka and Olli Kallioniemi are working on developing a specific treatment for acute myeloid leukaemia, with funding from the Cancer Foundation.

The research team led by Kimmo Porkka (on the left) works at the HUCH Haematology Clinic, and the team led by Olli Kallioniemi works at the Institute for Molecular Medicine Finland (FIMM) of the University of Helsinki.
It is really important for the entire staff to realise that a potential organ donor could be found in-house.

Tuija Levålampi, Donor Coordinator, Porvoo Hospital:

The donor coordinators form connecting links between various hospital departments and physicians. I organise training for our staff, am in charge of the organ donation guidelines for our hospital, and help to increase awareness of organ donations using a learning path within the hospital. The path is used to describe the journey of an organ donor within the hospital, from identification to transplantation surgery. It is really important for the entire staff to realise that a potential organ donor could be found in-house, and that means that they have to be treated according to the organ donation guidelines. We donor coordinators also increase awareness of organ donation among patients and their close relatives. It makes it easier for us if the relatives know the patient’s views on organ donation. Every successful organ donation saves taxpayers’ money, but above all every organ donation is a new opportunity for another person. I have met people who have received organ transplants. They have all been really grateful for the new opportunity for a new life.
FURTHER IMPROVEMENTS IN ENERGY EFFICIENCY

Energy consumption in HUS buildings, 2013

- Heating (standardised) 151,450 MWh
- Electricity 108,957 MWh
- Natural gas 2,824,883 Nm³

The consumption of residential properties is not included.

HUS improved its energy efficiency, exceeding the energy conservation target set for 2013 by August already. This means that energy efficiency measures related to the 2016 conservation target of 25.1 GWh are well under way. HUS has been a signatory to the municipal energy efficiency agreement (KETS) since 2008.

The HUS energy efficiency agreement steering group convened twice during 2013 and also set up an energy efficiency team under HUS’s core operations and support services, with representatives from several units. The team met four times during the year.

The energy efficiency team monitored energy consumption and worked to improve heating, electricity and water metering. The team examined consumption reports and the calculation of conservation outcomes, which were included in the nationwide KETS annual report. One of the central themes for the team in 2013 was improving awareness and communication around energy efficiency.

The total energy costs for 2013 were EUR 19.3 million, which was 3% less than in the previous year. Particularly significant savings, 11%, were achieved in natural gas consumption. Consumption of both heating and electricity fell by just under 2%, whereas water consumption remained constant.

INTEGRATING PATIENTS IN PATIENT SAFETY EFFORTS

Transparent reporting of risks is an essential method in developing patient safety. This is why staff and patients are encouraged to report any safety incidents they may observe during their care. HUS uses a system called HaiPro for reporting risks and is currently promoting the active use of the system.

This was successful in 2013, as more reports of safety incidents were made than before, with the total growing from around 10,000 in 2012 to 13,000. Risks related to medication still form the main incident type, accounting for 42% of all cases. Another major type (22%) concerns information sharing and IT systems.

There are detailed instructions for handling reports of safety incidents at HUS. A critical aspect of the model for improving patient safety is the obligation of the staff to take corrective action whenever an incident is reported. Serious incidents (“near misses”) are analysed using the international root cause analysis model, which aims to investigate the interplay between all the different issues leading to the situation.

Involving patients is a central part of patient safety efforts. HUS uses the crowdsourcing method for mapping issues related to patient safety on the safety-related website hus.fi/potilasturvallisuusyksely.
HUS has achieved notable savings in recent years by analysing its energy consumption. The heating and electricity consumption of hospital properties has been reduced significantly by fine-tuning building automation functions, while costs have been cut by optimising systems, such as heat recovery.

“The changes carried out in just the last two years have brought energy savings worth around half a million euros per annum. These savings have been achieved practically without investments,” says Property Services Manager Jukka Hakkila from HUS Real Estate Ltd.

Under supervision from the Property Services Unit led by Hakkila, several HUS hospital properties have been able to make major improvements in their operational energy efficiency. Apart from staff competence, technical solutions have also been developed to achieve savings; the latest efficiency initiative was the start of the electronic monitoring system HUSe in late 2013.

“With the new system we will be able to monitor our properties’ energy consumption, conditions and any building technology alarms in real time, and to manage related processes if necessary,” Hakkila says.
In 2013, OLKA was manned by Coordinator Johanna Pikkarainen (on the right) as well as volunteers, including Vuokko Heikkilä-Kankkonen from Europa Donna Finland.

OLKA OFFERS PEER SUPPORT

The OLKA patient support helpdesk mediates peer support and information from former patients.

OLKA opened in April 2013 in the lobby of the Meilahti Tower Hospital. Between April and December, 2,300 visits were logged in OLKA. The helpdesk was manned by volunteers from patient organisations, coordinated by Johanna Pikkarainen with nurse Minna Myllykoski.

“OLKA is a low-threshold meeting place that welcomes patients, their friends and relatives, hospital staff and other visitors. OLKA is a place where there is time to meet and listen to people,” Pikkarainen says.

Two health care professionals are employed full-time by OLKA on working days.

“We are here at OLKA together with the volunteers, peer supporters and representatives of patient organisations to guide and assist people. There are more than 50 volunteers.”

The aim is to make the forms of support offered by patient organisations available to patients and their close relatives simple and at the right time. A diagnosis can turn a person’s life upside down, and support from fellow sufferers can provide some relief.

OLKA offers facilities for patient organisations to use for themed events. There are around 40 patient organisations actively involved in the operations.
HUS has undergone a period of intensive construction in recent years, and this situation will continue in the near future. Old hospital properties have been renovated; facilities have been changed and new ones have been built in order to ensure efficient and expedient hospital operations. The nature of hospitals places certain special requirements on the completed properties and the construction processes. Applying these demands specialist procurement competence.

"Naturally, new facilities are built so that our hospitals can operate on premises that are as modern and spacious as possible. Our task is to find the most competent and cost-effective people to complete the work in such a way that the end result meets our usage needs," says Vesa Vainiotalo, Head of Building Commissioning at HUS Real Estate Ltd.

The building-site fence is bathed in sunlight in the middle of the busy Meilahti hospital area in Helsinki. The site behind it, just like the hospital building next door, is swarming with activity. In both places, work is being done for the good of the patients.

One of the most important factors during the construction period is ensuring that the project is completed in such a way that it causes as little disruption to ongoing hospital operations as possible. This means that noise and vibration limits, for example, are significantly lower than on residential or office construction sites.

The combined problem of meeting multiple requirements during the construction process, keeping costs reasonable and staying on schedule is not that easy to solve. This is why the whole thing is managed from start to finish by those who have the competence.

"The building commissioning department at HUS Real Estate is in charge of the overall process, from design to construction, handover and running-in, without forgetting the supervision, inspections and repairs that go on during the warranty period," Vainiotalo says.

While there have been many reports in the mass media of grey-market practices on Finnish construction sites, HUS has a clear conscience. HUS Real Estate has worked in close collaboration with the tax audit office in Uusimaa, and inspections have been carried out both on construction sites and on the company’s bookkeeping. Everything has been found to be beyond reproach. Apart from taxation, the building commissioning department keeps a close eye on its responsibilities as a construction client and on the responsible operations of partners.

"We use a client responsibility monitoring service that automatically notifies us if anything untoward appears in the contractor’s responsibilities in the companies we work with."

The high level of procurement competence is also evident in the fact that building projects stay within budget.

"In producing and buying services and in choosing partners for the work, we emphasise the overall benefits to be achieved by HUS, our customers and the environment," Vainiotalo says.
SIMULATOR TURNS THEORY INTO REALITY

When patient simulator Olavi suffers from ventricular fibrillation, emergency services student saviours Lauri Rusama and Mikko Salmela are swiftly on hand to ask for background information from friends and to start resuscitation.

“Simulations allow students to combine things they have learnt into bigger entities of knowledge. They find they are finally able to apply the theory they have been taught,” says Jaana-Maija Koivisto, lecturer on the Degree Programme in Nursing.

“Simulation participants learn in an all-encompassing way, acting, watching and listening. They have to think for themselves and justify their actions,” says lecturer Tuija Uski-Tallqvist.

Research has shown that simulations can teach technical skills – such as airway management or infant resuscitation – even better than traditional teaching. Additionally, simulations improve the students’ teamwork skills, self-confidence and decision-making abilities.

Koivisto and Uski-Tallqvist believe that a huge number of different studies could be linked to simulations. Creating a properly insightful simulation is difficult, however. The method requires more work from the teacher than a lab class, for example, because the situation is more changeable.

Simulator practices carried out for emergency services students in one of the ten simulator rooms at Helsinki Metropolia University of Applied Sciences aim to make teaching experiential and, above all, to develop interaction and thinking skills. Health care simulations are available for teaching the entire care chain, from first aid to hospital nursing and laboratory analysis.

The participants in a simulation know roughly what to expect, but things do not always go according to script. Unlike real life, however, simulations allow participants to stop and consider different solutions during the events.

To some extent, simulations are a replacement for practical work: they are affordable and safe for patients, and they allow students to practise exactly what they need to. Some of the six to eight simulation participants complete tasks while the others observe. The observers are able to follow the big picture, while the action-takers get to work under pressure.

ANATOMY OF A BUILDING INVESTMENT

PROJECT PLANNING
• requesting competitive tenders from planners
• making planning agreements
• analysing technical data
• managing the planning team
• managing schedules and costs

IMPLEMENTATION PLANNING
• energy-efficiency design solutions
• utilising data modelling
• managing the planning team
• managing schedules and costs

PREPARATION AND CONSTRUCTION
• requesting tenders for contracts and procurements
• making agreements for construction contracts and procurements
• managing and supervising construction
• managing and supervising schedules and costs

APPROVAL AND COMMISSIONING
• inspecting building technology systems
• building approval inspection
• handover and usage training for users
• providing log data for maintenance
• warranty period supervision, monitoring and inspections
Outpatient care has brought about excellent treatment results and significant cost savings.

Sami Pirkola, Chief Physician, Chief of Psychiatric Clinic Group

The psychiatry unit at HUS is responsible for several nationwide functions, including ones as diverse as carrying out research on transsexuals and ensuring the psychological well-being of rehomed peacekeepers. We also possess Finland’s highest competence in treating eating disorders. We have redesigned some of our services and continuously seek new, often consultative ways of working that extend beyond traditional patient visits. In this way, we have been able to create cost-effective and functional treatment methods. Within the area of eating disorders, for example, we are about to start video-mediated work supervision and even remote video-mediated treatments in areas outside the HUS member municipalities. Conversely, we also work onsite more than before, looking for ways to collaborate between organisations rather than focusing strictly on specialist medical care. In mental health care we have shifted the emphasis to outpatient care. This has dramatically shortened waiting times for access to care, and has brought excellent treatment results as well as significant cost savings. The Mielenterveystalo online mental health care portal produced by HUS is one example of innovative actions.
COST MANAGEMENT

• 508,949 individual patients were cared for by HUS
• one third of the residents of HUS member municipalities used specialist medical care services
• the cost per capita was approx. EUR 899

HUS’s core competence lies in high-quality, expert care provided by professional and engaged staff. Apart from these central tasks, it also makes up the financial results of the hospital district. HUS is a non-profit joint municipal authority, over 60% of whose operating costs are personnel expenses. Due to their large volume, any changes in personnel expenses have an impact on the whole joint authority’s finances. During the year under review, the numbers of patients and personnel continued the growth of the last few years, but this was done cost-effectively. As the numbers have grown, so have the productivity of individuals and the hospital district as a whole.

A significant turning point was achieved in HUS’s finances during the year, when operating costs were kept under better control. This will have a positive impact on the next few years’ finances, too. Streamlining actions were carried out towards the latter part of the year, which resulted in significant cuts to binding net costs. The success of financial management is also reflected in the fact that the joint authority did not take out any more long-term loans during the year, even though the budget had provided for loans of up to EUR 60 million. The final result for the financial year was a surplus of EUR 10.6 million, which improved HUS’s balance sheet structure, reducing the accrued deficit from EUR 9.8 million to EUR 2.7 million.

One in three of the nearly 1.6 million inhabitants of the HUS member municipalities used specialist medical care services.

Chair Anne Berner became familiar with the cramped facilities of the Department of Paediatrics through her own child’s hospital visits. The decision to build a new children’s hospital was put off year after year, which inspired many of Finland’s corporate leaders to take action. Berner was asked to lead a project aiming for the construction of a modern paediatric unit at Meilahti in Helsinki.

“I wanted to show by my own example that individual helping hands are needed even in a welfare society.”

A new kind of system, completely unique in the Finnish context, was built for the fundraising of the children’s hospital, involving citizens, businesses, the joint municipal authority and the state.

“In fact, the fundraising model is unique. I don’t know of any other place where the state, a joint authority, citizens and businesses would work together to fund and build a public hospital on equal terms.”

Donations from private individuals and businesses are coordinated by the Association for the New Children’s Hospital 2017, which transfers the collected funds to the related foundation every quarter. The target for the public fundraising is EUR 30 million for use in building the hospital.

“One million Finns have already become involved, and a significant portion of them are private individuals. Usually these kinds of projects around the world only involve a handful of large-scale donors.”
MAJOR CONSTRUCTION PROJECTS

HYVINKÄÄ HOSPITAL
- Endoscopy unit alterations, 2010–2013 cost estimate EUR 2.1 million, actual cost 2013: EUR 1,179,000
- Renovation and extension of central kitchens, 2013–2015 cost estimate EUR 3.8 million, actual cost 2013: EUR 298,000

KELLOKOSKI HOSPITAL
- Renovation of Ohkola Hospital, phase 2, 2011–2014 cost estimate EUR 3.5 million, actual cost 2013: EUR 1,389,000
- Substation renovation, 2013–2014 cost estimate EUR 0.8 million, actual cost 2013: EUR 300,000

PORVOO HOSPITAL
- Renovation of patient wards, phase 1, 2011–2014 cost estimate EUR 4.3 million, actual cost 2013: EUR 953,000
MEILAHTI TOWER HOSPITAL:
Renovation of the patient tower, renovation of the ground floor of TP wing, the subterranean service yard, an electricity network connection upgrade, upgrade of the patient tower reserve power supply, upgrade of hybrid operating room, and renovation and extension of the pneumatic mail system.

JORVI HOSPITAL:
Additional building for emergency services, renovation of pathology facilities, renovation and extension of the pneumatic mail system and central kitchens.

HUCH
Jorvi Hospital
• Additional building for emergency services, 2010–2015
cost estimate EUR 56.9 million, actual cost 2013: EUR 7,486,000
• Renovation of pathology facilities, 2011–2013
cost estimate EUR 1.1 million, actual cost 2013: EUR 311,000
• Renovation of pneumatic mail system, 2012–2016
cost estimate EUR 1.4 million, actual cost 2013: EUR 0
• Renovation and extension of central kitchens, 2013–2016
cost estimate EUR 6.0 million, actual cost 2013: EUR 36,000

Kätilöopisto Maternity Hospital
• Alterations in the department of child psychiatry, 2011–2013
cost estimate EUR 800,000, actual cost 2013: EUR 618,000

Children's Hospital
cost estimate EUR 1.9 million, actual cost 2013: EUR 188,000

Meilahti Hospital
• Renovation of the Tower Hospital, 2009–2014
cost estimate EUR 92.5 million, actual cost 2013: EUR 39,699,000
• Renovation of the ground floor of TP wing, phase 1, 2012–2015
cost estimate EUR 4.7 million, actual cost 2013: EUR 355,000
• Subterranean service yard, 2007–2014
cost estimate EUR 30.4 million, actual cost 2013: EUR 7,931,000
• Improvement of the connection to the electricity network, 2012–2015
cost estimate EUR 5.7 million, actual cost 2013: EUR 403,000
• Patient tower reserve power supply, 2013–2014
cost estimate EUR 5.7 million, actual cost 2013: EUR 37,000
• Upgrade of hybrid operating room, 2012–2014
cost estimate EUR 1.7 million, actual cost 2013: EUR 1,646,000
• Renovation and extension of the pneumatic mail system, 2013–2014
cost estimate EUR 1.4 million, actual cost 2013: EUR 36,000

Women's Hospital
• Expansion and renovation of the auxiliary building, 2010–2015
cost estimate EUR 40 million, actual cost 2013: EUR 5,696,000

Eye and Ear Hospital
• Reserve power generator project, 2011–2013
cost estimate EUR 830,000, actual cost 2013: EUR 42,000

Department of Oncology
• Renovation and expansion of northern section of the first floor, 2009–2013
cost estimate EUR 10.7 million, actual cost 2013: EUR 4,110,000
• Linear accelerators 9–10 and premises, 2010–2014
cost estimate EUR 10.0 million, actual cost 2013: EUR 5,335,000

Itemised projects are ones commissioned by HUS Real Estate Ltd.
CONTROLLED GROWTH

CARE SERVICES
More Demand, More Services

Demand for HUS services continued to grow in 2013, and this was reflected in the production of services. The number of non-emergency (elective) referrals grew by 5.5%, and the number of emergency visits grew by 1.1%. Of the patients coming in for pre-planned treatment, 60.9% had referrals from health centres and 30.1% from private doctors. These proportions were nearly unchanged from the previous year. Of all the incoming patients, 43.4% were emergency cases.

The volume service production weighted according to the billing share grew by 2.5% compared to the previous year, exceeding the budget by 1.4%. In the service structure and in care practices, there was a continued shift of emphasis toward outpatient care. The total number of treatment periods (Nord-DRG) grew by 3.1% over the previous year, and the number of inpatient day products by 4.9%. The number of psychiatric treatment days fell by 10.5%.

---

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of Non-Emergency Referrals</th>
<th>No. of Emergency Visits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>275,696</td>
<td>211,668</td>
</tr>
<tr>
<td>2012</td>
<td>280,000</td>
<td>215,000</td>
</tr>
<tr>
<td>2013</td>
<td>285,000</td>
<td>219,000</td>
</tr>
</tbody>
</table>

NO. OF NON-EMERGENCY REFERRALS AND EMERGENCY VISITS (INCLUDING CHANGE PERCENTAGE FROM PREVIOUS YEAR)
PATIENTS TREATED
One in three used specialist medical care services

A total of 481,749 individual patients were cared for in specialist medical care, of whom 458,100 were residents of the HUS member municipalities.

Adjusted for the approx. 1.2% growth in the hospital area’s population, this means that around one in three (29%) residents of the area used specialist services produced or arranged by HUS.

The overall number of specialist medical care patients and the number of patients from the member municipalities both grew by 2.5% compared with the previous year. Including the joint Emergency Department’s health centre patients, the number of individuals cared for at HUS (508,949) grew by 2.2%. The use of services in relation to population varied significantly between municipalities.

A total of 481,749 customers received specialist medical care treatment from HUS in 2013. The total number of patients treated increased by 2.2%.

*The lower figures for Helsinki are partly due to the fact that the City of Helsinki itself produced some of the specialist medical care services needed by its population.
AVAILABILITY OF TREATMENT AND ACCESS TO TREATMENT

Rise in number of patients waiting for treatment

Despite the growth in service production, the number of patients covered by the care guarantee who were waiting for treatment increased compared with the previous year. The number of patients waiting for non-emergency general examinations and treatment grew by 7.5%. There were 2,187 patients who had waited for more than three months (growth of 126.9%). The number of patients waiting for admission to inpatient care fell by 2.1% from the previous year, and there were only 297 patients who had waited for more than six months (−27.4%).

MEMBER MUNICIPALITIES’ CONTRIBUTIONS (INCLUDING CHANGE PERCENTAGE FROM PREVIOUS YEAR)

<table>
<thead>
<tr>
<th>EUR million</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budget</td>
<td>1,200</td>
<td>1,350</td>
<td>1,500</td>
<td>1,650</td>
<td>1,800</td>
</tr>
<tr>
<td>FS</td>
<td>1,100</td>
<td>1,250</td>
<td>1,350</td>
<td>1,450</td>
<td>1,550</td>
</tr>
<tr>
<td>Deviation (%)</td>
<td>5.7%</td>
<td>5.7%</td>
<td>5.7%</td>
<td>5.7%</td>
<td>5.7%</td>
</tr>
<tr>
<td>FS/budget</td>
<td>0.92</td>
<td>0.92</td>
<td>0.92</td>
<td>0.92</td>
<td>0.92</td>
</tr>
</tbody>
</table>

KEY INDICATORS

<table>
<thead>
<tr>
<th></th>
<th>HUS 2013</th>
<th>HUS 2012</th>
<th>HUCH 2013</th>
<th>HUCH 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>NordDRG products</td>
<td>625,672</td>
<td>606,838</td>
<td>502,718</td>
<td>485,545</td>
</tr>
<tr>
<td>Inpatient day products</td>
<td>209,017</td>
<td>233,755</td>
<td>98,204</td>
<td>107,589</td>
</tr>
<tr>
<td>Visit products</td>
<td>1,657,421</td>
<td>1,580,702</td>
<td>1,234,118</td>
<td>1,169,888</td>
</tr>
<tr>
<td>Health centre visit products</td>
<td>75,637</td>
<td>75,831</td>
<td>39,105</td>
<td>41,788</td>
</tr>
<tr>
<td>Invoiced patient events</td>
<td>2,567,747</td>
<td>2,497,126</td>
<td>1,874,145</td>
<td>1,804,810</td>
</tr>
<tr>
<td>Operations</td>
<td>86,982</td>
<td>89,455</td>
<td>69,323</td>
<td>71,234</td>
</tr>
<tr>
<td>Births</td>
<td>18,061</td>
<td>18,099</td>
<td>14,358</td>
<td>14,605</td>
</tr>
<tr>
<td>Number of individuals using HUS services (own activities, specialist medical care)</td>
<td>462,368</td>
<td>452,998</td>
<td>388,858</td>
<td>377,836</td>
</tr>
<tr>
<td>Hospital beds on 31 Dec</td>
<td>2,831</td>
<td>2,935</td>
<td>1,960</td>
<td>1,988</td>
</tr>
<tr>
<td>Number of staff on 31 Dec</td>
<td>21,751</td>
<td>21,738</td>
<td>11,756</td>
<td>11,690</td>
</tr>
<tr>
<td>Operating income, EUR million</td>
<td>1,848.0</td>
<td>1,747.6</td>
<td>1,335.1</td>
<td>1,251.5</td>
</tr>
<tr>
<td>Operating costs, EUR million</td>
<td>1,721.1</td>
<td>1,668.9</td>
<td>1,307.1</td>
<td>1,263.1</td>
</tr>
<tr>
<td>Population on 31 Dec</td>
<td>1,581,450</td>
<td>1,562,796</td>
<td>1,163,428</td>
<td>1,147,072</td>
</tr>
<tr>
<td>Member municipalities’ average contribution, EUR per resident (deflated, estimated population for 31 Dec)</td>
<td>899.3</td>
<td>880.6</td>
<td>823.6</td>
<td>799.1</td>
</tr>
</tbody>
</table>
**FINANCES AT HUS**

*Moderate Growth in Costs*

During 2013 HUS was able to achieve better control over its operating expenditure. Due to streamlining measures taken towards the end of the year, binding net costs were EUR 1 million below budget. Over 60% of operating costs comprise staff costs, and their controlled growth thanks to the streamlining actions had an impact on the whole joint authority’s finances. The like-for-like growth of staff costs was 1.8% compared to the previous year, taking into account the change in calculation principles for holiday pay liability included in the 2012 financial statements. Similarly, the like-for-like growth in operating costs was 2.8%, taking into account the expansion of prehospital emergency care in early 2013.

The Joint Authority for the Hospital District of Helsinki and Uusimaa had a surplus of EUR 10.6 million for the financial year. Due to a revaluation of the patient insurance portfolio, the financial year included EUR 5.2 million in non-recurring expenses over the budget. An additional EUR 3.5 million was entered in the balance sheet capital due to changes in patient insurance provisions applying to previous financial years. The surplus for 2013 improved the balance sheet structure by reducing the accrued deficit from previous years from EUR 9.8 million to EUR 2.7 million.

The total contributions for specialist medical care from the member municipalities grew by EUR 68.5 million (5.1%), totalling EUR 1,421.7 million during the financial year, which was EUR 16.3 million (1.2%) over budget. Taking into account the 2.5% change in the member municipalities’ specialist medical care operations, this is a very moderate budget overrun.

Of the growth in contributions (including outsourced services), 2.4% was caused by a quantitative increase in the use of services. The rise in the average cost of services, which was due to an increase in service prices (approximately 2%) and to changes in the content of services, in turn caused a 2.7% rise in contribution billing.
### PROFIT AND LOSS ACCOUNT

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operating income total</strong></td>
<td>1,848,008</td>
<td>1,818,639</td>
<td>1.6%</td>
<td>1,744,580</td>
<td>5.9%</td>
</tr>
<tr>
<td><strong>Sales proceeds</strong></td>
<td>1,772,983</td>
<td>1,745,227</td>
<td>1.6%</td>
<td>1,668,651</td>
<td>6.3%</td>
</tr>
<tr>
<td><strong>Member municipalities’ contributions</strong></td>
<td>1,421,720</td>
<td>1,405,451</td>
<td>1.2%</td>
<td>1,353,206</td>
<td>5.1%</td>
</tr>
<tr>
<td><strong>Other income from services</strong></td>
<td>285,017</td>
<td>274,130</td>
<td>4.0%</td>
<td>246,998</td>
<td>15.4%</td>
</tr>
<tr>
<td><strong>Other sales income</strong></td>
<td>36,984</td>
<td>34,609</td>
<td>6.9%</td>
<td>32,833</td>
<td>12.6%</td>
</tr>
<tr>
<td><strong>State subsidy for education and research</strong></td>
<td>29,262</td>
<td>31,036</td>
<td>-5.7%</td>
<td>35,614</td>
<td>-17.8%</td>
</tr>
<tr>
<td><strong>Sales proceeds</strong></td>
<td>58,626</td>
<td>59,677</td>
<td>-1.8%</td>
<td>58,679</td>
<td>-0.1%</td>
</tr>
<tr>
<td><strong>Subsidies and grants</strong></td>
<td>8,206</td>
<td>5,807</td>
<td>41.3%</td>
<td>6,815</td>
<td>20.4%</td>
</tr>
<tr>
<td><strong>Other operating income</strong></td>
<td>8,193</td>
<td>7,928</td>
<td>3.3%</td>
<td>10,435</td>
<td>-21.5%</td>
</tr>
<tr>
<td><strong>Operating expenses total</strong></td>
<td>1,721,116</td>
<td>1,705,166</td>
<td>0.9%</td>
<td>1,668,902</td>
<td>3.1%</td>
</tr>
<tr>
<td><strong>Personnel expenses</strong></td>
<td>1,074,048</td>
<td>1,078,449</td>
<td>-0.4%</td>
<td>1,068,950</td>
<td>0.5%</td>
</tr>
<tr>
<td><strong>Purchased services</strong></td>
<td>267,868</td>
<td>254,313</td>
<td>5.3%</td>
<td>234,899</td>
<td>14.0%</td>
</tr>
<tr>
<td><strong>Materials, supplies and consumables</strong></td>
<td>326,060</td>
<td>319,546</td>
<td>2.0%</td>
<td>316,092</td>
<td>3.2%</td>
</tr>
<tr>
<td><strong>Subsidies and grants</strong></td>
<td>903</td>
<td>619</td>
<td>46.0%</td>
<td>785</td>
<td>15.1%</td>
</tr>
<tr>
<td><strong>Other operating expenses</strong></td>
<td>52,237</td>
<td>52,241</td>
<td>0.0%</td>
<td>48,175</td>
<td>8.4%</td>
</tr>
<tr>
<td><strong>Operating margin</strong></td>
<td>126,892</td>
<td>113,473</td>
<td>11.8%</td>
<td>75,678</td>
<td>67.7%</td>
</tr>
<tr>
<td><strong>Financial income and expenses</strong></td>
<td>13,047</td>
<td>14,771</td>
<td>-11.7%</td>
<td>13,588</td>
<td>-4.0%</td>
</tr>
<tr>
<td><strong>Result before depreciation and extraordinary items</strong></td>
<td>113,845</td>
<td>98,702</td>
<td>15.3%</td>
<td>62,090</td>
<td>83.4%</td>
</tr>
<tr>
<td><strong>Depreciation and reductions in value</strong></td>
<td>103,280</td>
<td>105,702</td>
<td>-2.3%</td>
<td>97,597</td>
<td>5.8%</td>
</tr>
<tr>
<td><strong>Annual result</strong></td>
<td>10,566</td>
<td>-7,000</td>
<td>-250.9%</td>
<td>-35,507</td>
<td>-129.8%</td>
</tr>
<tr>
<td><strong>Total operating expenses and depreciation</strong></td>
<td>1,824,396</td>
<td>1,810,869</td>
<td>0.7%</td>
<td>1,766,499</td>
<td>3.3%</td>
</tr>
<tr>
<td><strong>Binding net costs</strong></td>
<td>1,411,154</td>
<td>1,412,451</td>
<td>-0.1%</td>
<td>1,388,713</td>
<td>1.6%</td>
</tr>
</tbody>
</table>

### PERSONNEL

**Nearly 22,000 professionals**

The total person-years completed at HUS in 2013 was 17,468, which was 128 years (0.7%) higher than in 2012. This exceeded the budget by 188 person-years (1.1%). Compared to 2012, the cost of one person-year fell by 0.2% to EUR 61,127.

At the end of 2013, HUS had 21,751 employees (2012: 21,738).
INVESTMENTS

Better Conditions for Core Operations

HUS makes investments to enhance the efficiency of care, support processes and thereby improve competitiveness compared to other service providers. In 2013 investments totalled EUR 132 million. The provision for investments was EUR 148 million, but this was changed to EUR 129 million in December 2013 due to several large-scale changes. At HUS-wide level this provision was exceeded by approximately EUR 3 million.

Construction and renovation projects accounted for EUR 89 million of investments. Apart from the major construction projects (such as the Meilahti Tower Hospital and new buildings at Jorvi Hospital), investments were made in new medical equipment, information technology, ERP systems, basic patient care equipment, hospital facility alteration work, repairs related to water damage and other causes, and the development of support services.

Projects completed during the year included the endoscopy unit at Hyvinkää Hospital, the renovation and extension of the first floor of the Department of Oncology, and alterations related to child psychiatry at the Kätilöopisto Maternity Hospital. Planning and funding solutions for the Meilahti Children’s Hospital, the Traumatology Centre and the Cancer Centre progressed according to plan.

Within investments in examination and treatment equipment, the emphasis was on ensuring sufficient technological capacity related to oncology, cardiology and the imaging enterprises, while also applying the latest technologies. In 2013, HUS invested nearly EUR 28 million in examination and treatment equipment as well as medical appliances for its hospital areas and enterprises. The HUS IT Management unit invested approximately EUR 12 million in patient data and support systems, ERP and reporting systems, and basic IT services.

FUNDING AND CASH FLOW ADEQUACY

The HUS Joint Authority did not take out any more long-term loans during the period, although a provision of EUR 60 million had been made for that purpose in the budget. It paid out EUR 9.3 million in loan repayments. The cash flow adequacy was 19.6 days, and the Joint Authority’s equity ratio was 40.1% (according to the target).

Net financial expenses were EUR 13.0 million, which was EUR 1.7 million below budget. The average interest rate on the Joint Authority’s loan portfolio was 1.3% (2012: 1.9%) and the average interest rate on money market investments was 0.5% (2012: 0.9%). At the end of the year, the loan portfolio total stood at EUR 214.9 million, and liquid assets at EUR 101.3 million. On the balance sheet date, 32% of the interest risk in the Joint Authority’s loan portfolio was hedged. For the net loan portfolio, which takes into account the Joint Authority’s short-term liquidity investments, the hedging ratio was 60%.
### PROFIT AND LOSS ACCOUNT (EUR 1,000)

<table>
<thead>
<tr>
<th></th>
<th>HUS Group</th>
<th>HUS Joint Authority</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1/1-31/12/2013</td>
<td>1/1-31/12/2012</td>
<td>1/1-31/12/2013</td>
</tr>
<tr>
<td><strong>Operating income</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sales proceeds</td>
<td>1,780,416</td>
<td>1,675,597</td>
<td>1,772,983</td>
</tr>
<tr>
<td>Payments income</td>
<td>58,626</td>
<td>58,679</td>
<td>58,626</td>
</tr>
<tr>
<td>Subsidies and grants</td>
<td>8,215</td>
<td>6,822</td>
<td>8,206</td>
</tr>
<tr>
<td>Other operating income</td>
<td>14,222</td>
<td>15,392</td>
<td>8,193</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,861,479</td>
<td>1,756,491</td>
<td>1,848,008</td>
</tr>
<tr>
<td><strong>Operating costs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personnel expenses</td>
<td>-890,165</td>
<td>-881,975</td>
<td>-871,824</td>
</tr>
<tr>
<td>Social security expenses</td>
<td>-81,118</td>
<td>-55,756</td>
<td>-47,235</td>
</tr>
<tr>
<td>Pension expenses</td>
<td>-158,394</td>
<td>-153,522</td>
<td>-154,990</td>
</tr>
<tr>
<td>Purchased services</td>
<td>-240,084</td>
<td>-208,890</td>
<td>-267,868</td>
</tr>
<tr>
<td>Materials, supplies and consumables</td>
<td>-337,665</td>
<td>-325,098</td>
<td>-326,060</td>
</tr>
<tr>
<td>Subsidies</td>
<td>-903</td>
<td>-785</td>
<td>-903</td>
</tr>
<tr>
<td>Other operating expenses</td>
<td>-55,308</td>
<td>-50,134</td>
<td>-52,237</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>-1,730,637</td>
<td>-1,676,160</td>
<td>-1,721,116</td>
</tr>
<tr>
<td>Share of business enterprises' profit/loss</td>
<td>64</td>
<td>-95</td>
<td>0</td>
</tr>
<tr>
<td><strong>Operating margin</strong></td>
<td><strong>130,906</strong></td>
<td><strong>80,236</strong></td>
<td><strong>126,892</strong></td>
</tr>
<tr>
<td><strong>Financial income and expenses</strong></td>
<td></td>
<td></td>
<td><strong>75,678</strong></td>
</tr>
<tr>
<td>Interest income</td>
<td>593</td>
<td>1,095</td>
<td>1,365</td>
</tr>
<tr>
<td>Other financial income</td>
<td>143</td>
<td>136</td>
<td>140</td>
</tr>
<tr>
<td>Interest expenses</td>
<td>-3,035</td>
<td>-3,997</td>
<td>-2,792</td>
</tr>
<tr>
<td>Other financial expenses</td>
<td>-11,887</td>
<td>-11,876</td>
<td>-11,760</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>-14,186</td>
<td>-14,642</td>
<td>-13,047</td>
</tr>
<tr>
<td><strong>Result before depreciation and extraordinary items</strong></td>
<td><strong>116,720</strong></td>
<td><strong>65,594</strong></td>
<td><strong>113,845</strong></td>
</tr>
<tr>
<td>Depreciation and reductions in value</td>
<td></td>
<td></td>
<td><strong>62,090</strong></td>
</tr>
<tr>
<td>Depreciation according to plan</td>
<td>-106,098</td>
<td>-99,820</td>
<td>-103,280</td>
</tr>
<tr>
<td>Extraordinary items</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Annual result</strong></td>
<td><strong>10,621</strong></td>
<td><strong>-34,226</strong></td>
<td><strong>10,566</strong></td>
</tr>
<tr>
<td>Tax reserves</td>
<td>-938</td>
<td>-1,613</td>
<td>10,566</td>
</tr>
<tr>
<td>Minority share</td>
<td>211</td>
<td>1</td>
<td>-35,507</td>
</tr>
<tr>
<td><strong>Surplus/deficit for financial year</strong></td>
<td><strong>9,894</strong></td>
<td><strong>-35,838</strong></td>
<td><strong>10,566</strong></td>
</tr>
</tbody>
</table>

### FINANCIAL INDICATORS FOR THE PROFIT AND LOSS ACCOUNT

<table>
<thead>
<tr>
<th></th>
<th>HUS Group</th>
<th>HUS Joint Authority</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operating income/Operating expenses, %</strong></td>
<td>110,0</td>
<td>107,6</td>
<td></td>
</tr>
<tr>
<td><strong>Result before depreciation and extraordinary items/Depreciation, %</strong></td>
<td>107,4</td>
<td>110,2</td>
<td></td>
</tr>
</tbody>
</table>
### CASH FLOW STATEMENT (EUR 1,000)

<table>
<thead>
<tr>
<th></th>
<th>HUS Group</th>
<th>HUS Joint Authority</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2013</td>
<td>2012</td>
</tr>
<tr>
<td><strong>Operating cash flow</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Result before depreciation and extraordinary items</td>
<td>116,720</td>
<td>65,594</td>
</tr>
<tr>
<td>Extraordinary items</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Adjusting items for cash flow financing</td>
<td>7,361</td>
<td>178</td>
</tr>
<tr>
<td><strong>Investment cash flow</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Investment expenses</td>
<td>-143,860</td>
<td>-124,176</td>
</tr>
<tr>
<td>Investment expenses financing shares</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Capital gains for fixed asset items</td>
<td>518</td>
<td>4,814</td>
</tr>
<tr>
<td><strong>Operating and investment cash flow</strong></td>
<td>-19,261</td>
<td>-53,590</td>
</tr>
<tr>
<td><strong>Financing cash flow</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Changes in loan receivables</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Decreases in loan receivables</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Increase in long-term loans</td>
<td>370</td>
<td>40,230</td>
</tr>
<tr>
<td>Decrease in long-term loans</td>
<td>-10,501</td>
<td>-11,663</td>
</tr>
<tr>
<td>Change in short-term loans</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Change in capital and reserves</td>
<td>-3,524</td>
<td>0</td>
</tr>
<tr>
<td>Change in minority share</td>
<td>329</td>
<td>0</td>
</tr>
<tr>
<td>Change in inventories</td>
<td>-295</td>
<td>2,041</td>
</tr>
<tr>
<td>Change in receivables</td>
<td>4,130</td>
<td>-10,438</td>
</tr>
<tr>
<td>Change in interest-free debts</td>
<td>13,627</td>
<td>26,794</td>
</tr>
<tr>
<td><strong>Financing cash flow</strong></td>
<td>4,144</td>
<td>46,971</td>
</tr>
<tr>
<td><strong>Change in liquid assets</strong></td>
<td>-15,117</td>
<td>-6,619</td>
</tr>
<tr>
<td>Liquid assets at 31 Dec</td>
<td>101,908</td>
<td>117,025</td>
</tr>
<tr>
<td>Liquid assets at 1 Jan</td>
<td>117,025</td>
<td>123,645</td>
</tr>
<tr>
<td>Change in liquid assets</td>
<td>-15,117</td>
<td>-6,619</td>
</tr>
</tbody>
</table>

### FINANCIAL INDICATORS FOR THE CASH FLOW STATEMENT

#### HUS GROUP

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment cash flow financing, %</td>
<td>81.1</td>
<td>52.8</td>
<td>75.9</td>
<td>73.2</td>
<td>75.6</td>
</tr>
<tr>
<td>Five-year cash flow accrual from operations and investments, EUR million</td>
<td>-153.9</td>
<td>-140.7</td>
<td>-153.9</td>
<td>-140.7</td>
<td>-153.9</td>
</tr>
<tr>
<td>Debt coverage ratio</td>
<td>8.8</td>
<td>4.4</td>
<td>4.7</td>
<td>5.3</td>
<td>5.6</td>
</tr>
<tr>
<td>Cash disbursements, EUR million</td>
<td>1,899.9</td>
<td>1,827.9</td>
<td>1,727.9</td>
<td>1,644.7</td>
<td>1,602.7</td>
</tr>
<tr>
<td>Adequacy of cash flow (days)</td>
<td>19.6</td>
<td>23.4</td>
<td>26.1</td>
<td>25.6</td>
<td>27.7</td>
</tr>
</tbody>
</table>

#### HUS JOINT AUTHORITY

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment cash flow financing, %</td>
<td>86.2</td>
<td>53.6</td>
<td>81.9</td>
<td>76.0</td>
<td>75.4</td>
</tr>
<tr>
<td>Five-year cash flow accrual from operations and investments, EUR million</td>
<td>-126.5</td>
<td>-122.6</td>
<td>-126.5</td>
<td>-122.6</td>
<td>-126.5</td>
</tr>
<tr>
<td>Debt coverage ratio</td>
<td>9.7</td>
<td>4.6</td>
<td>5.0</td>
<td>5.4</td>
<td>6.4</td>
</tr>
<tr>
<td>Cash disbursements, EUR million</td>
<td>1,885.2</td>
<td>1,819.7</td>
<td>1,727.9</td>
<td>1,644.7</td>
<td>1,602.7</td>
</tr>
<tr>
<td>Adequacy of cash flow (days)</td>
<td>19.6</td>
<td>23.4</td>
<td>25.8</td>
<td>25.4</td>
<td>27.6</td>
</tr>
</tbody>
</table>

- Investment cash flow financing, % = 100 * Result before depreciation and extraordinary items/Investment self-acquisition expenses
- Five-year cash flow accrual from operations and investments, EUR million
- Debt coverage ratio = (Result before depreciation and extraordinary items + Interest expenses)/(Interest expenses + Loan amortisations)
- Cash disbursements, EUR million
- Adequacy of cash flow (days) = 365 days x Liquid assets Dec 31/Cash disbursements during the financial year
## BALANCE SHEET (EUR 1,000)

<table>
<thead>
<tr>
<th></th>
<th>HUS Group 2013</th>
<th>HUS Group 2012</th>
<th>HUS Joint Authority 2013</th>
<th>HUS Joint Authority 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intangible assets</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intangible rights</td>
<td>46</td>
<td>173</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other long-term expenses</td>
<td>44,312</td>
<td>46,407</td>
<td>44,037</td>
<td>45,907</td>
</tr>
<tr>
<td><strong>Intangible assets</strong></td>
<td>44,358</td>
<td>46,580</td>
<td>44,037</td>
<td>45,907</td>
</tr>
<tr>
<td><strong>Tangible assets</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land and water</td>
<td>13,833</td>
<td>12,279</td>
<td>12,173</td>
<td>10,745</td>
</tr>
<tr>
<td>Buildings</td>
<td>463,525</td>
<td>484,322</td>
<td>439,052</td>
<td>458,594</td>
</tr>
<tr>
<td>Immovable structures and equipment</td>
<td>11,324</td>
<td>12,550</td>
<td>11,324</td>
<td>12,550</td>
</tr>
<tr>
<td>Machinery and equipment</td>
<td>82,303</td>
<td>85,929</td>
<td>77,380</td>
<td>81,339</td>
</tr>
<tr>
<td>Other tangible assets</td>
<td>933</td>
<td>761</td>
<td>138</td>
<td>138</td>
</tr>
<tr>
<td>Advance payments and purchases in process</td>
<td>161,235</td>
<td>99,226</td>
<td>135,458</td>
<td>83,098</td>
</tr>
<tr>
<td><strong>Tangible assets</strong></td>
<td>733,153</td>
<td>695,068</td>
<td>675,524</td>
<td>646,465</td>
</tr>
<tr>
<td><strong>Investments</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business enterprise shares and similar rights of ownership</td>
<td>14,945</td>
<td>14,649</td>
<td>14,948</td>
<td>14,716</td>
</tr>
<tr>
<td>Other shares and similar rights of ownership and revaluation reserve</td>
<td>3,042</td>
<td>3,054</td>
<td>6,176</td>
<td>6,344</td>
</tr>
<tr>
<td>Other loan receivables</td>
<td>508</td>
<td>516</td>
<td>36,523</td>
<td>29,976</td>
</tr>
<tr>
<td>Other receivables</td>
<td>254</td>
<td>254</td>
<td>254</td>
<td>254</td>
</tr>
<tr>
<td><strong>Investments</strong></td>
<td>18,748</td>
<td>18,472</td>
<td>57,901</td>
<td>51,290</td>
</tr>
<tr>
<td><strong>NON-CURRENT ASSETS</strong></td>
<td>796,259</td>
<td>760,119</td>
<td>777,462</td>
<td>743,663</td>
</tr>
<tr>
<td><strong>CURRENT ASSETS</strong></td>
<td>4,468</td>
<td>4,057</td>
<td>4,468</td>
<td>4,057</td>
</tr>
<tr>
<td>Inventories</td>
<td>18,498</td>
<td>18,203</td>
<td>18,291</td>
<td>18,046</td>
</tr>
<tr>
<td>Receivables</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-current receivables</td>
<td>576</td>
<td>577</td>
<td>576</td>
<td>577</td>
</tr>
<tr>
<td>Current receivables</td>
<td>76,224</td>
<td>78,275</td>
<td>75,537</td>
<td>78,099</td>
</tr>
<tr>
<td><strong>Receivables</strong></td>
<td>76,800</td>
<td>78,852</td>
<td>76,113</td>
<td>78,677</td>
</tr>
<tr>
<td>Financial assets in securities</td>
<td>37,378</td>
<td>44,071</td>
<td>37,369</td>
<td>44,063</td>
</tr>
<tr>
<td>Cash in hand and at banks</td>
<td>64,531</td>
<td>75,031</td>
<td>63,947</td>
<td>74,247</td>
</tr>
<tr>
<td><strong>CURRENT ASSETS</strong></td>
<td>197,206</td>
<td>216,158</td>
<td>195,719</td>
<td>213,213</td>
</tr>
<tr>
<td><strong>TOTAL ASSETS</strong></td>
<td>997,933</td>
<td>980,335</td>
<td>977,649</td>
<td>960,933</td>
</tr>
</tbody>
</table>
### BALANCE SHEET (EUR 1,000)

<table>
<thead>
<tr>
<th>LIABILITIES</th>
<th>HUS Group 2013</th>
<th>HUS Group 2012</th>
<th>HUS Joint Authority 2013</th>
<th>HUS Joint Authority 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CAPITAL AND RESERVES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subscribed capital</td>
<td>391,253</td>
<td>391,253</td>
<td>391,253</td>
<td>391,253</td>
</tr>
<tr>
<td>Other reserves</td>
<td>1,055</td>
<td>1,031</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Surplus/deficit from previous financial years</td>
<td>-12,313</td>
<td>23,525</td>
<td>-13,260</td>
<td>22,248</td>
</tr>
<tr>
<td>Surplus/deficit for financial year</td>
<td>9,894</td>
<td>-35,838</td>
<td>10,566</td>
<td>-35,507</td>
</tr>
<tr>
<td><strong>CAPITAL AND RESERVES</strong></td>
<td>389,889</td>
<td>379,971</td>
<td>388,559</td>
<td>377,993</td>
</tr>
<tr>
<td><strong>MINORITY SHARES</strong></td>
<td>3,139</td>
<td>2,599</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>DEPRECIATION AND UNTAXED RESERVES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depreciation difference</td>
<td>1,473</td>
<td>1,419</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Untaxed reserves</td>
<td>4,489</td>
<td>3,641</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>DEPRECIATION AND UNTAXED RESERVES</strong></td>
<td>5,962</td>
<td>5,060</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>PROVISIONS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provisions for pensions</td>
<td>2,480</td>
<td>2,737</td>
<td>2,480</td>
<td>2,737</td>
</tr>
<tr>
<td>Other provisions</td>
<td>44,300</td>
<td>41,712</td>
<td>44,300</td>
<td>41,712</td>
</tr>
<tr>
<td><strong>PROVISIONS</strong></td>
<td>46,780</td>
<td>44,449</td>
<td>46,780</td>
<td>44,449</td>
</tr>
<tr>
<td><strong>CONTRACT-RESTRICTED CAPITAL</strong></td>
<td>4,468</td>
<td>4,057</td>
<td>4,468</td>
<td>4,057</td>
</tr>
<tr>
<td><strong>LIABILITIES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Long-term interest-bearing liabilities</td>
<td>217,084</td>
<td>228,325</td>
<td>204,648</td>
<td>214,886</td>
</tr>
<tr>
<td>Long-term interest-free liabilities</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Short-term interest-bearing liabilities</td>
<td>11,352</td>
<td>10,243</td>
<td>10,238</td>
<td>9,270</td>
</tr>
<tr>
<td>Short-term interest-free liabilities</td>
<td>319,256</td>
<td>305,629</td>
<td>322,956</td>
<td>310,277</td>
</tr>
<tr>
<td><strong>LIABILITIES</strong></td>
<td>547,695</td>
<td>544,199</td>
<td>537,842</td>
<td>534,434</td>
</tr>
<tr>
<td><strong>TOTAL LIABILITIES</strong></td>
<td>997,933</td>
<td>980,335</td>
<td>977,649</td>
<td>960,933</td>
</tr>
</tbody>
</table>
HUS is Finland’s largest provider of specialist medical care and the country’s second-largest employer. Our expertise is highly ranked internationally. We produce services for nearly 1.6 million residents and have nationwide responsibility in certain areas of specialist medical care. Every year, nearly half a million patients are treated at the 22 HUS hospitals. Employing nearly 22,000 health care professionals, HUS has a turnover in excess of EUR 1.8 billion.