

Annual Report 2004



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Na Homolce Hospital  
is one of the most modern  
European hospitals





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## INTRODUCTION

Just as in previous years, the health service spent 2004 searching for consensus on a blueprint for a Czech health care system that could be endorsed by all elements of society, and dealing with the instability of its economic base – the public health insurance system. The concept of Czech health care was one of the central themes in the political contest leading up to the Czech Senate and regional elections as well as being the subject of an analysis conducted by the World Bank. The deficit in the funds held by the public health insurance companies more than doubled when compared to 2003 levels and, despite a more than 70% rise in insurance payments, hospitals received a smaller proportion of this money than in previous years. Several specialist and teaching hospitals had to operate on a lower income, despite the fact that the scope of care they provided increased. Despite this situation, and as we have done in previous years, we concentrated on developing the hospital along the lines defined by our mission and on strengthening the three pillars on which Na Homolce stands.

Our goal is to create one of the best specialist hospitals in Europe, providing nationwide coverage of a comprehensive range of diagnostic and therapeutic methods in the fields of cardiovascular diseases and the clinical neurosciences. We have devoted the additional potential of the hospital, lying in the areas of research, international cooperation and commercial activities, to this end. The three main pillars on which Na Homolce Hospital stands are the high quality of care provided, its customer orientation and long-term economic stability.

In the area of improvements to the quality of care and patient safety, two years ago we set out to acquire prestigious certification and accreditation in order to precisely define the level of quality and gradually accustom ourselves to the organization and level of care that is provided as standard in the developed world. We already take the high quality of individual diagnostic and therapeutic operations for granted, the hospital has teams of qualified specialists and state-of-the-art technology. If the level of health care is to be further improved, we must monitor the entire treatment process and eliminate any possible areas where errors or inaccuracies may arise. In the fall of 2004, all our laboratories were awarded ISO 9001 certification and at the end of the year a final pre-audit was conducted by the international accreditation agency, JCIA. Last year the hospital had already fulfilled over 90 % of the prescribed international standards and we expect to receive this recognized accreditation in 2005.

Great efforts were made during 2004 to analyze and subsequently to satisfy the interests of our customers. Not only our patients are regarded as clients of the hospital, but also referring physicians and partner health care institutions. Using information and videoconferencing technologies, we have been able to build a network of health care centers that can share data and video documentation as well as supporting remote direct communications, allowing us to provide more precise consultancy of individual patients.

With all extensive development in the Czech health services put on hold and a clampdown placed on resources allocated to certain areas, it is difficult to maintain economic stability while at the same time expanding the range of care provided and introducing new diagnostic and therapeutic methods. Because of this we introduced austerity measures in 2004, which consisted of reducing the cost of supplies, limiting the cost of external services, stabilizing personnel charges (reducing staff numbers by 10%) and put pressure on “loss-making” departments. At the same time we decided to reduce our investment activities in 2004 in order to support our cash flow at a time when the health

insurance companies were extending their payment terms. This allowed us to forestall any deterioration in our balance of payments to our suppliers. We were able to successfully implement these measures. Despite an increased volume of activities, we were able to significantly reduce staff numbers across the board. Unit hospitalization costs were lowered, despite the fact that our inpatients are more demanding than in previous years. Hospital operating costs were reduced not only in relative terms from 17% to 15% of turnover, but also in absolute values, by 18 million crowns for the year. Na Homolce Hospital again reported a reasonable profit and maintained sufficient financial reserves to enable it to implement a number of substantial projects. In 2005 we aim to further develop our minimally invasive techniques, where we will be assisted by a unique project entailing the establishment of a national center of robotic surgery. Over the year we will also be able to purchase x-ray equipment, which will enable the X-ray department to receive all its images in high-quality digital format. This will represent the culmination of a project that has taken several years and which enables us to check the results of all imaging methods immediately, both within and outside the hospital, without the use of film.

The 2004 results provide a good basis for the further development of Na Homolce Hospital, the attainment of its investment objectives, as well as the possibility of significant increases in remuneration for all groups of employees.



Dr. Oldřich Šubrt, Ph.D., MBA  
Managing Director



## HOSPITAL MANAGEMENT AND STATUTORY BODIES

### ■ Hospital Management



Managing Director

[Oldřich Šubrt, M.D., Ph.D., MBA](#)

"We strive to provide the highest quality health care at all times, while maintaining the cost-effectiveness of the services we provide – this is what we understand to be our duty to our patients."



Deputy Director

for Treatment and Preventive Care

[Milan Ročeň, M.D.](#)

"Early prevention preserves our patients' health and the insurance companies' finances."



Deputy Director

for Finance and Business

[Pavel Brůna, M.Sc.](#)

"The task facing health care facilities is to make maximum use of their disposable resources to support the health and quality of life of their patients. To achieve this, the administrative process must place as little as possible, or preferably no burden on the physicians, whose vocation is to provide treatment."



Deputy Director

for Hospital Operations

[Jan Kapal, M.Sc.](#)

"We always aspire to have the best available technical equipment – which also makes our "Homolka" a first-class institution."



Deputy Director  
for Human Resources

[Pavel Chyňa, M.Sc.](#)

"The long-term goal guiding everything we do for the personnel is the creation of a team of stable, positively motivated employees, with the appropriate qualifications, experience and ability to perform."



Deputy Director  
for Internal Audit and Control

[Iva Rechová, M.Sc.](#)

"Proper, sensible and balanced management creates optimal conditions to support the work of our specialists."



Deputy Director of Marketing

[Slavěna Podloucká, M.Sc., MBA](#)

"We search out and implement the type of projects that can support the physicians and other hospital health care staff in their attempts to improve the quality of their professional work and to build relationships with our clients."



Head Nurse

[Libuše Budská](#)

"Our patients deserve professional and conscientious care, provided with a kind smile; this gives a purpose to our everyday work."

## REPORT BY THE SUPERVISORY BOARD



- Chairperson: [Milan Fafejta, M. Sc.](#)
- Vice Chairperson: Assoc. Prof. Eliška Jelínková, M.S., Ph.D.
- Members: Libuše Budská, Pavel Henyš M.D., Martin Kocourek M.Sc. Miroslava Ouředníková M.D., Jan Polák M.Sc. (Arch.), Petr Sláma, M.Sc.

### Report by the supervisory board on management activities in 2004

The supervisory board of Na Homolce Hospital is empowered by its Memorandum of Association, issued by the Czech Ministry of Health. All provisions of this Memorandum were fully respected by the Board while conducting its activities during 2004. Concrete decisions and recommendations were made with the aim of maintaining the Hospital's position as a first class health care facility over the long-term.

Dr Miroslava Ouředníková and Mr Petr Sláma joined the Na Homolce Hospital supervisory board as new members in 2004.


The Supervisory Board, composed of the members listed above, met four times during 2004.

The primary function of the supervisory board in 2004 was to monitor management activities while ensuring proper financial control and top quality health care, focusing on the following areas:

- cost, income and investment plans
- achieving these, assessing them and comparing them at an international level,
- the effectiveness of the hospital and related austerity measures,
- the quality and scope of health care,
- dealing with receivables past their due date,
- rules governing payments into the subsidized organizations' fund
- resolving contractual relations with the Czech General Health Insurance Company
- preparing the hospital for international JCI accreditation.

The Supervisory Board has not found any significant deficiencies in the areas it has controlled and has positively assessed all the indicators listed above.

The Supervisors Board wishes to thank the Managing Director, Dr. Oldřich Šubrt, Ph.D., MBA, members of the executive and all employees of Na Homolce Hospital for the work they performed during 2004.



Milan Fafejta, M.Sc.  
Chairperson of the Supervisory Board

# ORGANIZATIONAL STRUCTURE 2004

<b>Supervisory Board</b>		
<b>Managing Director</b>		
<b>Treatment and Preventive Care Sector</b>  Director for Treatment and Preventive Care Hospital Hygiene Officer	<b>Finance Division</b>  Director of Finance	<b>Hospital Operations Division</b>  Director of Hospital Operations
	<b>Departments</b>  Controlling Economic Accountancy Health care economics Contracts and revisions Analysis Operational records of assets	<b>Departments</b>  Operational and economic management Procurement and storage of non-medical supplies Catering Transportation Automated transportation system Energy and water management Maintenance Technical and inspection activities Technical management of hospital operations Medical technology Accommodation
<b>Hospital Wards</b>  <b>Neuroprogram</b> Neurology Neurosurgery Stereotactic and radiation neurosurgery  <b>Cardiovascular Program</b> Cardiac surgery Cardiac surgery Vascular surgery  <b>General Medical Care Program</b> Internal medicine General surgery Gynecology ENT/head and neck surgery Anesthesiology and Resuscitation	<b>Outpatient Clinics</b>  Neurology Neurosurgery Stereotactic and radiation neurosurgery Cardiology Cardiac surgery Vascular surgery Internal medicine Clinical oncology Surgery Gynecology ENT Nephrology Ophthalmology Dermatology Allergology and clinical immunology Pediatrics Dentistry Psychiatry	<b>Common Examination and Treatment Units</b>  Radiodiagnostics Nuclear medicine/PET center Clinical biochemistry, hematology, immunology Clinical microbiology and antibiotic center Pathology Central sterilization and hygiene Physiotherapy

**Human Resources Division**

Director of Human Resources  
 Personnel Department  
 Salaries Specialist  
 Employment and Selection Specialist  
 Training and Development Specialist

**Internal Audit and Control Division**

Director for Internal Audit and Control

**Departments**

Performance audit  
 Internal audit  
 Financial control

**Marketing Division**

Director of Marketing

**Departments**

PR – Press Officer  
 Production and publicity  
 Marketing of specialized programs

**Managing Director's Office**

**Hospital pharmacy**

**IT Department**

Hardware  
 Software  
 Analysis unit

**Independent Services**

Legal  
 Quality Management  
 Health and Safety at Work  
 Fire service and emergency planning

**Other Medical Units**

Hemodialysis Unit  
 Operating theaters  
 Industrial medicine  
 Department of Medical Physics

**Head Nurse's Office**

Central Records  
 Central Admissions  
 Pediatric Records  
 Patient information service

## BASIC CHARACTERISTICS

- A specialized health care center with nationwide coverage for neurosurgical and cardiovascular treatment

### Neurology/Neurosurgery Program

Comprehensive care for patients suffering from diseases of, or injuries to, the central and peripheral nervous system, as well as diseases of, or injuries to, the spine. The three independent program centers provide a full range of care, from diagnostic services and therapy by conservative methods, through complex neurosurgical operations including radiosurgery and stereotactic surgery, to the latest methods of interventional neuroradiology. Part of the treatment process also covers related physiotherapy and long-term follow-up of patients.

**Department of Neurology**

**Department of Neurosurgery**

**Department of Stereotactic and Radiation Neurosurgery**

### Cardiovascular Program

Comprehensive care for patients suffering from diseases of the cardiovascular system, the heart and blood vessels. The three independent program units focus on complex diagnostics and treatment by conservative methods, as well as surgical treatment of cardiac and vascular diseases including interventional radiology. Medical care includes special physiotherapy for patients with diseases of the circulatory system and follow-up of selected groups of patients..

**Department of Cardiology**

**Department of Vascular Surgery**

**Department of Cardiac Surgery**

### Program of General Medical Care

A comprehensive range of general health care treatment, supported by a large outpatient department and related wards. The four independent hospital wards within this program offer patients a complete range of diagnostic and therapeutic procedures for diseases related to internal medicine and general surgery, particularly minimally invasive surgery. These are closely linked to the extensive outpatient department with clinics covering individual specializations.

**Department of Internal Medicine**

**Department of Surgery**

**Department of Gynecology and Minimally Invasive Therapy**

**Department of ENT/Head and Neck Surgery**

### Basic data

	to 12.31.2003	to 12.31.2004	index
Staff	1,670	1,611	<b>96%</b>
Beds	357	357	<b>100%</b>
Number of patient admissions	16,815	19,406	<b>115%</b>
Number of interventions	13,491	14,331	<b>106%</b>
Number of outpatient examinations	805,946	1,029,991	<b>128%</b>

### Number of admissions

	to 12.31.2003	to 12.31.2004	index
Neurology-Neurosurgery program	4,383	5,038	<b>115%</b>
Cardiovascular program	7,389	8,297	<b>112%</b>
General Medical Care program	6,114	6,869	<b>112%</b>

### Number of beds to 12.31.2004

	IC beds	total	%
Neurology-Neurosurgery program	26	106	<b>30%</b>
Cardiovascular program	67	147	<b>41%</b>
General Medical Care program	39	104	<b>29%</b>
Total	132	357	<b>100%</b>

### Number of admissions 2000-2004

2000	2001	2002	2003	2004
14,026	14,968	15,984	16,815	<b>19,406</b>

■ Number of interventions (including one-day surgery) 2000-2004

2000	2001	2002	2003	2004
10,914	11,357	12,838	13,491	<b>14,331</b>

■ Average length of stay 2000-2004

2000	2001	2002	2003	2004
6.57	6.37	6.58	6.25	<b>5.89</b>

■ Number of days of treatment 2000-2004

2000	2001	2002	2003	2004
92,103	95,273	96,611	105,104	<b>114,207</b>

■ Breakdown of main diagnoses in 2004

Neurological-neurosurgical program	26%
Cardiovascular program	43%
General Medical Care program	31%
Muscular and skeletal system	11%
Central nervous system	6%
Neoplasms	13%
Cardiovascular system	46%
Digestive system	7%
Urinogenital system	8%
Other	10%



Summary of the most frequent diagnoses of in-patients attending the Cardiovascular program in 2004

Diagnosis:

Chronic ischemic heart disease	Occlusion and narrowing of the carotid arteries
Atherosclerosis of the arteries serving the limbs	Other forms of chronic ischemic heart disease
Generalized and undefined atherosclerosis	Aneurysm of the abdominal aorta
Atrial fibrillation and flutter	Supraventricular tachycardia
Cardiac atherosclerosis	

Summary of the most frequent diagnoses of in-patients attending the Neuroprogram in 2004

Diagnosis:

Carpal tunnel syndrome	Benign meningeal neoplasms
Secondary malignant neoplasms of the brain and brain meninges	Arteriovenous malformations of the cerebral vessels
Spinal stenosis	Malignant neoplasm of the frontal cerebral lobe
Diseases of the lumbar and other intervertebral disks with radiculopathy	Neuralgia of the trigeminal nerve
Diseases of the lumbar and other intervertebral disks with myelopathy	Spondylolisthesis

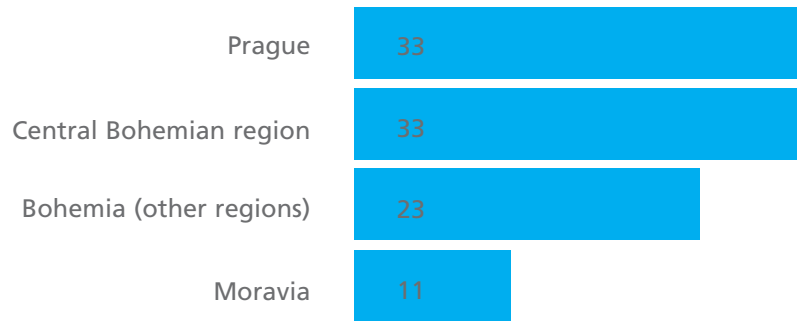
Mortality 2000-2004

	2000	2001	2002	2003	2004
NHH	1.9%	2.2%	2.1%	1.6%	<b>1.6%</b>
Neurology	2.2%	2.3%	2.2%	3.7%	<b>1.9%</b>
Neurosurgery	1.7%	2.1%	1.5%	1.5%	<b>1.7%</b>
Gamma knife	0.0%	0.1%	0.1%	0.3%	<b>0.0%</b>
Cardiology	1.4%	1.7%	1.4%	1.2%	<b>1.0%</b>
Cardiac surgery			3.2%*	2.5%	<b>3.0%</b>
Vascular surgery	2.5%	3.4%	2.3%	2.2%	<b>2.1%</b>
Internal medicine	4.2%	4.3%	3.2%	3.0%	<b>4.0%</b>
General surgery	1.2%	1.1%	0.5%	0.2%	<b>0.5%</b>
Gynecology	0.0%	0.0%	0.0%	0.0%	<b>0.0%</b>
ENT	0.4%	0.1%	0.6%	0.2%	<b>0.0%</b>

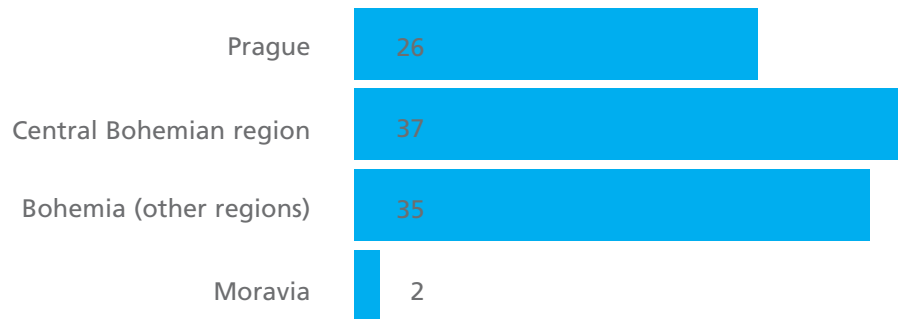
\* for the period between May 2002 and March 2003

■ Origin of admitted patients in 2004 by %

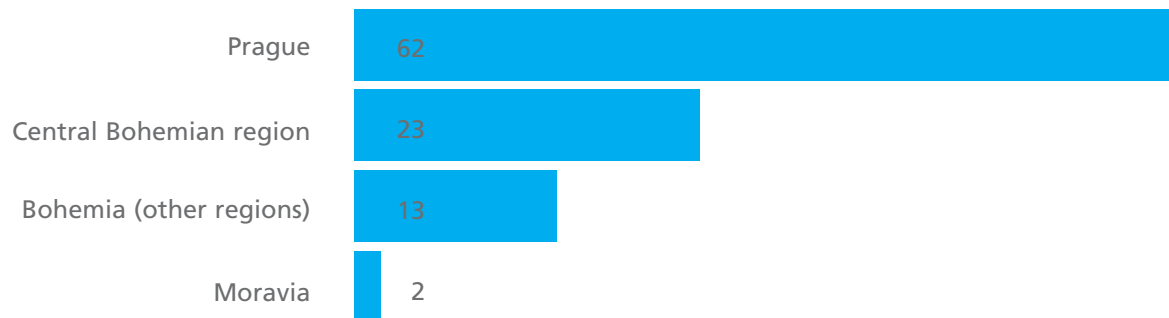
Neurology-Neurosurgery program



Cardiovascular program

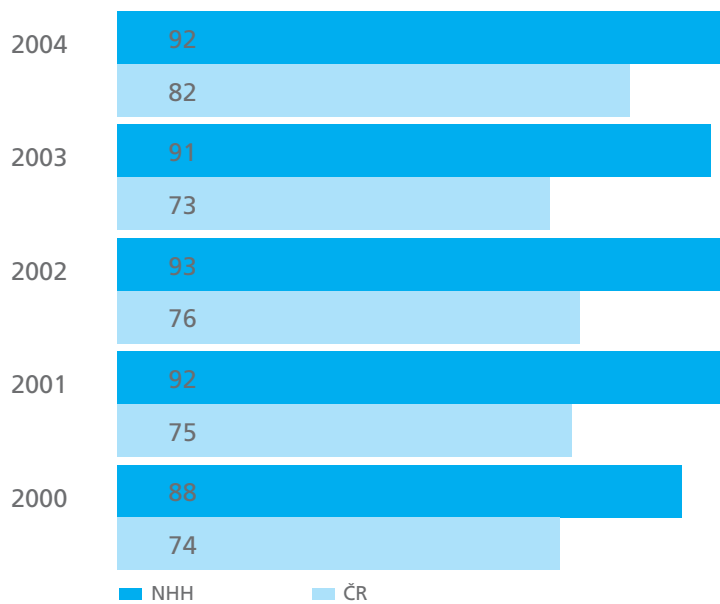


General Medical Care program

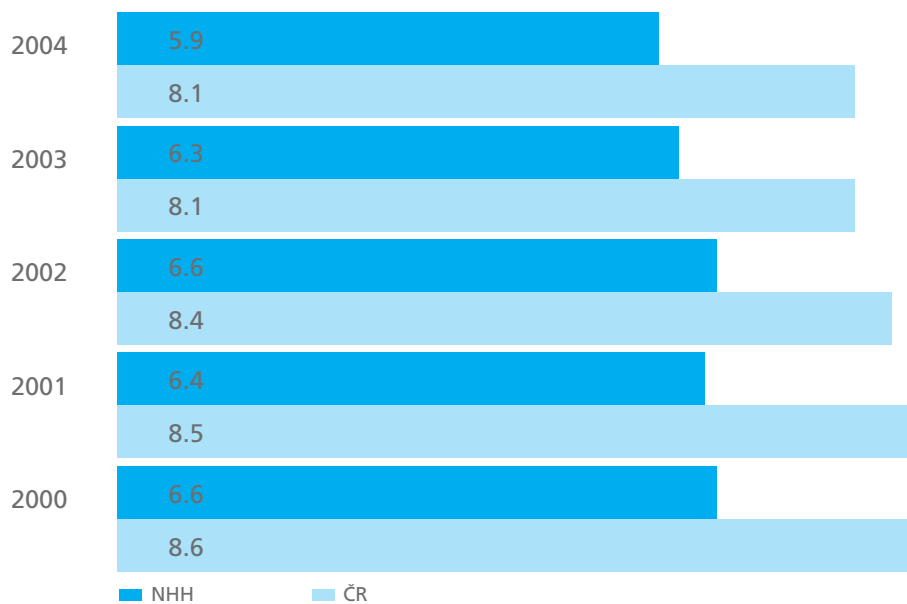


Na Homolce Hospital benchmarking in the Czech Republic

Bed occupancy 2000-2004 (as a %)



Average number of days of treatment 2000-2004



## 2004 NEWS

### JANUARY

New Navision business SW solution installed to handle all the hospital's economic programs

### FEBRUARY

Formation of a Marketing Division divided into a PR and Press Officer Department, a Specialized Program Marketing Department and a Production and Publicity Department

### MARCH

Creation of a Center of Excellence in navigational neurosurgery for the Czech Republic and the eastern European region

### APRIL

An Oncological Outpatients Clinic was opened to treat and follow up adult patients

### MAY

Purchase of a Tandem Heart to provide temporary support to the heart muscle after major heart failure. Enabled through a gift by a patient.

### JUNE

Creation of a Center of Excellence for dynamic stabilization of the spine (Bryan, Prestige) for the Czech Republic and the eastern European region.

The Na Homolce Hospital Medical Board was established as the highest medical authority to decide on strategic questions affecting the hospital's development.

Access to health care information and medical records was consolidated through the intranet.

### JULY

Creation of a Center of Excellence for non-pharmological treatment of advanced heart failure by implanted cardioverter-defibrillators for the Czech Republic and the eastern European region.

### SEPTEMBER

Creation of an interdisciplinary hospital center for treatment of the aorta.

### OCTOBER

Creation of an interdisciplinary hospital center of clinical immunology and allergology.

### NOVEMBER

Routine introduction of a system of identity bracelets with barcodes for inpatients.

Barcode identification incorporated into the medical records.

### DECEMBER

Gala performance of Gaetano Donizetti's Lucia di Lammermoor at the State Opera for partners and employees of Na Homolce Hospital.

### **We showed our solidarity at Christmas.**

Two of the Na Homolce Hospital medical staff, the surgeon Dr. Stanislav Černožský and clinical psychologist Dr. Martin Kořán, Ph.D., were members of the first team sent by the Czech Republic to assist those affected by the tsunami disaster in Sri Lanka

## PERSONNEL AND SOCIAL POLICIES

In accordance with the strategy we have adopted, 2004 personnel activities also focused on:

improving the quality of care provided, introducing a customer-oriented approach, increasing the effectiveness of work performed.

**Following on from NHH's on-going preparation for JCI accreditation**, we complied with JCI requirements by integrating and fully implementing human resource procedures. Key processes primarily involved:

- systemization, i.e. defining the number, professional composition and the required structure of staff qualifications needed to support the scope and quality of work that needs to be performed,
- creating job descriptions for all hospital employees, to define the main tasks to be performed as well as specific clinical tasks, the rights and responsibilities applying to each particular function, qualification requirements and other elements needed to secure high quality job performance,
- a coordinated approach to employment and the selection of new employees, including their training and orientation in order to create an environment that ensures that tasks are carried out in accordance with NHH's needs in terms of their scope and quality,
- continuing employee education and training on an as-needed basis with respect to achieving the goals established by the hospital and making effective use of available resources,
- making periodic assessments of all NHH employees, in accordance with the requirements of the accreditation.

A differentiated approach and an increase in the decision-making powers of supervisory personnel remained important elements of this system.

**In order to increase the effectiveness of work performed**, 2004 focused on reducing costs in all areas. Aside from reductions in supply and oper-

ating costs, this measure also involved reducing salary costs. For the first time in the hospital's history and after a comprehensive audit, we proceeded with one-off staff cuts. This reduction in staff numbers involved a whole range of measures, from eliminating part-time employees, through ending fixed-term contracts to the actual termination of employees who were superfluous to the current and future running of the hospital. During this process we respected all provisions of the Labor Code, including debating each stage with the unions. Special regard was also paid to the social situation of the employees.

Due to the measures described above, average converted employee numbers fell by 3.6 % in 2004, which enabled us to raise average salaries by 5.7 % while maintaining an overall rise in salary costs of only 1.9 %.

**A significant stabilizing factor** for employees remains the social program. Money from the Cultural and Social Needs Fund, provided by the employer, is devoted to fulfilling the social, educational, health care and cultural needs of our employees. An employee satisfaction poll found that a large majority of respondents were extremely positive about the NHH employee benefit scheme. Increased attention was paid to the area of preventive health care for employees. More than 12 million crowns were paid out from the CSNF for employee needs in 2004, in accordance with the approved principles governing how the fund can be drawn on.

## ■ Staff numbers

In 2004 Na Homolce Hospital employed 1,610 staff (average numbers) as set out below.

Staff categories	Number	%	change from 2003
Physicians	240	14.9	-3
Pharmacists	7	0.4	0
Other graduates and professionals (non-medical)	22	1.4	0
Nurses	805	50.0	-36
Other nursing staff	12	0.7	-3
Assistant nursing staff	141	8.8	+8
Technical and administrative staff	233	14.5	-6
Operational and general service staff	150	9.3	-20
Total staff numbers	1,610	100.0	-60

## ■ Salaries

Na Homolce spent a total of 545,118,160 CZK on salaries in 2004. The average salary rose by 5.7% from 2003 levels and reached 28,206 CZK.

### Average salaries for individual staff categories

Physicians	62,693 CZK
Pharmacists	46,102 CZK
Other graduates and professionals (non medical)	43,688 CZK
Nurses	23,128 CZK
Other nursing staff	16,614 CZK
Assistant nursing staff	15,217 CZK
Technical and administrative staff	23,394 CZK
Operational and general service staff	17,663 CZK

## AUDITOR'S CERTIFICATE

The statutory body of the accounting unit is responsible for ensuring that the accounts are maintained, and are comprehensive, transparent and accurate. The duty of the auditor is to prepare a report and to comment on the Statement of Account and the Annual Report, in compliance with Act no. 254/2000 Coll. on auditors and the Chamber of Auditors of the Czech Republic.

On the basis of the accounting procedures we have used, we have not found any significant facts to indicate that the accounts certified by the accounting unit do not provide a true and faithful picture of the object of accounting and the financial status of the unit.

**We have verified that the information concerning the audited organization for the period under review, as set out in the Annual Report, conforms to the certified statement of account to 12.31.2004. It is our opinion that this information, in all important respects, is in agreement with the statement of account from which it was taken.**

Drawn up in Čelákovice, April 18th, 2004.



ATLAS AUDIT s.r.o.  
Tomáš Bartoš  
license number 300







## Quality

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## CLINICAL PROGRAMS - SUMMARY OF ACTIVITIES

### Neurological-neurosurgical program (NEUROPROGRAM)

#### ■ Department of Neurology

Head of Department:  
Miroslav Kalina, M.D., Ph.D.

The department focuses on diagnostics and the non-surgical treatment of diseases of the brain, spinal cord, peripheral nerves and muscular apparatus, using special electrophysiological and ultrasonic diagnostic methods. It also provides complex outpatient and ward care in these specialized areas. The department includes [an Epilepsy Center](#), providing specialized outpatient and ward care for patients suffering from epilepsy. It comprises two epilepsy counseling units and an epilepsy monitoring unit (EMU) which, in addition to its other activities, conducts long-term monitoring and selection of patients for epileptosurgical treatment and provides consultancy for neurological centers throughout the Czech Republic. In 2004, 208 patients were admitted to the EMU, of whom 17 were monitored by surgical implantation of electrodes and 39 were referred for epileptosurgical treatment. 2004 also saw the launch of a project for the treatment of epilepsy involving the targeted removal of epileptogenous tissue by stereotactic surgery and 5 patients were treated by this method, which is unique in the Czech Republic. The treatment of epileptic patients over the year was marked by strong interdisciplinary cooperation between the hospital's neuro-scientific departments and, alongside the Department of Neurology and following established tradition, contributions were made by the Department of Neurosurgery, the Department of Stereotactic and Radiation Neurosurgery, the Department of Radiodiagnosics and the Department of Nuclear

Medicine/PET Centrum. Na Homolce is one of three epileptologic and epileptosurgical centers in the Czech Republic, with the highest number of operated patients.

[The specialized Intensive Care Unit](#) for the treatment of acute and extremely serious neurological cases also serves as a postgraduate training center for neurological intensive care. During the course of 2004, twelve intra-arterial thrombolyses and seven intravenous thrombolyses were performed, 12 patients with polyradiculoneuritis or suffering from severe myasthenia received comprehensive treatment, including a series of plasmaphereses and full intravenous immunoglobulin treatment.

Outpatient care covers, in addition to the outpatient clinic for the treatment of general neurological disorders, [the neurovascular clinic](#) and [the spinal counseling unit](#), which also refers patients for surgical interventions to the spinal canal, as well as [the evoked potentials laboratory](#), [the electromyographic laboratory](#) and [the transcranial Doppler ultrasound unit](#).

The Department of Neurology contributed to 2 grant projects in 2004.

## Basic data - Department of Neurology

Number of beds	33
Standard	27
Intensive care	6
Number of physicians	13
Number of nurses	54
Number of outpatient examinations	16,079
Number of patient admissions	1,376
Number of days of treatment	9,539
Bed occupancy rate (%)	81.5
Average length of stay (in days)	5.4

## Department of Neurology

Head of Department: Vladimír Dbalý, M.D.

In 2004 the Department focused primarily on further developing its complex diagnostic, surgical and follow-up care of patients suffering from diseases of the central and peripheral nervous system. As usual, patient therapy fell into four key areas, namely [the neurooncological, neurovascular, epileptosurgical and spinal programs](#). Aside from these priority programs, the department continued to develop a range of minor neurosurgical specializations, such as neurotraumatology, neurosurgery of the peripheral nerves and functional neurosurgery to ensure that the care provided is comprehensive, high quality and safe for the patients. A total of 2,203 operations were performed during 2004, representing a 10.4% increase on 2003. The department is a national and international center for a number of diagnoses, as testified by the rise in the numbers of foreigners treated. The mortality rate for operated patients was 0.9% in 2004.

[In the Neurooncological program](#), apart from the standard, and for the most part combined treatment of patients, a number of experimental projects were further developed. Alongside

the BNCT program (the treatment of malignant primary cerebral tumors using Boron Nuclear Capture Therapy) dynamic progress was made on the TTF project (the treatment of malignant primary cerebral tumors by magnetic field). The Na Homolce Department of Neurosurgery was the first unit in the world to use this method to treat 7 patients and the department has been invited to collaborate internationally in this area and to present its results in the USA, where this method (on the basis of studies carried out by the Na Homolce Department of Neurosurgery, among others) has received FDA approval.

The use of perioperative navigation and functional navigation during cerebral surgery was intensively developed during 2004, which enabled a Center of Excellence in navigated neurosurgery to be opened within the department, serving the Czech Republic and countries in the eastern European region. This Center has already hosted several training sessions for foreign neurosurgeons during 2004.

Under [the Neurovascular Program](#) during 2004, the Department of Neurosurgery continued to centralize patients with diseases of the intracra-

nial vessels at Na Homolce Hospital, offering the option of combined treatment of these diseases by open surgery followed by endovascular intervention. Patients with these potentially life-threatening diseases are provided with 24-hour care from a team of experienced specialists. Pre-operative embolization for certain types of cerebral tumors continued to be performed last year. There was a rise in the number of decompressive (relieving) craniectomies performed in association with the Department of Neurology on some types of ischemic cerebrovascular events, as well as in bypass operations between the extra- and intracranial blood supplies. Peri-operative Doppler scanning of intracranial arteries was introduced as a new method in 2004.

Na Homolce's Department of Neurosurgery [Epileptosurgical Program](#) is the leader in its field for the Czech Republic. Working together with the Department of Neurology, the Leksell Gamma Knife unit, the Department of Radiodiagnostics and the PET Centrum, the total number of referred and operated patients stabilized at between thirty and forty annually and the total number of patients with drug resistant epilepsy operated on here has already reached 170. Resections were performed on patients using standard navigation techniques and stim-

ulation treatment was also applied (the application of vagal nerve stimulators).

Treatment of chronic pain was further developed in partnership with the Anesthesiology and Resuscitation department (neurostimulation of the spinal cord.)

Within the framework of [the Spinal Program](#), Na Homolce's Department of Neurosurgery has been ranked for several years now as one of the most successful and active neurosurgical centers in the Czech Republic. Surgery is performed on the whole length of the spine using all access paths to treat degenerative diseases as well as injured and oncological patients. So called "minimally invasive" spondylosurgery, using navigational or transcutaneous techniques is by far the preferred method. 2004 witnessed intensive development in dynamic stabilization procedures not only for the cervical, but also for the lumbar vertebral column. Last year Na Homolce's Department of Neurosurgery became a Center of Excellence in neurosurgery for the dynamic stabilization of the cervical spine (Bryan, Prestige) for the Czech Republic and countries in the eastern European region.

One grant project was completed by the Department of Neurosurgery in 2004.

Basic data - Department of Neurosurgery

Number of beds	65
standard	45
intensive care	8
intermediary	12
Number of physicians	17
Number of nurses	84
Number of outpatient examinations	10,679
Number of patient admissions	2,777
Number of days of treatment	20,623
Bed occupancy rate (%)	93.2
Average length of stay (in days)	8.1

## Number of surgical interventions

2000	2001	2002	2003	2004
1,744	1,837	1,930	1,974	2,203

## Breakdown of surgical interventions in 2004

Cerebral tumors	207
Cerebral vascular diseases	77
Spinal diseases including tumors	1,165
Injuries	52
Epileptosurgery	32
Miscellaneous	670
Total	2,203

## Department of Stereotactic and Radiation Neurosurgery

Head of Department: Roman Liščák, M.D., Ph.D.

The clinical activity of the department is focused on the non-invasive radiosurgical treatment of certain types of cerebral tumors, cerebral vascular malformations and functional diseases of the brain using the Leksell gamma knife as well as stereotactic and functional neurosurgery. The outpatient clinic, in addition to providing consultation and follow-up care for the department's neurosurgical patients, also provided chemotherapy for patients with oncological diseases and specialized ophthalmologic care.

In 2004 the number of patients treated in the department increased by 7% as compared to 2003. The total number of surgical interventions performed in the department exceeded 1,000 (including Leksell gamma knife irradiation and other surgical interventions) and neurostimulators were implanted in seventeen patients. In 2004 the department collaborated with the 1st

Medical Faculty of Charles University to consolidate a team of specialists for invasive treatment of extrapyramidal disorders. Patients with temporal epilepsy were also treated for the first time by the targeted elimination of epileptogenic tissue using stereotactic surgery. This unique method was used to treat five patients for the first time ever in the Czech Republic.

A small number of patients from Slovakia continue to be treated in the department and these made up 2.5% of all those treated in 2004.

As has become traditional, among the patients irradiated by the Leksell gamma knife in 2004 were patients from the Ukraine, who were offered this treatment free under the terms of a tripartite agreement between Na Homolce Hospital, the Charta 77 Foundation and the Ukraine (ten children) and those who received the same conditions as Czech patients (ten adults).

In 2004 we continued to work in association with the Střešovice ÚVN Eye Clinic on a grant-funded project to study the effects of treating the early stages of glaucoma by Leksell gamma knife and the influence of Leksell gamma knife irradiation on the progress of age-influenced macular degeneration. We are the only unit to use this method in the world. Both projects are supported by the Elektra company. The number of patients with ophthalmologic referrals for irradiation by the Leksell gamma knife made up 10.6% of all referrals last year.

The Department of Stereotactic and Radiation Neurosurgery is the only center of its kind in the Czech Republic and the Eastern European region. The quality of its work and the range of its experience have ranked it among the foremost centers of its type worldwide.

Two grant projects were completed by the Department of Stereotactic and Radiation Neurosurgery in 2004.

#### Basic data - Department of Stereotactic and Radiation Neurosurgery

Number of beds	
short stay	8
Number of physicians	6
Number of other college graduates	1
Number of nurses	10
Number of patient admissions	1,447
Number of operations carried out using the Leksell gamma knife	856
Number of other stereotactic operations	210
Number of days of treatment	1,486
Average length of stay (in days)	1.03
Number of outpatient examinations	2,245
Number of written outpatient consultations	890
Number of patients visiting the oncological clinic	565
Number of patients visiting the eye clinic	395
Number of neurophysiological examinations	222

#### Number of patients treated using the Leksell gamma knife from 2000 to 2004

2000	2001	2002	2003	2004
566	735	781	803	<b>856</b>

■ Radiosurgical treatment by Leksell gamma knife  
in 2003 broken down by individual diagnosis

	2000	2001	2002	2003	2004
Malignant tumors of the brain	34%	30%	31%	33%	32%
Benign tumors of the brain	41%	34%	37%	39%	36%
Functional diseases of the brain	14%	16%	14%	10%	12%
Vascular malformations of the brain	11%	9%	9%	9%	10%
Eye referrals		11%	9%	9%	11%

■ NEUROPROGRAM 2000–2004

Development in the numbers of Neuroprogram patient admissions

	2000	2001	2002	2003	2004
Gamma knife	669	815	788	768	1,447
Neurology	866	1,042	970	1,145	1,376
Neurosurgery	2,112	2,226	2,402	2,470	2,777
Total	3,647	4,083	4,160	4,383	5,600

Development in the numbers of Neuroprogram outpatient examinations

	2000	2001	2002	2003	2004
Gamma knife	2,212	2,583	2,544	2,553	2,245
Neurology	13,333	1,042	14,115	15,755	16,079
Neurosurgery	7,318	7,913	9,020	9,559	10,679
Total	22,863	24,150	25,679	27,867	29,003



## Cardiovascular program

### Department of Cardiology

Head of Department:  
Associate Professor Petr Niederle, M.D., Ph.D.

The clinical activities of the department cover the complete spectrum of preventive, diagnostic and therapeutic methods for patients with diseases of the heart and blood vessels, or with a high risk of incurring these diseases. Just as in previous years, the department provided full coverage of several individual specialized areas in 2004. **Acute cardiology** along with its coronary unit is devoted to the examination and intensive care of patients suffering from acute and severe conditions and the monitoring of their essential vital functions. Last year 905 patients were admitted. In 2004 the unit was equipped with a TANDEM HEART machine for temporary cardiac support of patients suffering from critical failure of the circulatory system. This was a gift from a patient and is the only one of its kind in the Czech Republic. Invasive cardiology deals with diagnostics of diseases of the coronary arteries, including therapeutic interventions, which in 2004 again registered

a steep rise in invasive cardiologic examinations, particularly coronarographies with an annual total of 2,817 as well as the implantation of stents where the total was 1,201. **Invasive cardiology** also covers cardiac electrophysiology, particularly the diagnostics and treatment of cardiac rhythm disorders. Na Homolce Hospital has been the largest European center in this field over the long term and last year a total of 3,679 diagnostic and therapeutic interventions were performed, including the implantation of pacemakers and defibrillators, radiofrequency ablations and other types of intervention. In 2004 a new treatment method was introduced for patients referred for atrial fibrillation, using the PLAATO system to occlude the left atrial appendage. During the same period, a program was introduced to prevent sudden cardiac arrest in patients after myocardial infarct and with severe disfunctions of the left ventricle, by implanting cardioverter-defibrillators in accordance with the MADIT II criteria.

**Non-invasive cardiology** continued to offer

#### Basic data - Department of Cardiology

Number of beds	52
standard	30
intensive care	18
intermediate	4
Day care clinic	4
Number of physicians	24
Number of nurses	96
Number of outpatient examinations	28,136
Number of patient admissions	4,592
Number of days of treatment	17,606
Bed occupancy rate (%)	93.9
Average length of stay (in days)	3.83

patients a wide range of diagnostics of cardiovascular diseases during this period, including ultrasound, electrocardiography stress tests and echocardiograms, as well as long-term monitoring of cardiac rhythm and blood pressure, among others. A new method of tissue Doppler echocardiography was introduced for use on patients suffering chronic heart failure and undergoing resynchronization therapy. **Clinical cardiology** traditionally covers diagnostics and treatment of cardiovascular diseases both in hospital wards as well as specialized outpatient clinics, and shared in providing the final treatment and physiotherapy for acute conditions and in the treatment of chronic diseases of the circulatory system.

The hospital-wide heart failure program entailed the inclusion in the Department of Cardiology of **a specialized heart failure unit**, which carried out continuous monitoring of patients with heart failure and cared for patients at a less advanced stage of the disease. In 2004, a total of 130 patients were monitored.

In 2004, the Department of Cardiology continued in its work on the BARI 2D multicentric study, in which Na Homolce is the only European center to participate.

## Specialized interventions in 2004

### Angiography Center

Coronarography (SKG)	2,817
Ventriculography (LVG)	1,158
Right-side angiocardiology	1
Pulmonary artery angiography	1
Catheterization R	12
Catheterization R-L	284
Coronary angioplasty (PTCA)	987
Direct angioplasty (AIM)	341
Stents	
number of patients	891
number of stents	1,201
Bulbus aortography	196
Alcohol septal ablation	3
Occlusion of ventricular septal defect (Amplatz)	8
Intracoronary ultrasound	7
Other angiographies	399
Complications	
fatal	4 (AIM) (0.2%)

## Outpatient clinics

General cardiology	9,270
Pacemakers	7,373
Angiology	3,580
Heart failure clinic	2,543

## Electrophysiology Center in 2004

Primary implantation and exchange of pacemakers	887
Electrophysiology	1,724
Implantation and reimplantation of ICDs	212
Biventricular stimulation	157
RF ablations in total	516
Extraction of electrodes	87
Right ventricle biopsy	31
Implantation of IV port for the administration of drugs	3
Implantable arrhythmia monitor (REVEAL)	11
Spinal neurostimulation	2
Total	3,679
Complications	
Pneumothorax	17 (0.46%)
Hemothorax	1 (0.03%)
A-V fistula	3 (0.08%)
Perforations, electrode penetrations	2 (0.06%)
fatal	2 (0.06%)

## Non-invasive cardiology

Echocardiography	4,858
esophagus examination	510
dobutamine load	2
Total	5,370
ECG stress test	640
Holter ECG	1,628
Blood pressure monitoring	1,248
TT test	4
Spiroergometry	12
Six minute walking test	225

## ■ Department of Vascular Surgery

Head of Department: Pavel Šebesta, M.D., Ph.D.

The department deals with surgical and angiographic invasive diagnostics and treatment of diseases of the vascular system, primarily the narrowing or complete occlusion of the vessels as a result of atherosclerosis. It is the only center of its type, with nationwide coverage of complex cardiovascular problems, ranging from radical replacement of the thoraco-abdominal aorta to palliative interventions such as radiofrequency sympathectomy. 2004 saw a further increase in the numbers of surgical and endovascular interventions. The range of surgical interventions, just as in previous years, covers [operations on the arteries supplying the brain](#), which have long constituted the largest group of operations, [operations on the thoracic and abdominal aorta including surgical and endovascular treatment of aneurysms](#), where the number of interventions, including the implantation of stents for abdominal aneurysms, registered a slight increase during the period under review, as well as [the reconstruction of the pelvic arteries and the arteries serving the lower limbs](#). The number of referred reoperations performed for the most serious

complications (endangered limbs, advanced infections of vascular prostheses) also rose in 2004.

In association with the Department of Cardiac Surgery and the Department of Radiodiagnostics, we initiated an interdisciplinary program of care for patients with complex disorders of the aortic arch, primarily focusing on endovascular treatment of these diseases.

Na Homolce Hospital's Department of Vascular Surgery serves as a training center in vascular surgery for postgraduate studies at the Institute of Health Care Postgraduate Education. It also functions as a specialized consultancy for acute and complicated angiosurgical cases.

### ■ Basic data - Department of Vascular Surgery

Number of beds	61
standard	36
intensive care	11
intermediary	14
Number of physicians	21
Number of nurses	90
Number of outpatient examinations	11,763
Number of patient admissions	2,743
Average length of stay (in days)	7.21
Number of days of treatment	19,764
Bed occupancy rate (as a %)	93.5
Average length of stay (in days)	7.21

### Total number of reconstructions performed from 2000-2004

2000	2001	2002	2003	2004
1,345	1,349	1,552	1,573	1,625

### Breakdown of vascular and general surgical interventions in 2004

Other vascular operations	986
Operations on branches of the aortic arch	271
Pelvic reconstructions	71
Aortofemoral reconstructions	122
Abdominal aneurysms	107
Stent implants	68

## Department of Cardiac Surgery

Head of Department: Štěpán Černý, M.D., Ph.D.

The Department of Cardiac Surgery deals with complex surgical treatment of heart disease and the major endothoracic vessels. Its activities also cover outpatient monitoring of selected groups of patients before and after surgical intervention. 2004 was the second full year of existence for Na Homolce's Cardiac Surgery department which now has fully-equipped premises and a complete team of staff.

The scope of cardiosurgical operations last year reflected the range of these interventions throughout the Czech Republic, though their breakdown reveals a slight tendency for the department to specialize in valvular surgery, which makes up 31% of the unit's operations. During the course of 2004 a total of 840 cardiosurgical interventions were performed, including implanting epicardial stimulation systems. The program of surgical maintenance of the mitral valves and reconstruction of the left ventricle was further developed, while the ratio of mitral valvuloplasty reached 72.5% of the total

number of mitral interventions. The unit worked in association with the Department of Cardiology for the successful development of the program of perioperative cryoablations in patients with chronic atrial fibrillation during the period under review, when 99 patients were treated using this method. Na Homolce currently performs the highest number of these interventions in the Czech Republic.

Working together with the Department of Cardiac Surgery and the Department of Radiodiagnosics, an interdisciplinary program of care for patients with complex disorders of the aortic arch, primarily focusing on the endovascular treatment of these diseases, was initiated.

### Basic data - Department of Cardiac Surgery

Number of beds	34
standard	14
intensive care	7
semi-intensive	13
Number of physicians	16
Number of nurses	75
Number of outpatient examinations	1,714
Number of patient admissions	840
Number of days of treatment	10,436
Bed occupancy (as a %)	85.5
Average length of stay (in days)	10.85

### Breakdown of surgical interventions in 2004

Isolated aortocoronary reconstructions	490
Combined aortocoronary reconstructions (EACI, MAZE etc)	27
Coronary valve replacement/reconstruction	255
Isolated operations on the ascending aorta and the aortic arch	34
Epicardial stimulator electrode implants	23
Miscellaneous (myxoma, pericardectomy, PM extraction)	11
Total	840
MAZE operations (combined with ACB and valvular surgery)	99
Acute and emergency operations	122
Planned operations	718


**CARDIOVASCULAR PROGRAM 2000-2004**
**Development in the numbers of Cardiovascular Program patient admissions**

	2000	2001	2002	2003	2004
Cardiac Surgery	312	322	325	669	<b>840</b>
Vascular Surgery	2,380	2,400	2,884	2,736	<b>2,743</b>
Cardiology	2,982	3,058	3,972	3,984	<b>4,592</b>
<b>Total</b>	<b>5,674</b>	<b>5,780</b>	<b>7,181</b>	<b>7,389</b>	<b>8,175</b>

**Development in the numbers of Cardiovascular Program outpatient examinations**

	2000	2001	2002	2003	2004
Cardiac Surgery	439	452	487	1,440	<b>1,714</b>
Vascular Surgery	9,722	9,793	10,463	11,516	<b>11,763</b>
Cardiology	23,241	24,988	28,561	29,059	<b>28,136</b>
<b>Total</b>	<b>33,402</b>	<b>35,233</b>	<b>39,511</b>	<b>42,015</b>	<b>41,613</b>

## General Medical Care Program

### ■ Department of Internal Medicine

Head of Department:  
Associate Professor Jan Kábrt, M.D., Ph.D.

The department's activities consist of ensuring preventive, diagnostic and conservative treatment for diseases of an internal nature, with important sub-specializations in the areas of [artificial nutrition and metabolic care](#), [gastroenterology](#), [diabetology](#), [endocrinology and pneumology](#). The intensive care unit is dedicated to patients suffering from acute internal diseases. The care provided during 2004 included the conservative treatment of diseases of the kidneys and urinary system, which the Department of Internal Medicine provided in collaboration with the Department of Nephrology, as well as care of patients suffering from diseases of the sanguifacient/immune system provided in association with the Clinical Immunology unit. Care of oncological patients was also initiated during the period under review, in association with the newly constituted Oncological outpatient clinic. National specializations over the past year have

primarily focused on the care of patients with functional disorders of the small intestine, who require long-term artificial nutrition, as well as the use of endosonography for the diagnosis and treatment of diseases of the digestive tract and the recent use of autofluorescent bronchoscopy for patients with pulmonary problems. The number of endosonographic examinations rose significantly compared to 2004 and showed the importance of the gastroenterological unit. The complete reconstruction of the intensive care unit led to a significant increase in the number of patients treated here for acute internal diseases in 2004.

### ■ Basic data - Department of Internal Medicine

Number of beds	29
standard	21
intensive care	8
Number of physicians	24
Number of nurses	49
Number of outpatient examinations	40,802
internal medicine outpatient clinic	25,887
gasterenterological examinations	14,915
Number of patient admissions	1,228
Number of days of treatment	9,714
Bed occupancy rate (%)	93.6
Average length of stay (in days)	7.91



### Specialized interventions in 2004

Gastroscopy	2,415
Coloscopy	2,227
Spirometry	2,160
Flexible and autofluorescent bronchoscopy	436
Endoscopic sonography	433
ERCP	388
Endoscopic papillosphincterotomy	201
PEG	9

### Department of Oncology

Head of Department:  
Eva Helmichová, M.D., Ph.D.

The Department of Clinical Oncology was opened in Na Homolce Hospital on April 1st, 2004 and, over the year it has gradually developed its activities, which focus on [the treatment and follow up of adult patients with solid malignant tumors](#). It was created with a stable team of specialists in the onco-surgical, oncointernal and oncogynecological fields, who participate in the diagnostics, treatment and subsequent follow up of patients through the hospital, including providing treatment for pain. Patients are provided with systemic outpatient treatment – chemotherapy and hormonal therapy, followed by support treatments that include follow up post-operative rehabilitation. Depending on the type of disease, Na Homolce Hospital has also provided care to oncological

patients together with the General Teaching Hospital and the Institute of Hematology and Blood Transfusions, the Vinohrady and Pilsen Teaching Hospitals. In 2004 it worked in association with Pilsen Teaching Hospital's Radiotherapy and Oncology Clinic to develop a research project to follow markers of biological activity in colorectal carcinoma and on the Pilsen Pittsburgh EOF project – Immunological alterations in the lungs of smokers and patients with lung malignancies.

### Basic data - Department of Oncology

Number of physicians	2
Number of nurses	3
Number of outpatient examinations	5,157
Number of cycles of chemotherapy applied	885
complications entailing emergency admission	6

## ■ Department of Surgery

Head of Department: Pavel Beňo, M.D.

The department provides a wide spectrum of services covering diagnostics and surgical treatment in [the areas of general surgery, orthopedics and urology](#), while the outpatient clinic also includes counseling centers for mammology, phlebology, abdominal surgery and bariatric surgery, an orthopedic outpatients clinic, a urological clinic and a clinic for minor surgical interventions.

In the field of general surgery, as in previous years, abdominal and thoracic surgery was performed using minimally invasive methods in all areas of laparoscopic surgery and one-day surgery was prioritized. Care continued to be provided in oncological surgery of the digestive system and mammology. **In 2004, the surgical team performed** the standard range of interventions, primarily using intraoperative radiofrequency ablation methods for the treatment of liver metastases in colorectal carcinoma as well as laparoscopic IPOM and TAPP reconstructions of inguinal and frontal hernia, particularly in one-day surgery. Surgery of inguinal hernia using

PHS mesh was introduced and 2004 saw intensive progress being made in the field of bariatric surgery (for morbid obesity) using gastric bypass techniques and an adjustable gastric band. Operations for anal prolapse and hemorrhoids using the Long surgical techniques have been performed routinely in the department for several years now and during the period under review it was the only unit in the Czech Republic to be included in the General Health Insurance Company pilot study. The surgery department was also the only center in the Czech Republic last year to perform Collis reconstruction for brachyoesophagus in an operation for esophageal reflux with single cavity access. Laparoscopic surgery was extended to cover the most demanding interventions on the colon, rectum and gastrointestinal tract using the harmonic scalpel.

**Orthopedic operations** last year including the total replacement of joints, including shoulder and ankle joints, as well as the reimplantation of joints. [The orthopedic navigational system](#) was routinely used for surgery on large joints during 2004. The orthopedic unit last year con-

### ■ Basic data - Department of Surgery

Number of beds	31
standard	26
intensive care	5
Number of physicians	17
Number of nurses	42
Number of outpatient examinations	42,705
Number of patient admissions	2,408
Number of surgical interventions	2,576
minor outpatient interventions	1,056
Number of days of treatment	10,851
Bed occupancy rate (%)	98.48
Average length of stay (in days)	4.51

tinued to implant total bilateral endoprostheses of the ankle joints and made further developments in modern methods of hallux surgery (Swanson endoprostheses in the hallux rigidus and Stoffel osteotomy in the hallux vagus). Utilization of a bone bank allowed progress to be made in a wide range of orthopedic and elective traumatological operations and other minimally invasive surgical techniques.

**Urological operations** included, as in previous

years, open and endoscopic surgery on the urinary system, including urological oncosurgery, using minimally invasive laparoscopic, cystoscopic and uretherorenoscopic surgical techniques. The range of operations carried out also included ultrasound guidance of punctures to the affected retroperitonea, as well as complex diagnostics and treatment of erectile disfunctions and endoscopic reconstruction for incontinence. Routine interventions included endoscopic urethrotomy and ureterorenoscopy.

■ Number of outpatient examinations 2004

Surgery	25,601
Orthopedics	10,358
Urology	6,746
Total	42,705

■ Number of surgical interventions in 2004

Neoplasms	298
Diseases of the digestive system	968
Orthopedic disorders	346
Urological disorders	218
Benign tumors	89
Other conditions	489

■ Number of surgical interventions in 2004

Surgery	1,689
Urology	314
Orthopedics	573
Minor outpatient interventions	1,056

## Department of Gynecology and Minimally Invasive Surgery

Head of Department:  
Pavel Bartoš, M.D., M. MED.

The services provided by the department include the diagnosis and surgical treatment of gynecological diseases.

The complete spectrum of pelvic and gynecological surgery was concentrated into five clinical programs in 2004.

**The Oncological and Oncolaparoscopic program** includes classical, laparoscopic, laparoscopically assisted and laparovaginal surgery for malignant tumors of the cervix, ovaries, endometrium and vulva. In 2004, in addition to the standard oncoinstruments, the operating theaters were equipped with state-of-the-art supporting and rotating laparoscopic equipment enabling modern operating procedures, as well as a cutaneous ultra-sound aspiration dissector (CUSA), which resulted in significant improvements in the speed and precision of oncolaparoscopic interventions.

A total of 131 radical operations were performed on gynecological carcinomas.

The Department of Gynecology and Minimally Invasive Therapy is the headquarters of the Sec-

retariat and Presidency of the Czech Society for Gynecologic Endoscopy and Pelvic Surgery (CSGE) and an accredited center for gynecological oncosurgery (CSGE).

**Urogynecological and reconstructive surgery** covers surgical treatment of incontinence and complex surgical procedures for cases of pelvic organ prolapse and incontinence, where emphasis is placed on finding a laparoscopic solution to the problems which arise. 287 patients were operated on for problems related to complex urogenital prolapse using reticulate implants. A procedure referred to as laparoscopic global repair was standardized in 2003 and subsequently adopted by other gynecological centers in the Republic. The department is an accredited center in this area for the treatment of urethropexy incontinence by universal access (an ESGE multi-centric study).

**Complex diagnostics and endometriosis surgery** offers patients from throughout the Czech Republic a comprehensive treatment program comprising laparoscopic radical surgery, a predictive histological diagnosis of growth factors and subsequent hormonal treatment with a final check up to verify its success. The depart-

### Basic data - Department of Gynecology and Minimally Invasive Surgery

Number of beds	26
standard	20
intensive care	6
Number of physicians	10
Number of nurses	22
Number of outpatient examinations	23,650
Total number of surgical interventions	2,341
of which minor operations	911
Number of days of treatment	8,062
Bed occupancy rate (%)	92.6
Average length of stay (in days)	3.85

ment is a CSGE national reference center for ultraradical surgical excision of endometriosis of the rectovaginal septa involving resection of the vaginal walls. More than 300 interventions were performed in 2004.

**General gynecological surgery** deals with surgery for infertility, myomatosis of the uterus, adnexal tumors and cysts, as well as with problems involving post-operative adhesion, chronic pelvic pain, inflammation and congenital development disorders of the uterus, in particular aplasia of the uterus and vagina.

**The hysteroscopic program** includes diagnostic and surgical endoscopy of the cavity of the uterus for cases of dysfunctional hemorrhage, polyposis, congenital defects of the uterus, adhesion, cancer of the uterus and submucous myomas.

The complete reconstruction of the surgical wing has expanded the capacity of the unit and

its state-of-the-art surgical equipment. The department is now one of the best equipped centers for laparoscopic radical and advanced operations in the Czech Republic.

Overall, the number of surgical interventions rose to 2,341 operations in 2004, of which **75 %**, including oncological interventions, **were performed laparoscopically or hysteroscopically**, i.e. by what are referred to as minimally invasive methods.

In 2004 the department organized the 6th International Congress of Gynecological Laparoscopy, which was attended by almost 300 delegates and a number of foreign lecturers. The department also organized two national workshops on urogynecological and oncosurgical programs featuring direct broadcasts from the operating theaters.

■ Number of surgical interventions in 2004

Major surgical interventions	1,430
for malignant tumors	131
Minor surgical interventions	911

■ Department of ENT / Head and Neck Surgery

Head of Department: Jan Paska, M.D.

The department specializes in diagnostics and conservative and surgical treatment of diseases of the ears, nose and throat. Surgical interventions in 2004 included what is referred to as **one-day surgery**, as well as a complete range of **head and neck surgery**, concentrating on comprehensive oncological ENT surgery, cophosurgical interventions, surgery to the nose and paranasal cavities including endoscopic interventions, complex surgery on the thyroid gland, adenotomy, as well as reconstructive surgery in

the area of the head and neck, microsurgery on the larynx, operations to the soft tissues of the head and neck and surgery after injuries to the facial bones.

The department's outpatient clinic again provided a comprehensive range of services during 2004, including specialized counseling in **oncology, otoneurology, cophosurgery, otoprosthesis, a rhinology clinic, a clinic for thyroid disorders, a counseling service for sleep and snoring disorders, a clinic for corrective nose surgery and a pain treatment clinic**. The department also has **a specialized pediatric practice**.

## Basic data - Department of ENT / Head and Neck Surgery

Number of beds	10
standard	8
intensive care	2
Number of physicians	10
Number of nurses	16
Number of outpatient examinations	35,202
Number of patient admissions	1,133
Number of surgical interventions	1,862
Number of days of treatment	3,548
Bed occupancy rate (%)	94.4
Average length of stay (in days)	2.4

## Number of surgical interventions in 2004

Adenotomies	333
Operations under local anesthetic	480
Operations under general anesthetic	933
Operations using tracheotomy	116

## Department of Nephrology

Head of Department: Lukáš Svoboda, M.D.

The Department of Nephrology provides non-stop nephrological care and an entire range of hemopurification treatments for patients suffering from chronic and acute kidney failure. Care also covers the preparation of patients with irreversible kidney failure for organ transplantation. The department also includes a nephrological outpatients clinic for the diagnostics and treatment of kidney disease as well as a specialized counseling unit for ischaemic kidney disorders and an outpatients clinic for peritoneal dialysis. The Hemodialysis Center is open 24 hours a day and has ten dialysis units, including one cubicle for patients suffering from hepatitis B and one cubicle for patients with hepatitis C. Comprehensive continuous dialysis treatment covers hemodialysis, hemofiltration, hemodiafiltration, plasmaphoresis,

hemoperfusion peritoneal dialysis and continuous elimination methods. In 2004 the Hemodialysis Center again achieved lower mortality levels than the average in the Czech Republic and Europe, despite the fact that the average age of the patients attending was 70.4 years.

The reputation the Na Homolce Hospital Department of Nephrology enjoys at a Czech and European level is strengthened by its long-term efforts in creating an integrated rehabilitation program for dialysis and transplant patients. The sports club for these patients, part of the Czech Sporting Association, was founded in association with Na Homolce Hospital and not only devotes itself to educational and informational activities, but primarily to the organization of sporting activities for dialysis and transplant patients, including their representation at international sporting events.

### Basic data - Department of Nephrology

Number of full-time physicians	3
Number of nurses	16
Number of dialysis units	10
of which 1 cubicle for patients with type B hepatitis	
of which 1 cubicle for patients with type C hepatitis	
Number of dialysis monitors	14
Number of monitors for continuous hemopurification	3
Number of outpatient examinations	10,799

### Interventions performed in 2004

Hemodialysis	8,358
of which, in the acute program	500
Hemofiltration	762
Plasmaphoresis	4
Hemodiafiltration	10
Hemoperfusion	1
Number of patients in treatment (peritoneal dialysis)	62 (1)
Number of patients referred for transplant	2
Number of patients undergoing peritoneal dialysis treatment	1

## Department of Anesthesiology and Resuscitation (ARO)

Head of Department: Milan Ročeň, M.D.

The Department of Anesthesiology and Resuscitation provides comprehensive care for patients during surgery as well as in the periods prior to and following their operations, handling the administration of general anesthesia and the more demanding types of local anesthesia. In 2004 the number of anesthetics administered increased and the chemical lumbar sympathectomy method was adopted as routine practice. The Resuscitation unit provides comprehensive diagnostics and treatment of patients whose general state of health is affected by disorders to their basic vital functions, so severe as to be

life-threatening and who require the highest level of medical care. The overwhelming majority of cases involve patients with injuries to the brain and cranium. The facilities provided by the center include a hyperbaric chamber offering the possibility of artificial pulmonary ventilation and other specialized methods of Resuscitation treatment. The pain management clinic deals with problems experienced by patients in chronic pain.

### Basic data - Department of Anesthesiology and Resuscitation

Number of beds	8
Number of physicians	22
Number of nurses	53
Number of outpatient examinations (treatment of chronic pain)	1,549
Number of patient admissions	102
Number of days of treatment	2,578
Bed occupancy rate (%)	93.34
Average length of stay (in days)	25.27
Breakdown of Units	
1 Resuscitation unit	
7 central operating theaters	
3 operating theaters for general surgery	
2 operating theaters for gynecology	
6 other operating theaters and clinics (ENT, stereotaxis, x-ray, dentistry and eye clinic)	

### Breakdown of selected anesthesiology interventions in 2004

Numbers anesthetized for interventions lasting longer than 2 hours	3,729
Number of local anesthetics	1,546
Number of patients over the age of 70 anesthetized	1,920
Number of children anesthetized	365
Number of anesthetics administered for acute interventions	1,585
Number of other anesthetics administered	1,084
Total	10,229



■ General Medical Care Program 2000-2004

Development in the numbers of General Medical Care Program patient admissions

	2000	2001	2002	2003	2004
ENT	707	876	788	949	<b>1,133</b>
Internal Medicine	1,060	1,026	1,006	1,023	<b>1,228</b>
Gynecology	1,686	1,916	2,016	1,986	<b>2,094</b>
General Surgery	1,780	1,874	2,095	2,156	<b>2,408</b>
Total	5,233	5,692	5,905	6,114	<b>6,863</b>

Development in the numbers of General Medical Care Program outpatient examinations

	2000	2001	2002	2003	2004
ENT	31,401	33,542	29,327	31,612	<b>35,202</b>
Internal Medicine	42,310	44,515	45,296	45,769	<b>40,802</b>
Gynecology	22,611	21,580	22,768	24,855	<b>23,650</b>
General Surgery	30,954	33,592	37,268	39,255	<b>42,705</b>
Total	127,276	133,229	134,659	141,491	<b>142,359</b>

## Summary of Activities of the Complementary Services:

Department of Radiodiagnostics

Department of Clinical Microbiology

Department of Nuclear Medicine / PET Center

Department of Pathology

Department of Clinical Biochemistry, Hematology and Immunology

Department of Central Sterilization and Hygiene

### ■ Department of Radiodiagnostics

Head of Department:

Ladislava Janoušková, M.D., Ph.D.

During 2004, the unit continued to provide services both to its own hospital as well as to other health care facilities, including those with non-stop operations. The scope of its activities covers diagnostic examinations in all areas of radiodiagnostics, with emphasis on diseases of the nervous, locomotive and cardiovascular systems, as well as on vascular and non-vascular interventions.

It continued to apply **vascular techniques** over the past year, working closely with the vascular surgery department on a program to implant stents in aneurysms of the abdominal and thoracic aorta and the pelvic circulatory system. Na Homolce Hospital is ranked first in the Czech Republic for the number of implants performed. A new "cutting balloon" technique was introduced for interventions on the peripheral vessels to treat resistant lesions. It also continued the program of endovascular treatment of cerebral aneurysms using a detachable coil, with the introduction of a new type of hydraulic detachable coil, as well as the use of remodelling techniques in the treatment of wide-necked aneurysms using stents. Similarly, treatment of local intracranial thrombolysis continued for cases of acute occlusion of the cerebral arteries. A new technique of distal protection was introduced to prevent thromboembolic complications in interventional treatment for occlusion of the carotid arteries .

Percutaneous vertebroplasty for the treatment of compression fractures caused either by osteoporosis or tumor was one of the range of **non-vascular methods** that continued to be performed in 2004. **Magnetic resonance imaging** saw significant development and the number of specialized examinations of the heart, functional MR of the brain and peripheral angiographies showed a sharp rise. In the field of **CT examinations**, virtual CT colography and bronchoscopy were introduced last year, particularly for patients who are unable to undergo endoscopic examinations and new imaging of the coronary atrium and coronary veins prior to implanting biventricular pacemakers was brought into practice. The safety of CT examinations was improved in 2004 by the introduction of a special calibration (C.A.R.E. dose), which supported radiation hygiene targets by reducing radiation doses per patient and per examination by 30-50%.

In the area of **ultrasound examinations**, the mammogram unit brought ultrasound control of biopsies into routine practice.

### Basic data - Department of Radiodiagnostics

Number of physicians	18
Number of laboratory technicians	26
Number of nurses	7

### Technical equipment

Angiography Center	1 x Multistar Siemens 1 x Toshiba CAS 1 x theater OEC 9700
CT unit	1 x Siemens Somatom Plus 4 1 x Siemens Sensation
MR unit	1 x Magnetom Impact Expert 1 T 1 x Magnetom Symphony 1.5 T
USG unit	1 x Toshiba Aplio 1 x Toshiba Eccocee 1 x Logiq 9
Mammography	1 x Lorad M-IV
Basic equipment	4 radiosopic and radiographic units, mobile x-ray unit
PACS	Workstations, scanners, printers, laser filmcameras, data archives

### Specialized therapeutic interventions in 2004

PTA	599
Implantation of vascular stents	471
Implantation of stentgraphs into abdominal and thoracic aortal aneurysms	91
Endovascular treatment of cerebral aneurysms using GDC	51
Local thrombolysis and PTA in the extra- and intra-cranial area	40
Vascular embolization and interventions to the head	9
CT-guided radicular injections	594
Drainage of abcesses and cysts, guided biopsies	37
Vertebroplasty	47
Radiofrequency ablations	16
Breast node biopsies	68
Chemical sympathectomy	2

## Selected radiodiagnostic examinations in 2004

	2000	2001	2002	2003	2004
Computer tomography	8,546	8,844	8,458	9,120	<b>11,014</b>
Magnetic resonance	7,473	9,096	9,960	10,068	<b>11,921</b>
Angiography	14,050	15,011	15,854	16,433	<b>17,020</b>
Ultrasound examinations	18,067	20,009	18,446	21,119	<b>25,585</b>
Mammography	4,750	4,815	5,170	6,400	<b>6,464</b>
Total	100,821	108,607	107,473	115,042	<b>130,034</b>

## Department of Nuclear Medicine / PET Center

Head of Department:  
Otakar Bělohávek, M.D., Ph.D.

The services provided by the center include **scintigraphic functional imaging**, which includes **PET (positron emission tomography)**, mainly used to diagnose disorders of an oncological, neurological and cardiovascular nature. In 2004 a new **hybrid PET/CT scanner** (a combination of positron emission tomography and computer tomography) was brought into full operation. This equipment provides the most up-to-date diagnostics of oncological conditions, and is currently the only one of its kind in the Czech Republic. Na Homolce Hospital became the largest European center of its kind in terms of the number of PET examinations performed. Further services provided by the center include **immunoanalytic laboratory testing techniques** (RSA - radiosaturation analysis and chemiluminescence).

During 2004, the Department of Nuclear Medicine/PET Center continued to serve patients in other health care facilities throughout the Czech Republic as well as those in Na Homolce Hospital (primarily in providing PET examinations). The number of PET interventions and examinations was 62.6% higher than in 2003, with 84% consisting of examinations of

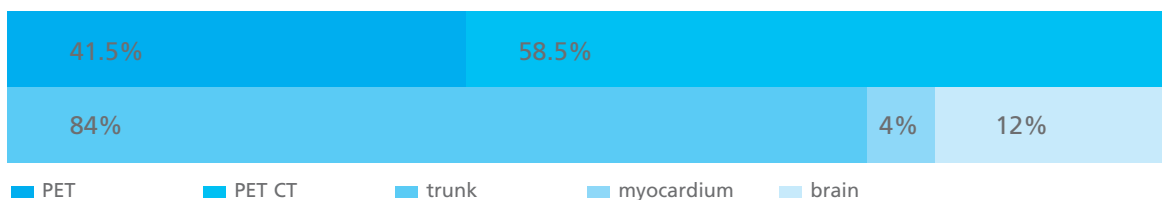
the trunk, 12% examinations of the brain and 4% examinations of the myocardium. The number of scintigraphic examinations reached an all-time high, with a 6.6% year-on-year increase in scintigraphic interventions and a 9.9% growth in scintigraphic examinations. The rise was mainly in skeletal scintigraphies, phlebography and perfusion scintigraphy of the myocardium, which made up 86% of all interventions performed. The year-on-year rise in examinations performed by the immunoanalytic laboratory was 10% last year. In June 2004 the center was awarded ISO 9001-2000 certification on the basis of a certification audit carried out by the Det Norske Veritas firm of auditors.

The center participated in 3 grant projects.

Basic data - Department of Nuclear Medicine / PET Center

Number of physicians	7
Number of other college graduates	2
Number of nurses	16
Technical equipment instruments	
2 x scintillation cameras	
1 x positron emission tomography camera	
1x positron emission tomography and CT camera	
Imaging station	
Immunoanalysers	

Breakdown of PET and PET CT examinations in 2004



Number of interventions/examinations in 2004

Scintigraphy	
number of interventions	7,339
number of examinations	2,315
Positron emission tomography	
number of interventions	5,803
Laboratory tests	
number of interventions	124,472
number of assays	97,794

Breakdown and number of immunoanalytic assays in 2004

Thyroid screening	42.4%
Onco-markers	28.0%
Non-thyroid hormones	17.1%
Pregnancy screening	12.4%
Miscellaneous	0.1%

## Breakdown and number of scintigraphic examinations in 2004

Myocardium	54%
Skeleton	20%
Phlebography	12%
Lungs	5%
Kidneys	4%
Brain	3%
Miscellaneous	1%
Leucocytes	1%

## Department of Clinical Biochemistry, Hematology and Immunology

Head of Department:  
Prof. Josef Hyánek, M.D., Ph.D.

In the field of [clinical biochemistry](#) the department provides a routine biochemical service for both hospital wards and outpatient clinics in Na Homolce Hospital, and focuses on the diagnosis and treatment of critically ill patients admitted to the hospital. The number of routine laboratory interventions registered a rise of 4.6% in 2004. In the case of inpatients in a critical state, testing is carried out directly in the wards (POCT diagnostics), as well as the analysis of cardiomyarkers, amino acid and drug levels. During 2004, the clinical biochemistry unit continued to provide services to general practitioners, pediatricians and other specialists working in the field. An important part of the work carried out by the biochemical unit concerns the analysis of lipid metabolism disorders. Routine diagnostics of these atherogenetic disorders is supplemented by metabolic tests for homocystein levels and other related parameters. Diagnostic activity is also focused on investigating genetic anomalies relating to the metabolism of lipids of adults and, particularly, in children. Over the past year, the club of parents of children suffering from lipid disorders continued to provide a metabolic counseling service, which concentrated in particular on rehabilitation, reconditioning and

educational activities for club members. In [hematology](#), the laboratory provides a routine service for clinical units and conducts specialized analysis of coagulation parameters for the Department of Vascular Surgery. [The Immunology Laboratory](#) again in 2004 used a wide spectrum of serological and cytological examination methods in the fields of immunology and allergology. Specialized activities were focused on diagnosing septic conditions in critically ill patients and on the diagnosis of respiratory dysfunctions. Specialists from the Immunology Laboratory participated with clinical immunology and allergology staff in the activities of the newly created Center for Allergology and Clinical Immunology. [The Transfusion Center](#) ensures the supply of blood and blood derivatives to the clinical departments.

[The Laboratory for Cerebrospinal Fluid and Neuroimmunology](#) carries out routine analyses of serum and cerebrospinal fluid and cytological analyses on patients with neurological and neurosurgical diseases. It also serves a long-term function as a reference center for cerebrospinal fluid laboratories in the Czech Republic in the area of cytological analysis.

In 2004 [the DNA Diagnostic Laboratory](#) carried out molecular genetic diagnostics of hereditary diseases and genetic predispositions for serious

diseases commonly occurring in the population. Screenings for mutations in thrombophile conditions and the detection of foreign genomes in biological material became routinely available, causal mutation diagnostics for Gilbert syndrome and the diagnosis of chronic lymphatic leukemia were initiated and the project of genetic analysis of oligodendrogliomas was

developed.

In June 2004, the Department of Clinical Biochemistry, Hematology and Immunology was awarded ISO 9001-2000 certification on the basis of a certification audit carried out by the Det Norske Veritas firm of auditors

#### Basic data - Department of Clinical Biochemistry, Hematology and Immunology

Number of physicians	12
Number of other college graduates	5
Number of laboratory technicians	33
Number of nurses	8
Total number of examinations	3,345,366

#### Outpatient clinics

Number of patients	
Metabolic disorders	6,966
Hematology	1,654
Immunology and allergology	5,656
Neuroimmunological	858
Total	15,134

#### Breakdown of examinations in 2004

Laboratory	
Urine examinations	93,954
POCT	93,458
Drug laboratory	4,819
Cerebrospinal fluid examinations	66,859
Routine and research biochemistry	1,951,677
Total BIOCHEMISTRY	2,210,767
HEMATOLOGY	926,426
IMMUNOLOGY	118,306
DNA DIAGNOSTICS LABORATORY	7,125
BLOOD BANK AND TRANSFUSIONS	82,742
Total	3,345,366

## ■ Department of Clinical Microbiology and Antibiotic Center

Head of Department: Vlastimil Jindrák, M.D.

The Department of Clinical Microbiology provides [laboratory diagnostics of community and nosocomial infectious diseases or complications](#) in hospitalized patients, as well as consultative work to deal with their diagnosis, treatment and prevention. The department's consultants participate in routine interdisciplinary work in a team of specialists to provide the highest possible level of treatment for both ward patients and outpatients. In 2004 there was a further increase in the volume of examinations performed by the laboratory diagnostic services, which have traditionally been provided both to Na Homolce Hospital as well as to primary care general practitioners and specialists working in the field. A rise was also recorded in bacteriological and serological examinations.

An important part of the department's activities consists of the work of [the Antibiotic Center](#), which deals with antibiotic practices in Na Homolce Hospital as well as in primary outpatient care. In 2004 the total numbers of patients with infectious complications who required consultation with specialists from the Antibiotic Center again rose. The cost of antibiotics as a proportion of the hospital's outgoings fell to 13% year-on-year, which is the lowest figure recorded since these values began to be recorded in 1995. There was also a significant drop in the levels of antibiotics used in the hospital. Indicators assessing the level of antibiotic used and the itemized costs testify to the effective-

ness of the system to control the use of antibiotics at Na Homolce Hospital.

Within the framework of the accreditation efforts of the hospital, the department developed and implemented a routine system to monitor nosocomial infections, which is supported by specially developed information technologies. The system enables the identification, reporting and registration of cases of nosocomial infection in hospital inpatients.

During the past year the department has again been involved in or has directly organized projects of national importance. The department is the main sponsor for two Ministry of Health projects on the quality of health care "[Influencing resistance to antibiotics by the quality of antibiotics used](#)" which covered partial projects focusing on the quality of prescribed antibiotics in primary pediatrics, in primary care for adults, on the quality of antimicrobial prophylaxes during surgery, and analysis of the consumption of antibiotics in hospitals and the surveillance of antibiotic resistance.

In June 2004, the department was awarded ISO 9001-2000 certification on the basis of a certification audit carried out by the Det Norske Veritas firm of auditors.

The department completed one grant project in 2004.

### ■ Basic data - Department of Clinical Microbiology and Antibiotic Center

Number of physicians	3
Number of other college graduates	1
Number of laboratory technicians	16
Number of examinations	137,650



■ Consultations for antimicrobial therapy in admitted patients from 2000 to 2004

**Number of consultations**

2000	2001	2002	2003	2004
4,287	5,069	6,076	6,960	7,291

**Number of patients consulted**

2000	2001	2002	2003	2004
905	1,024	1,266	1,559	1,622

**Proportion of patients consulted out a the total of admitted patients**

2000	2001	2002	2003	2004
6.5%	6.8%	7.5%	9.3%	8.4%

■ Number of examinations performed from 2000 to 2004

Na Homolce Hospital

	2000	2001	2002	2003	2004
Bacteriology	35,251	39,018	41,473	45,952	54,306
Serology	11,330	12,257	14,282	15,194	17,238

External clients

	2000	2001	2002	2003	2004
Bacteriology	44,809	47,387	48,985	47,969	54,209
Serology	8,727	8,343	9,380	9,989	11,889

**Total number of microbiological examinations**

	2000	2001	2002	2003	2004
Bacteriology	80,100	86,405	90,458	93,921	108,515
Serology	20,084	20,500	23,652	25,183	29,133

## QUALITY MANAGEMENT IN 2004

One of the basic stabilizing pillars of Na Homolce Hospital is the long-term quality of the services provided. The effort to provide top quality medical care following clearly defined standards led Na Homolce Hospital to try to acquire the internationally recognized Joint Commission International (JCI) health care facility accreditation. In 2004 a series of steps and measures were adopted to monitor and improve quality.

### ■ JCI accreditation

Joint Commission International (JCI) is an international organization which has been accrediting special health care facilities outside the USA since 1998. It is a subsidiary of JCAHO, which, with a tradition dating back over more than 75 years, is now the largest health care accreditation organization in the United States. Almost 50 hospitals have now been granted JCI accreditation in sixteen countries worldwide (outside the USA). Accredited hospitals guarantee patient

safety and quality of care through the continuous monitoring, analysis and improvement of quality indicators in all areas of hospital operations. Most important is the fact that the hospital must monitor several dozen indicators that directly affect patient safety and the reliability of the treatment processes. The JCI accreditation is awarded for a period of three years, after which the health care facility must reapply.

### ■ Preparation of new directives

Since the summer of 2003, Na Homolce Hospital has been phasing in measures required to meet international JCI accreditation standards. The hospital management has prepared 40 new directives on the basis of 368 JCI standards covering both the provision of health care and the running of the hospital. Eleven of these are specialist directives covering the provision of health care, while the others describe the organization

of work in Na Homolce Hospital.

In January 2004 the accreditation team submitted these directives to the JCI consultants to assess whether they complied with the accreditation requirements. During their visit Na Homolce hosted an official publication launch of the official commentated Czech translation of the accreditation standards, to which the hospital contributed.

### ■ Employee training

After publication of the new directives, extensive training was provided for the employees in the spring of 2004. All employees were deliberately invited to attend the training program, because each of them contributes through their work to the quality of the services provided by the hospital as a whole. In parallel with this, internal audits were conducted last year where groups of auditors, drawn from amongst the

physicians and nursing staff, periodically checked in pairs whether the accreditation standards were being adhered to in practice by the various departments.

In connection with the implementation of the JCI accreditation standards, training took place for all employees in emergency resuscitation and this will be repeated every two years.

## Mock JCI Survey

In June 2004, JCI conducted a "mock" survey. Three experienced consultants spent five days going through the hospital. They spent two hours in almost every department and checked whether the JCI accreditation standards were being adhered to in practice. They looked for evidence in the medical records, by staff interviews and by checking rooms throughout the hospital premises (including, for example, the medical gas store, the kitchens and the backup electricity supply). The outcome of this audit was a report where the consultants assessed whether the hospital fulfilled each of more than 300 standards fully, partially or not at all. At that stage Na Homolce

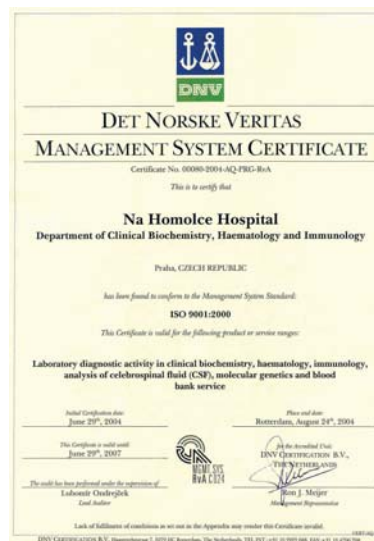
Hospital fulfilled 77% of the standards (the standards cover a total of 1,032 indicators that the hospital must fulfil).

In the fall of 2004 the hospital focused on eliminating the deficiencies that were identified and searching for suitable ways of fulfilling the remaining 23% of standards. In December 2004, after further consultations with JCI, the measures proposed and implemented by the hospital were approved and JCI then recommended that we apply for their accreditation in 2005, on the basis of an accreditation audit, which is due to take place this summer.

## Acquiring ISO 9001:2000 certification

In parallel with the preparation for JCI accreditation, three departments underwent preparation for certification according to ISO 9001:2000 norms. In June 2004, the hospital was awarded quality management certification for the activities of its laboratory and diagnostic services. Requirements for ISO certification not only

cover improvements in patient relations, but also in employee safety. The aim of this quality management system is the early discovery and elimination of various types of risk, thereby leading to increased safety levels in the provision of health care.



## RESEARCH GRANTS IN NA HOMOLCE HOSPITAL IN 2004

### ■ Grant National Institutes of Health, USA (National Heart, Lung and Blood Institute, National Institute of Diabetes and Digestive and Kidney Diseases)

**Title:** International Multicentric BARI 2D Study  
(Bypass Angioplasty Revascularization Investi-  
gation 2 Diabetes)

**Period:** 2002–2007

**Authors:** University of Pittsburgh Graduate  
School of Public Health and 40 other university  
medical centers in the USA and Canada, Na  
Homolce Hospital in Europe

**Main author:**

- Katherine Detre, M.D., Ph.D.  
Director, Epidemiology Data Center,  
University of Pittsburgh Graduate School  
of Public Health, Pennsylvania, U.S.A.

**Co-authors for Na Homolce Hospital:**

- Petr Neuzil, M.D., Ph.D.  
*Department of Cardiology,  
Na Homolce Hospital*
- Štěpánka Stehlíková  
*Department of Internal Medicine,  
Na Homolce Hospital*

The project aims to research the most effective method of treating ischaemic heart disease in patients suffering from type 2 diabetes. 95% of all diabetics suffer from this type of diabetes. Type 2 diabetics have high blood sugar levels, either caused by the inability of the organism (pancreas) to produce enough insulin, or the inability of the organism to react to the insulin, or a combination of both these disorders. The resultant high level of blood sugars subsequent-

ly causes damage to many organs, including the heart muscle. It has been proved that ischaemic heart disorder affects patients with type 2 diabetes at an earlier age and two to three times more frequently than the healthy population. The study will investigate whether the early treatment of ischaemic heart disorder by angioplasty, coronary bypass or pharmacological methods produces better results for type 2 diabetics. At the same time, patients taking part in the study will be tested with two different therapeutic methods for high blood sugar levels: the administration of pharmaceuticals to stimulate the production of insulin by the organism (insulin providers) or the administration of drugs that adjust the body's reaction to insulin (insulin sensitizers). It is not yet known which of these pharmaceutical treatments is the better for patients suffering from a combination of type 2 diabetes and ischaemic heart disorder.

## ■ Grant NS 1296 (Na Homolce Hospital and Elekta)

**Title:** Treatment of Glaucoma with the Leksell Gamma Knife at the Early Stages of the Disease

**Period:** 2003-2008

**Authors:**

- Assoc. Prof. V. Vladyka, M.D., Ph.D.  
*Department of Stereotactic and Radiation Neurosurgery, Na Homolce*
- Roman Liščák, M.D., Ph.D.  
*Department of Stereotactic and Radiation Neurosurgery, Na Homolce*
- Gabriela Šimonová, M.D., Ph.D.  
*Department of Stereotactic and Radiation Neurosurgery, Na Homolce*
- Josef Novotný, M.Sc.  
*Department of Medical Physics, Na Homolce*
- Prof Martin Kořán, Ph.D.  
*Clinical Psychologist, Na Homolce*
- Daniele Tlacháčová, M.A.  
*Department of Stereotactic and Radiation Neurosurgery, Na Homolce*
  
- Assoc. Prof. Jiří Pašta, M.D., Ph.D.  
*Střešovice ÚVN Eye Clinic, Prague*
- Jiří Pilbauer, M.D.  
*Střešovice ÚVN Eye Clinic, Prague*
- Iveta Hejduková, M.D.  
*Střešovice ÚVN Eye Clinic, Prague*
- Ladislav Nováček, M.D.  
*Střešovice ÚVN Eye Clinic, Prague*
- Pavel Němec, M.D.  
*Střešovice ÚVN Eye Clinic, Prague*
- Jaroslava Vladyková, M.D., DrSc.  
*Střešovice ÚVN Eye Clinic, Prague*
- Leoš Rajmont, M.D.  
*Střešovice ÚVN Eye Clinic, Prague*

Between 2000 and 2002, both study centers contributed to the initial research project. They found that gamma knife irradiation of the intra-ocular ciliary body can still help patients at an advanced stage of glaucoma, when they face losing the eye. It alleviates severe pain, reduces intra-ocular pressure and helps to alleviate the

formation of new vessels. This is a completely new medical procedure. The results have been confirmed on over one hundred patients and presented at medical forums at home and abroad. The intermediate results have been published in foreign professional journals and the final report for this initial study is about to be printed. A new treatment option has been found for the 20% of glaucoma patients who generally reach this advanced stage of the disease.

The question remains as to whether this type of treatment can be used to halt the progress of the disease in its early stages, when increased intra-ocular pressure leads to imperceptible deterioration in vision. This applies to the 80% of glaucoma patients who are resistant to conventional treatment methods (pharmacological, laser and microsurgical).

Comprehensive computer-assisted eye examinations now enable early diagnosis and long-term comparative monitoring of the therapeutic results. A reasonable follow-up period should be at least five years.

This new five-year grant study should answer this question. Sixty patients should be a suitable number for the project and, apart from gamma knife treatment, they will have to undergo a total of 5,400 clinical and technical examinations over a period of five years.

The detailed methodology for the study has been developed in line with the latest international ethical standards and has been considered and approved by the ethics committees of both Na Homolce and the Střešovice Eye Clinic. Patients will give their informed consent before being included in the study.

Should this research project prove that gamma knife treatment prevents vision deterioration in these glaucoma patients and has a neuroprotective effect, it would mean a breakthrough for global efforts, which have so far been ineffective.

## ■ Grant NS 1297 (Na Homolce Hospital and Elekta)

**Title:** Can Leksell gamma knife treatment halt the progress of the disease and improve vision in age-dependent macular degeneration?

**Period:** 2003-2008

**Authors:**

- Assoc. Prof. V. Vladyka, M.D., Ph.D.  
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- Leoš Rajmont, M.D.  
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At an advanced age one of the most frequent, and most serious, eye diseases is age-dependent macular degeneration (ADMD). To date no unequivocally effective treatment has been found to prevent vision loss. In the initial stages of the disease, as long as no serious deterioration in vision has taken place, a number of different treatments are used – laser, coagulation, transpupilar thermotherapy and microsurgery. Each of these has some very limited effect but

none of the procedures is effective enough to cure this serious disease. In the advanced, malignant form, a very active vascular membrane develops beneath the retina causing its partial detachment and can lead to permanent blindness.

The focused, demarcated irradiation of the pathological structure by gamma knife has proved to be an effective modern treatment for a number of eye diseases such as tumors, glaucoma and vascular anomalies. In ADMD, this type of irradiation to the vascular membranes can seal off vascular neoplasms in the membrane. This halts the activity of the membrane and can lead to a stabilization of the disease, or even a slight improvement in visual orientation in space. The use of non-invasive gamma knife treatment avoids the need for intra-ocular surgery that is sometimes associated with numerous complications.

The effect of gamma knife treatment on ADMD has not yet been proven, which is why we have proposed a grant study of 30 patients with this condition. A comprehensive series of examinations will have to be conducted at regular intervals over a period of at least 5 years. Modern imaging methods will complement the clinical tests.

The detailed methodology for the study has been developed in line with international ethical standards and has been considered and approved by the ethics committees of both Na Homolce and the Střešovice Eye Clinic. Patients will give their informed consent before being included in the study.

Should the gamma knife prove effective as a form of treatment for limited forms of ADMD, it would represent an important contribution to widening the therapeutic options available as well as to reducing the cost of treating this disease.

## ■ Grant IGA NR/ 8105-3 and MSMT 0021620808

**Title:** The activity of dipeptidyl-peptidase IV and their structural homologues (DASH) in cerebral tumors

**Period:** 2004–2006

**Author:**

- Prof. Alexi Šedo, M.D., Ph.D.  
*Institute of Molecular Biology, ČSAV*

**Co-authors:**

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The pathogenesis of many diseases, including cancer, often contains incorrect proteolytic post-translation modification of biologically active

peptides. Many research centers have shown the relation between the regulated expression of new groups of enzymic molecules (dipeptidyl peptidase IV and their structural homologues, referred to as DASH molecules) with the incidence and progression of certain types of malignant growths.

The grant referred to above refers to a study of the expression and enzymic activity of DASH molecules (primarily DPP-IV) located in the plasma membrane of the tumor cells of malignant human glioma (anaplastic astrocytoma AA and multiform glioblastoma GBM).

We have managed to show that a co-expression of DPP-IV and FAP (fibroblast activation protein alpha) occurs in the tumors we studied. Preliminary results also importantly demonstrate co-expression of enzymatically active and inactive DASH molecules in glial cells that increase in quantity in tumors with a higher degree of malignancy.

## ■ Clinical Study

**Title:** Treatment of malignant brain tumors by the continuous administration of electric current (TTF–Tumor Treatment Field). In association with the company NovoCure, Israel

**Period:** 2004–2007

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The current treatment of malignant cerebral tumors, originating in the supporting brain

cells—the so-called glial cells, which are termed malignant cerebral glioma, or in their most malignant form as multiform glioblastomes, is totally unsatisfactory. The standard treatment procedure is the surgical reduction of the tumor, followed by irradiation and chemotherapy. There is a high percentage of recurrence and the prognostic indicators are unfavorable. For this reason, intensive research activity into other therapeutic options is underway worldwide.

One of these is the application of electric current at an extremely low intensity to the area of recurrence of the brain tumor. At suitable levels, the electric current creates a magnetic field at the site of the tumor, which orientates the fast-dividing tumor cells symmetrically along the axis of their division and destroys the dividing helix during mitosis of these tumor cells, thereby

destroying them. This has been demonstrated in *in vitro* experiments and on experimental animals and clinical trials are now taking place at the Department of Neurosurgery at Na Homolce Hospital and in the United States. The great advantage of this method, which so far is only

used once standard therapies have been exhausted, is that it is totally non-invasive and has no side-effects. 8 patients are currently being treated by this method at Na Homolce Hospital and the preliminary findings are promising.

## ■ Grant: no. NR 8232-3/2004

**Title:** Neurophysiological aspects of spinal cord neurostimulation for the treatment of chronic pain

**Period:** 2004–2006

**Author:**

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The aim of the project is to clarify changes in cortical activity during spinal cord neurostimulation in patients suffering chronic pain by using EEG

and fMRI. Individual experiments provide a comparison of cortical activity, recorded using a 128 channel EEG and functional magnetic resonance during different forms of somatosensory stimulation (touch, heat, cold, pain caused by heat and cold) and when moving freely with and without spinal cord stimulation. Electrophysiological means will also be used to verify the effect of spinal cord stimulation on nociceptive spinal cord reflexes. The practical impact of the project should consist of the objective assessment of the effect of spinal cord stimulation from the point of view of the level of activation of the cortical structures participating in the sensation of pain (the insula, secondary somatosensory area, gyrus cinguli) and in the creation of an effective clinical research process to demonstrate objective changes in the "pain" structures of the brain during a clinically important test period, and to proceed the definitive installation of a neurostimulation system (by implanting an energy generator to stimulate the electrodes).

## ■ Grant IGA 7773-3

**Title:** Frontal cervical discectomy – ensuring stability after radical surgery for degenerative diseases to the cervical vertebrae. A comparative study

**Period:** 2004–2006

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The significant social and economic consequences of degenerative diseases of the cervical vertebrae have encouraged medical personnel to search for new methods of treatment and then to further improve them. The most serious consequences of the affected spine manifest themselves clinically through a number of neurological symptoms. This relates to compressive spinal cord and radical compressive syndromes which develop from mechanical, ischemic or combined causes. Surgical decompression and stabilization of the spine are the primary methods of treatment for degenerative diseases. There is a consensus of opinion over the method of surgical treatment as far as the decompressive part of the intervention is concerned (microtechniques, radical surgery). The debate is over the method of stabilization: whether and what type of prosthesis is suitable, particularly over the long term, when more pro-

gressive methods of dynamic implants should be used, etc. This study compares three different methods performed to ensure long-term decompression and fusion in cases of degenerative disease of the cervical vertebrae with complete pre- and post-operative examinations of the patients. During 2004 the first prospectively directed examination was calculated in order to specify the relation of the number of patients suitable for single stage frontal discectomy to the number of patients suitable for two-stage discectomy. According to the relations we have found, it will be possible to adjust the monitoring parameters and to select the most suitable form of statistical treatment.

The first results of treatment from a clinical and electrophysiological perspective correlate positively with our favorable expectations.

## ■ Grant NS 1592

**Title:** Development of spatial memory tests suitable for the early detection of memory disorders in neurological and psychiatric patients

**Period:** 2002–2004

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The study of the development of memory nerve mechanisms, which has been underway for the past 10 years in the physiological Institute of the Czech Academy of Science, has led to the creation of non-verbal tests of space cognition that can be used to objectively assess memory disorders induced by cerebral diseases. With the

support of the McDonnell Foundation, a laboratory was built at Na Homolce Hospital between 1999 and 2001, and equipped with a computer monitoring system to evaluate the navigational behavior of patients suffering from lesions in the medio-temporal cortex. A group of patients with drug resistant epilepsy were examined here before surgery and one year afterwards. The aim of this study is to follow on from this research and to use this unique facility for the quantitative assessment of memory disorders caused by other cerebral diseases, particularly the early stages of Alzheimer's disease. Three computer tests for spatial memory and orientation have been developed, of which two were also related to a real version, i.e. the results of the computer tests were compared and correlated with the results of navigational behavior in the laboratory. In addition to a group of patients with Alzheimer's disease, individuals with slight cognitive disorders and healthy individuals were examined. On the basis of data received from 107 healthy individuals examined using the computer tests, norms were drawn up

for four age groups (40–79 years). In addition, a manual for the Blue Velvet battery of tests was published as internal support material,

describing the development of the tests, a detailed guide to their administration, the method of assessment and the norms.

## ■ Grant NF 7623-3

**Title:** Huntington's Disease: Analysis of relations between the clinical, functional and morphometric findings

**Period:** 2002-2005

**Author:**

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Magnetic resonance plays an important role in researching hitherto poorly-understood neuro-

logical disorders. Huntington's Disease falls into this category, a hereditary condition affecting predetermined areas of the cerebral gray matter, first causing deterioration and later morphologically detectable shrinkage. In these cases, magnetic resonance can carry out non-invasive mapping of various areas of the brain and compare their volume and the intensity of the emitted signals with healthy volunteers of a similar age. This is the scope of the approved grant. The results of this project may significantly contribute to our understanding of the ways in which Huntington's Disease damages the gray matter of the brain and how the magnetic resonance findings are correlated to the clinical state of the patient.

## ■ Grant NR 7823-3

**Title:** A comparison of the results of electrical cortical stimulation and functional magnetic resonance

**Period:** 2004–2006

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The project deals with the clinical use of functional magnetic resonance (fMRI) for stereonavigation during neurosurgical interventions, primarily in operations on cerebral tumors in the frontal and parietal lobes. The method enables

areas of the brain cortex and the subcortical grey matter, which are involved in tackling concrete tasks - e.g. rhythmical movement of the limbs or when taking word fluency tests, to be detected. Brain tumors can push away, infiltrate or destroy the tissue. Thus the aim of the examination is to show the relation of the tumor to the motor and speech centers and to transform this information into the navigation system. This allows the neurosurgeon the possibility of seeing the cortical areas that are important in terms of maintaining the function and so should be spared during the intervention. The grant also aims to test the reliability of localizing these functional areas using fMRI. Because of this, electrical cortical stimulation of the brain cortex is carried out during the operation, which is performed while the patient is conscious. This is the only way to test the sensitivity and specificity of fMRI.

## ■ Grant IGA MZ ČR NC 7460-3

**Title:** The use of three-dimensional gel dosimetry to confirm irradiation procedures in radiation oncology

**Period:** 2003-2005

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The objective of this proposed project is to bring the existing system of three-dimensional gel dosimetry into clinical practice. During the project, the dosimeter will be used to verify various irradiation techniques used in radiation oncology with the objective of increasing the overall

quality of treatment. The chemical and physical parameters of the dosimeter will be studied during its preparation, irradiation and evaluation of nuclear magnetic resonance just as other measuring techniques are tested (using CCD cameras, for example). Three-dimensional gel dosimetry can offer advantages not found in other dosimetric methods: 1) the dosimeter is tissue equivalent and can create its own testing phantom, 2) three-dimensional doses can be measured during a single irradiation session, using a single dosimeter and 3) the dosimeter enables unlimited simulated irradiation of the patient. Using three-dimensional gel dosimetry in clinical dosimetry would greatly increase the possibilities of controlling the overall radiation process during radiation oncology of the patient. The development of a suitable method for independent audit of planning systems or irradiation techniques would also help in fulfilling the conditions of Act no. 18/Coll. 1997 (on atomic energy) and related decrees. Bringing the gel dosimeter into clinical practice within the framework of this project should enable us to determine the conditions governing its future use in the Czech Republic, either to verify selected radiation oncology techniques in individual centers, or for use by the public bodies responsible for monitoring radiation safety.

## ■ Grant IGA MZ ČR NC 7568

**Title:** The importance of positron emission tomography (PET) with 18-fluorodeoxyglucose (18-FDG) in diagnosing malignant lymphoma in children and adolescents

**Period:** 2003-2005

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An essential pre-condition for the successful treatment of malignant lymphoma in children (ML) is determining the extent of the disease. Conventional imaging methods enable morphological imaging of the tumor. Positron emission tomography (PET) uses glucose marked with radioisotopes to allow imaging of metabolic changes before anatomic changes can be perceived. While this examination has been found to be suitable for the initial staging and subsequent monitoring of adult oncological patients with ML, the role of PET in child ML diagnostics has not yet been defined.

We intend to use this prospective study to judge the clinic importance of FDG-PET in determining the extent of the disease before commencing treatment and to monitor the response to treatment of children and adolescents with Hodgkins disease (HD) and non-Hodgkins lymphoma (NHL). The objective of the project is to define the role of PET in ML diagnostics and to propose the most suitable place for PET in the range of interventions available under the Czech health care system.

The results of this study should help to group patients by level of risk (to reduce the level of toxicity in treatments for children with positive findings while intensifying the treatment in high-risk patients) as well as improving the treatment results of child ML.

## ■ Research Center established by the Ministry of Education, Youth and Sports: LN00B122

**Title:** Center of neuropsychiatric studies.

**Contribution of Na Homolce Hospital to the project:** Utilization of positron emission tomography in the study of neuropsychiatric disorders.

**Period:** 2000-2004

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As part of this project, patients suffering from schizophrenia are examined by positron emission tomography at Na Homolce Hospital. Neuroleptic therapy of these patients had been discontinued for various reasons. The group of

examined patients also includes those diagnosed with a first episode of schizophrenia, those on medication and experiencing an onset of remission. The PET examination monitors the relationship between the PET activation profile and several other variables, such as the type of therapy, the symptomatology assessed on the basis of psychometric scales and undesirable side-effects of the therapy - such as extrapyramidal syndrome.

The project was successfully defended at its final presentation and on the basis of this, and most importantly with regard to the well-developed infrastructure and level of cooperation within the research center, the project received authorization to continue, with the subtitle Clinical Applications of Neurobiology, from 2005 to 2009.

## ■ Grant IGA MZ ČR: NR 8033-6

**Title:** Reduction in the toxicity of primary treatment of advanced Hodgkins lymphoma

**Period:** 2004–2009

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The project takes place with the participation of the Karlovy Vary and Brno Teaching Hospitals in a randomized study of HD15 (5th generation Deutsche Hodgkin Lymfom Studiengruppe – DHSG). The objective of the study is to reduce the toxicity of the therapy and to monitor the prognostic importance of FDG-PET, which is performed at Na Homolce Hospital. The results will be compared with data from abroad and potential risk factors which may impact the regional modification of treatment of Czech patients will be analyzed. The project is based on close interdisciplinary and inter-institutional cooperation. In a wider context we can foresee Na Homolce Hospital becoming involved in cooperation with research centers in the EU.

## ■ Grant IGA NA 7452-3

**Title:** Correlations between the genotype and phenotype of family-related hypercholesterolemia in children and adolescents.

**Period:** 2003-2005

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Out of a total of 160 children attending the metabolic outpatients clinic for hypercholesterolemia, molecular-genetic testing to establish apoB100 and LDL receptors was carried out on 108 children, and an additional 213 tests were performed on their parents and closest family members (n=321). Of 10 types of LDL mutation receptors analyzed, the most frequently found mutations were 1272ins96 and G751E. The average value for total cholesterol levels (TC) at LDL mutation receptors was 7.4

mmol/l and in the Apo B100 7.2 mmol/l. 2 homozygotes were found for ApoB100 with levels of TC 11.7 and 10.7 mmol/l.

The methodology used was an extremely complex method to establish cholesterol synthesis precursors (lathosterol, campesterol, desmosterol, lanosterol and sitosterol). The only significant correlation was between TC and lathosterol. The diagnostic spectrum of cholesterol precursors was used to diagnose suspected desmosterolosis in bone dysplasia with hypercholesterolemia.

IMP ultrasound examination of the monitored children with family-related hypercholesterolemia did not detect, with the exception of one patient, positive changes in weight acquisition.

## ■ Grant NM 6548-3

**Title:** Hyperhomocysteinemia in pregnancy: the role of genetic factors in the appearance of defects in the neural tube, orofacial clefts and preeclampsia

**Period:** 2001-2005

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The aim of the grant project was to study the role played by genetic factors related to homocystein metabolism in the development of certain complications during pregnancy. The study contributes to an understanding of the patho-

genic mechanisms involved in preeclampsia and orofacial clefts. It should lead to improvements in treatment and, mainly, to preventing the occurrence of these human reproductive complications. New allele variants in the genes controlling the metabolism of homocystein are studied in the Czech population: CTH, GNMT, MAT1A, MAT2A, AHCY, PK. In the event of positive findings, imbalances in the bonds will be analysed to determine whether selected variants in the genes of the methionine and homocystein cycle actually contribute to the pathogenesis of neural tube defects, orofacial clefts or preeclampsia. Binding analysis will be use on the three generation families with several affected individuals, who are continually examined during the course of the project, to determine whether the genes of the methionine cycle really contribute to the development of the pregnancy complications that are being studied.

## ■ Grant NF 7625-3

**Title:** Idiopathic generalized epilepsy: Correlation between genotypes and phenotypes. Analysis of gene mutation for voltage-gated sodium-channels (SCN1A, SCN1B, SCN2A)

**Period:** 2002-2005

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GEFS+ type 2, which was first described in two French families in 1999, has been mapped to the 2nd chromosome (area 2q23 - q31; Lopes-Cendes et al 2000, Baulac et al 1999, Moulard et al 1999, Peiffer et al 1999). This locus was earlier presented in the literature under the name FEB3. These mutation areas were located in the voltage-gated sodium-channel alpha subunit genes (genes – SCN1A, SCN2A1, SNA1A2 a SCN3A). Escayg (Escayg et al 2000) described mutations in the neuronal voltage-gated sodium-channel alpha-1 subunit gene, SCN1A. This gene contains 26 exons. The alpha-1 subunit is the tubular region of the channel peptide. So far, 6 point mutations that result in phenotypic GEFS+ have been identified in SCN1A. These mutations are in functionally different channel domains, but they may disrupt the gating mechanism by

reducing the rate of inactivation of SCN1A as a result of persistent depolarization. Gene SCN1A was also described by Claes and coworkers (Claes et al 2001) as a candidate gene segregating with the SMEI (severe myoclonic epilepsy at infancy - see above) phenotype. In the case of SMEI, Claes localised 7 different point mutations in 4 exons, which were always found de novo. The aim of this grant project is the screening of candidate genes for mutations and correlating the molecular genetical results with incidences of clinical epilepsy.

## ■ Grant NR 8124-3

**Title:** Autosomal dominant spinocerebellar ataxia – extending molecular genetical diagnostics and on going longitudinal multidisciplinary study of patients' families.

**Period:** 2003–2005

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Spinocerebellar ataxia (SCA) is a wide group of heterogeneous diseases with possible onset in childhood or adulthood. In most cases it has consequences for quality and length of life. An important contribution has been made by the current world advances in the molecular diagnostic aspects of hereditary ataxia, which positively reflects in both medical and socio-economic areas. The sole research institution involved in the ČR has already been working on the problem of the complex diagnosis of SCA for 4 years. To improve the examination results and to keep pace with current world trends this project was submitted with purpose of introducing the molecular diagnostic AS SCA6-8, which covers about 80% of all incidences of AD SCA. The other 20% represent sporadic cases of AD SCA4-5, 10-17, and the diagnosis of which is still at the research stage. Apart from this, the study plans the specification of currently available DNA diagnostics of the Pelizaeus-

Merzbacher disease (PLP gene), some forms of which can have an identical picture to other observed diseases, and will continue with a longitudinal study of an extended group of patients. Owing to the fact that this disease

leads to considerable loss of movement, often with fatal consequences, DNA diagnostics represent better disease prevention and enhanced patient care, which finally results in a decrease in expenditure.

## ■ Grant IGA NL 7024-3

**Title:** Biochemical inflammation marker in exhaled air from asthmatic patients as a new method of monitoring the disease and a means of optimizing drug treatment

**Period:** 2002-2004

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The research undertaken for the purposes of this grant concerns the establishment of inflammation markers in exhaled air from asthmatic patients to ensure more precise diagnostics, to determine the seriousness of the disease, to enable differential diagnoses and to perfect the monitoring of the effectiveness of the treatment.

The research aims to establish direct markers indicating inflammation in the lower air passages of asthmatics, which have never before existed. The current diagnostic methods for asthma do not rely on any objective tests which would help to establish a definite diagnosis in a manner that is fast and non-invasive while being sufficiently sensitive and specific. The inflammation markers now used in the periph-

eral blood do not correlate to inflammation of the lower air passages and the other previously developed methods are invasive, stressful for the patient, and cannot be used routinely (bronchoscopy, lavage, biopsy.)

The co-authors, P. Čáp and F. Pehal, were the first in the Czech Republic to measure leucotrienes in standard samples of cooled air exhaled by 100 healthy adults and children and to compare the analyses with those taken from a group of treated asthmatics. For this they developed a method of direct measurement of leucotrienes using gas chromatography and mass spectrometry. The results achieved to date have been presented at the annual congress of allergological and pulmonary societies in the Czech Republic, published in specialized periodicals and are currently being printed and will appear in foreign professional publications. (Čáp P., Chládek J., Pehal F., Malý M., Petrů V., Barnes P.J. Montuschi P." Gas chromatography/mass spectrometry analysis of exhaled leukotrienes in asthmatic patients. *Thorax*, 2004, 6, 465-470 - Čáp P., Pehal F., Chládek J., Malý M.: Analysis of exhaled leukotrienes in nonasthmatic patients with seasonal allergic rhinitis. *Allergy* 2005; 60: 171-6).



## Quality Health Care Project - Center for Quality in Health Care

**Title:** Affecting the quality of antibiotics used in order to control antibiotic resistance

**Period:** 2004

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The Quality Project in 2004 follows on from a project with an identical thematic trend, which was completed in 2003, and whose final report is available from the Center for Quality in Health Care. Both projects are closely related to the national program of antibiotic policies, which was formulated in 2003, and in the same year was taken up as informational material by the government of the Czech Republic. The project author is the specialized coordinator of the national program of antibiotic policies which was created by the Committee for the national program of antibiotic policies at the Ministry of Health. The national program sets out the basic principles underlying the national antibiotic policies, which originate from recommendations from the European Union and WHO and relate to certain European activities

(EARSS - European Antimicrobial Resistance Surveillance System, ESAC – European Surveillance of Antibiotic Consumption, Prudent use of antimicrobials at DG SANCO).

The national program assumes the existence of a network of antibiotic centers as basic operating units, responsible at a local and regional level for the high quality of antibiotics used and for monitoring antibiotic resistance. The priority and objective of both projects was therefore to create a methodological approach and routine tools for the practical implementation of their basic tasks, as they are defined in the founding document of the national program for antibiotic policies. Effective control of antibiotic resistance at a national level requires innovative action from the antibiotic centers, which will function according to health care quality management methodology. It assumes a relation to the accreditation systems for health care facilities, which require the relevant standards to be set down and measurable indicators in the area of use of antibiotics and in the management activities of the antibiotic centers. Because of this, in 2003 and 2004, the project has focused on the following areas:

- Surveillance of antibiotic resistance in the community and the hospital
- Measuring, evaluation and influencing the quality of antibiotics used in primary care
- Measuring, evaluating and influencing the quality of antibiotics used for hospital care.

# A SELECTION OF 2004 PUBLICATIONS

## Foreign Publications

### Monograph:

- Vymazal, J.:  
*Cardiovascular MRI: Angiography and Perfusion Studies with 1-molar Gadolinium-Based Contrast Agent. Praha: Medcor Europe, 2004. 125 s.*

### Articles:

- Benedík, J., Zlocha, V., Mokrejš, J., Ferda, J.  
*The use of aortic connector as a shunt during endarterectomy of innominate artery revascularization. Ann. Thorac. Surg., 2004, 78, p. 1482–3.*
- Čáp, P., Pehal, F., Chládek, J., Montuschi, P., Barnes, J.  
*Gas-chromatography mass-spectrometry of exhaled leukotrienes in asthmatic patients. Thorax, 2004, 59, p. 456–70.*
- Hyánek, J., Kozák, L., Štastná, S. et al.  
*Maternal hyperphenylalaninemia in healthy Czech population of pregnant women: 30 years experience with screening, prevention and treatment. Brat. lék. Listy, 2004, 105, p. 291–340.*
- Klener, J., Uργοšík, D., Tintěra, J., Vymazal, J., Jech, R.  
*The role of functional neuronavigation in the treatment of lesions in the eloquent areas of the brain. International Congress Series 1259, 2004, p. 389–395.*
- Kouřilová, P., Syrůček, M., Kolářová, L.  
*The severity of mouse pathologies caused by the bird schistosome Trichobilharsia regenti in relation to host immune status. Parasitol Res., 2004, 93, p. 534–542.*
- Liščák, R., Kollová, A., Vladyka, V., Šimonová, G., Novotný, J. Jr.  
*Gamma knife radiosurgery of skull base meningiomas, Gamma Knife Radiosurgery-European Standards and Perspectives. Acta Neurochir., 2004, Suppl. 91, p. 65–74.*
- Liščák, R., Vladyka, V., Marek, J.  
*Pituitary radiosurgery. Techniques in Neurosurg., 2003, 9, p. 143–151.*
- Mandysová, E., Neužil, P., Niederle, P., Bělohlávek, O., Kozák, T., Mandys, V.  
*Pulmonary stenosis caused by external compression of non-Hodgkin Lymphoma. Echocardiography, 2004, 21, p. 565–7.*
- Michálek, P., David, I., Adamec, M., Janoušek, L.  
*Cervical epidural anesthesia for combined neck and upper extremity procedure. Anesth. Analg., 2004, 99, p. 1833–1836.*

- Michálek, P., Ščigel, V., Kieslichová, E., Ročeň, M.  
*The laryngeal mask airway (LMA) as an alternative to airway management in mentally retarded patients during dental procedures. South.African J. Anaesth. Analg., 2004, 10, p. 15–17.*
- Novotný, J. Jr., Spěváček, V., Hrbáček, J., Judas, L., Novotný, J., Dvořák, P., Tlacháčová, D., Schmitt, M., Tintěra, J., Vymazal, J., Čechák, T., Michálek, J., Příkladný, M., Liščák, R.  
*Measurement of relative dose distributions in stereotactic radiosurgery by the polymer-gel dosimeter. In Kodziolka, D.: Radiosurgery. Basel, Karger, 2004, vol. 5, p. 225–235.*
- Novotný, J. Jr., Hrbáček, J., Spěváček, V., Čechák, T.  
*A comparative study of four polymer gel dosimeters. J. Physics: Conference Series 3, 2004, p. 150–154.*
- Novotný, J. Jr., Spěváček, V., Dvořák, P., Hrbáček, J., Novotný, J., Tlacháčová, D., Schmitt, M., Vymazal, J., Tintěra, J., Čechák, T.  
*Application of polymer-gel dosimetry in stereotactic radiosurgery. J. Physics: Conference Series 3, 2004, p. 288–292.*
- Průcha, M., Ruryk, A., Hinnerk, B. et al.  
*Expression profiling: toward an application in sepsis diagnostics. Shock, 2004, 22, p. 29–33.*
- Stern, M., Michálek, P., Kubricht, V., Štádl, P., Adamec, M., Janoušek, L.  
*Cardiovascular complications related to regional anesthesia in carotid endarterectomy – a comparison of cervical epidural and cervical plexus block. Anesth. Analg., 2004, 98, p. SCA 76.*
- Svoboda, L.  
*Czech exercise program for dialysis and transplant patients, 10 years experience. Clin. Nephrol., 2004, 61, Suppl. 1, p. S6–9.*
- Štádl, P., Špaček, M., Bělohávek, O., Michálek, P.  
*Diagnosing vascular prosthesis infection by means of the FDG-PET/CT scan. J. Vasc. Surg., 2004, 40, p. 1246–1247.*
- Štěpánková, K., Fenton, A. A., Pastalková, E., Kalina, M., Bohbot, V.D.  
*Object location memory impairment in patients with thermal lesions to the right or left hippocampus. Neuropsychologia, 2004, 42, p. 1017–1028.*

#### Lectures:

- Adam, P.  
*Primary intraocular lymphomas. In XV. International cytological congress, Chile, 12.4.2004.*
- Adam, P.  
*Current trends in examining spinal fluid. In memorium of Orolin memorial, Bratislava, 23.4.2004.*
- Adam, P.  
*1) Prion Diseases, 2) CSF and Neuroinfective Diseases. In EFNS Symposium Vitebsk, Belarus, 12.6.2004.*
- Adam, P., Sobek, O., Táborský, L.  
*Cryptococcus meningitis. European Journal of Neurology, 11, 2004, Suppl. 2, p. 323.*

- Bartoš, P.  
*Laparoscopic paracervical lymphadenectomy: resection of the distal parameters while sparing the hypogastric plexus. XI National Meeting of the Slovak Gynecological Consulting Society with foreign participation. Banská Bystrica, 27th-29th May 2004 (invited speaker).*
- Bartoš, P.  
*Laparoscopic Repair and Uro-Genital Prolapse. Birmingham a Midland Obstetrical and Gynaecological Society Congress, Prague, 13.-16.5.2004 (invited speaker).*
- Bartoš, P.  
*Endoscopic rectocele repair. Joint Congress of ICS and IUGA, Paris, 23.-27.8.2004 (invited speaker).*
- Bartoš, P.  
*Transobturator tape approach for GSI. Joint Congress of ICS and IUGA, Paris, 23.-27.8.2004 (invited speaker).*
- Bartoš, P.  
*Radical excision of RV septum endometriosis: lateral approach. 8th Regional Meeting of ISGE, Cape Town, 6.-8.9.2004, RSA (invited speaker).*
- Bartoš, P.  
*Laparoscopy in staging and management of cervical cancer. 13th Annual Meeting of ESGE, Cagliari, Italy, 14.-17.10.2004 (invited speaker).*
- Benedík, J., Černý, Š., Michálek, P., Boček, P., Ferda, J.  
*The future of the aortic connectors – review of single surgeon experience. J South Afric Heart Ass, 2004, 1(3), p.42.*
- Benedík, J., Boček, P., Ferda, J., Duras, P.  
*The end of aortal connectors? IXth SKS Congress, Bratislava 10/2004.*
- Benedík, J., Černý, Š., Ticháček, D., Michálek, P., Kolouch, P., Jehlička, P.  
*Justify favorable morbidity and lower total cost using the relative expensive aortic connectors? In Congress of the European Society for Cardiovascular Surgery, Ljubljana, Slovenia, 2.-5.6.2004 (abstract European Journal of Cardiovascular Surgery).*
- Bělohávek, O.  
*Positron emission tomography and PET/CT in clinical practice. In XXXVII Zjazd radiologow polskich, Mikolajki, 16.-19.6.2004 (invited speaker).*
- Bělohávek, O.  
*Clinical application of FDG-PET and PET/CT, Pozitronemissziós tomográfia: helyzetérkelés és kihívások, Budapest, 28.4.2004 (invited speaker).*
- Bělohávek, O., Fencl, P., Schützner, J., Fiala, P., Stolz, A., Pafko, P., Zatloukal, P.  
*TNM staging of pulmonary tumours made by PET/CT. In 12th Czech-Austrian Symposium, České Budějovice, 16.-17.4.2004.*
- Bělohávek, O.  
*Organising high throughput in the PET Centre and Radiation Protection while performing PET/CT studies, Annual Congress of the European Association of Nuclear Medicine, 4.-8.9.2004, Helsinki, Finland: Technologist Continuing Education Abstract Book, p.58-59 (invited speaker).*
- Czinner, P., Šebesta, P., Mach, T.  
*Aneurysm of Abdominal Aorta Caused by Listeria Monocytogenes. In 21st. Congress of the International Union of Angiology, Rome, 22.-26.5.2004. Abstract Int Angiology, 23, No.1, Suppl, p.180.*

- Fencel, P., Bělohlávek, O.  
*PET/CT diagnostics is so easy! Isn't it? The 12th Czech-Austrian Symposium, České Budějovice, 16.-17.4.2004.*
- Fencel, P., Bělohlávek, O.  
*PET/CT in the surveillance of hepatic tumour treated with radiofrequency ablation Abstract No. SS8.07 In European Radiology, 2004, vol. 14, supplement 6, p. N31, ESGAR-Geneva.*
- Fencel, P., Bělohlávek, O.  
*PET/CT in the surveillance of hepatic tumor treated with radiofrequency ablation. The 12th Czech-Austrian Symposium, České Budějovice, 16.-17.4.2004.*
- Hrbáček, J., Spěváček, V., Novotný, Jr. J., Čechák, T.  
*A comparative study of four polymer gel dosimeters. DOSGEL 2004 In Third International Conference on Radiotherapy Gel Dosimetry, Ghent, Belgium, 13.-16.9.2004.*
- Hyánek, J. et al.  
*Maternal hyperphenylalaninemias in population of pregnant women. The 9th Asian-European Workshop on Inborn Errors of Metabolism(AEWIEM), Lesná, 20.-24.9.2004.*
- Hyánek, J. et al.  
*Hyperhomocysteinemias in patients suffering from skeletal disorders. The 5th Prague-Sydney Symposium, Prague, 13.10.2004.*
- Hyánek, J., Martiníková, V., Dvořáková, J., Přindišová, H., Dudková, J., Dubská, L. et al  
*Our ten years experience with medical treatment of familial hypercholesterolemia in children and adolescents. The 19th workshop on inherited Metabolic disorders Podbanské, May 2004 (invited speaker).*
- Jarůšková, M., Fencel, P.  
*Fever of unknown origin (FUO) caused by vasculitis. An imaging by PET/CT. The 12th Czech-Austrian Symposium, České Budějovice, 16.-17.4.2004.*
- Jindrák, V., Hupková, H.  
*Antibiotic prescribing in primary paediatric care in Central East Europe. Official symposium ESGAP (European Study Group on Antibiotic Policies), 14th ECCMID (European Congress of Clinical Microbiology and Infectious Diseases). European Congress of Clinical Microbiology and Infectious Diseases, Prague, 1.- 4.5. 2004. Guest speaker.*
- Jindrák, V., Hupková, H.  
*Auditing antimicrobial prescribing in primary paediatric care in the Czech republic and Slovakia. 27th ESCMID/ESGAP Postgraduate education course „Auditing, measuring and improving antimicrobial prescribing“, Průhonice, CZ, 2004, European Congress of Clinical Microbiology and Infectious Diseases, Prague, 1.- 4.5. 2004. Guest speaker.*
- Kmoníček, P., Formánek, P., Paďour, M.  
*Drug-eluting stents in the treatment of early in-stent restenoses. Intercath 2004.*

- Koříšková, Z., Šedivý, P., Dvořák, M., Klika, T., Matouš, P., Borůvka, V.  
*Akutný uzáver a. poplitea a predkolenného riečiska: Chirurgické vs. endovaskulárne riešenie. In XI. Medzinárodné radiologické Winter Forum, Vysoké Tatry, Slovensko, 17.-24.1.2004.*
- Kracíková, M.  
*Activities of the Nephrological Section of the Czech Nurses Association. Slovak Conference of Nephrological Nurses, High Tatras, 20th-22nd October 2004*
- Liščák R.  
*Gamma knife radiosurgery of skull base meningiomas. In 3rd Congress of the Slovak Neurosurgical Society with International Participation, Stará Lesná, Vysoké Tatry. 14.-16.10. 2004.*
- Liščák R.  
*Radiosurgery indications in oftalmology. In IX Congreso De la Sociedad Espanola De Radiocirurgía, Alicante, Spain, 18.-20.11.2004.*
- Liščák, R.  
*Radiosurgery applied to glaucoma. In IX Congreso De la Sociedad Espanola De Radiocirurgía, Alicante, Spain, 18.-20.11.2004.*
- Liščák, R.  
*Radiosurgery of cavernomas. In IX Congreso De la Sociedad Espanola De Radiocirurgía, Alicante, Spain, 18.-20.11.2004.*
- Liščák, R.  
*Outpatient cerebral gamma knife radiosurgery in Munich: European standards and perspectives – status 2004. In Gamma knife radiosurgery for skull base Meningiomas, Munich, 27.3.2004.*
- Liščák, R.  
*The Prague experience of gamma knife radiosurgery with focus on skull base meningiomas. In Leksell gamma knife C training program, Stockholm, 29.3.-2.4.2004.*
- Liščák, R.  
*Gamma knife radiosurgery of brain cavernomas. In 12th International Meeting of the Leksell Gamma Knife Society, Vienna, 18.5.2004.*
- Liščák, R.  
*Repeated gamma knife radiosurgery. In 12th International Meeting of the Leksell Gamma Knife Society, Vienna, 20.5.2004.*
- Liščák, R.  
*Leksell gamma knife radiosurgery in 10 million population of Czech Republic. Belarus oncological congress, Minsk, 27.5.2004.*
- Michálek, P., Černá, J., Ščigel, V.  
*The efficacy of superior cervical sympathetic ganglion block. In burning mouth syndrome and stomatodynia. In 29th Annual Spring Meeting of AQSRA, Orlando (FL, USA), March 2004 (abstract: [www.asra.com](http://www.asra.com)).*
- Michálek, P., Jurenka, B., Stern, M., Vopálka, R., Klika, T., Šebesta, P.  
*Haemodynamic management of an atrio-femoral bypass in thoracoabdominal aneurysm repair – the role of continuous cardiac output monitoring and transesophageal echocardiography. Commented Poster. In World Congress of Anesthesiologists, Paris (France), April 2004 (abstract: WCA CD-ROM, [www.wca2004.com](http://www.wca2004.com)).*
- Michálek, P., Dutka, P.  
*The efficacy of ganglion impar block in chronic non-malignant perineal pain. Commented poster. In World Congress of Anesthesiologists, Paris (France), April 2004 (abstract: WCA CD-ROM, [www.wca2004.com](http://www.wca2004.com)).*

- Michálek, P.  
*Local anesthesia for fiberoptic intubation. International Arena, Napoli (Italy), June 2004 (invited speaker).*
- Michálek, P.  
*Fiberoptic techniques in intensive care – indications and limits. In International Arena, Napoli (Italy), June 2004 (invited speaker).*
- Michálek, P.  
*Updates in vascular anesthesia. International Arena, Naples (Italy), June 2004 (invited speaker).*
- Michálek, P., Kolouch, P., Ticháček, D., Černý, Š., Benedík, J.  
*Monitoring and the choice of perioperative inotropic support during resynchronization therapy in failing myocardium. Cardiovascular Anaesthesia (Japan) 2004, 8, p. S250 (abstract).*
- Michálek, P., Kubricht, V., Stern, M., Šebesta, P., Šedivý, P.  
*Anaesthesia for reconstruction of aortic arch branches. Cardiovascular Anaesthesia (Japan) 2004, 8, p. S236 (abstract).*
- Niederle, P.  
*No comment. Case study. In 17th Internat. Conference in Echocardiography: Case Studies and Recent Advances (org.: Univ. of Alabama at Birmingham and Internat. Soc. of Cardiovasc. Ultrasound), New Orleans, Louisiana, 6.11.2004 (invited speaker).*
- Novotný, Jr. J., Novotný, J., Spěváček, V., Hrbáček, J., Dvořák, P., Čechák, T., Tlacháčová, D., Schmitt, M., Liščák, R., Tintěra, J., Vymazal, J.  
*Application of the Polymer-gel Dosimetry in the Stereotactic Radiosurgery Quality Control. In 9th Congress of the Spanish Radiosurgery Society, Alicante, Spain, 18.-20.11.2004 (invited speaker).*
- Novotný, Jr. J., Spěváček, V., Hrbáček, J., Judas, L., Novotný, J., Dvořák, P., Tlacháčová, D., Schmitt, M., Tintěra, J., Vymazal, J., Čechák, T., Michálek, J., Příkladný, M., Liščák, R.  
*Measurement of Relative Dose Distributions in Stereotactic Radiosurgery by the Polymer-gel Dosimeter. Kondziolka D.(ed). Radiosurgery, 5, p. 225-235, Basel, Karger, 2004.*
- Novotný, Jr. J., Novotný, J., Liščák, R., Spěváček, V., Hrbáček, J., Dvořák, P., Čechák, T., Schmitt, M., Tlacháčová, D., Tintěra, J., Vymazal, J., Vladyka, V.  
*Accuracy in ophthalmic radiosurgery with the Leksell gamma knife-eye fixation, imaging, dosimetry. In 12th International Meeting of the Leksell Gamma Knife Society, Vienna, Austria, 16.-20.5. 2004.*
- Pilbauer, J.  
*Radiosurgery for Uveal Melanomas. In 12th Meeting of the Leksell Gamma Knife Society, Vienna, Austria, May 2004.*
- Pilbauer, J.  
*Ultrasound Biomicroscopy (UBM) High Resolution Investigation in Glaucoma. 12th Meeting Leksell gamma knife society, Vienna, Austria, 18.5.2004.*
- Pilbauer, J.  
*Progress in Glaucoma Treatment Research: Experience in 102 Patients with Advanced Glaucoma Treated by Gamma Knife. 12th Meeting Leksell gamma knife society, Vienna, Austria, 18.5.2004.*
- Stern, M., Michálek, P., Kubricht, V., Štádler, P., Adamec, M., Janoušek, L.  
*Cardiovascular complications related to regional anesthesia in carotid endarterectomy – a comparison of cervical epidural and cervical plexus block. Commented poster. Annual Congress of Society of Cardiovascular Anesthesiologists, Honolulu IHA, USA, April 2004 (abstract: Anesthesia and Analgesia, www.scahg.org).*

- Svoboda, L.  
*Sport and rehabilitation in Czech dialysis patients. In WTGF Games, Bormio, 24.1.2004.*
- Svoboda, L.  
*Risk prevention in Dialysis Practice: Increasing Patient safety. FMC Conference, Bojnice, Slovakia. 20.9.2004.*
- Šebesta, P., Šedivý, P., Klika, T., Zdráhal, P., Czinner, P., Štádler, P., Kořisková, Z., Borůvka, V., Mach, T.  
*Surgical treatment of central occlusion of the aortic arch - ten years of experience. VIIIth Slovak Congress of Vascular Surgery with foreign participation, Bratislava, 27th-28th May 2004.*
- Šebesta, P., Šedivý, P., Michálek, P. et al.  
*Left heart bypass during symptomatic AAA resection in an octogenarian with a failing heart. A case report. Commented poster. In 53rd. International Congress of the European Society for Cardiovascular Surgery, Ljubljana, Slovenia, 2.-5.6.2004 (abstracts: European Journal of Cardiovascular Surgery).*
- Šedivý, P., Šebesta, P., Klika, T. et al.  
*Our experience with surgical treatment of central occlusive disease of aortic arch branches over the ten years period. In 53rd International Congress of the European Society for Cardiovascular Surgery, Ljubljana, Slovenia, 2.-5.6.2004 (abstracts: European Journal of Cardiovascular Surgery).*
- Šimonová, G.  
*The gamma knife treatment of advanced glaucoma – Toxicity evaluation. In 2nd ESTRO Meeting on Radiotherapy for Non-malignant diseases, Nice, 1.4.2004.*
- Šimonová, G.  
*Advanced glaucoma treated by Leksell gamma knife: Toxicity evaluation. 12th Meeting Leksell gamma knife society, Vienna, Austria, 18.5.2004.*
- Šimonová, G.  
*Treatment of low grade gliomas by Leksell gamma knife. 12th Meeting Leksell gamma knife society, Vienna, Austria, 18.5.2004.*
- Šimonová, G.  
*Leksell Gamma Knife in the Treatment of Large Volume Metastases. European meeting of Leksell Gamma Knife User Society, Stockholm, Sweden, 26.-28.11.2004.*
- Šimonová, G., Liščák, R., Novotný, Jr. J.  
*Treatment of large metastases by the LGK. In 10th Annual Meeting of the Leksell Gamma Knife User Society, Stockholm, Sweden, 26.-27.11.2004.*
- Štádler, P., Špaček, M., Matouš, P., Kořisková, Z., Šedivý, P., Šebesta, P.  
*The short term experience in the use of new technique: Total Laparoscopic Bypass Surgery and Minimal Incision Aortic Surgery. International endovascular laparoscopy congress, Quebec, 20.-22.5.2004.*
- Štádler, P., Dion, Y.M., Thaveau, F., Ben, El Kadi  
*History of laparoscopy. In International Laparoscopic Vascular Course, Quebec City, 22.-23.10.2004.*
- Štádler, P., Dion, Y.M., Thaveau, F., Ben, El Kadi  
*The pneumoperitoneum. In International Laparoscopic Vascular Course, Quebec City, 22.-23.10.2004.*
- Štádler, P., Špaček, M., Matouš, P., Vitásek, P., Kořisková, Z.  
*Laparoscopic vascular reconstruction. Initial experience. In International Laparoscopic Vascular Course, Quebec City, 22.-23.10.2004.*
- Táborský, L., Adam, P., Řihová, E., Sobek, O.  
*Primary intraocular lymphomas. In Clin. Chem. Lab. Med., 42, 2004, 9, p. A 96.*



- Táborský, L., Adam, P., Sobek, O., Dvořáková, J., Dubská, L.  
*CSF cytological findings in Cryptococcus meningitis. In Clin Chem Lab Med, 2004, 42/9, p. A 66.*
- Táborský, L., Adam, P., Sobek, O.  
*CSF Cytological findings in Cryptococcus Meningitis., In Clin. Biochem. Metab., 12. (33), 204, p.262.*
- Táborský, L., Adam, P., Sobek, O., Maťoška, V.  
*Perspektivy dalšího rozvoje v likvorologii. In Orolinov Memorial a Petržalské Neurologické dni, Bratislava 4/2004.*
- Tlacháčová, D.  
*Comparison of the Leksell Gamma Knife Model C with the Automatic Positioning System and Model B. 12th Meeting of the Leksell Gamma Knife Society, Vienna, Austria, May 2004.*
- Urgošík, D.  
*Treatment of Essential Trigeminal Neuralgia with the Gamma Knife. In 12th Meeting of the Leksell Gamma Knife Society, Vienna, Austria, May 2004.*
- Urgošík, D.  
*Deep brain stimulation in Parkinson's disease. In DBS symposium, Riga, Latvia, 21.-23.4.2004.*
- Urgošík, D.  
*Deep brain stimulation – technical aspects. In DBS symposium, Riga, Latvia, 21.-23.4.2004.*
- Urgošík, D.  
*Stereotactic target localization using magnetic resonance imaging. In XIVth congress of the european society for stereotactic and functional neurosurgery. Vienna, Austria, 23.-26.6.2004.*
- Vodičková, M., Táborský, L., Pejznochová, H., Dubská, L., Dvořáková, J.  
*Remote control of POCT analyzers. In Clin Chem Lab Med, 2004, 42/9, Adria/Swissmedlab, p. A 81.*
- Vojtěch, Z., Vladyka, V., Liščák, R., Kalina, M., Novotný, J.  
*Use of radiosurgery for the treatment of mesial temporal lobe epilepsy. In 6th European Congress on Epileptology, Vienna, 30.5.-3.6.2004.*
- Votrubová, J., Jarůšková, M., Bělohávek, O., Fenc, P.  
*The role of 18F-2-fluoro-2-deoxyglucose PET/CT in the detection of local recurrence of colorectal cancer. Abstract No. SS7.06. In European Radiology, 2004, vol. 14, supplement 6, p. N28, ESGAR-Geneva.*
- Votrubová, J., Jarůšková, M.  
*PET/CT diagnostics of recurrence of colorectal carcinoma after the curative surgery. In 12th Czech-Austrian Symposium, České Budějovice 16.-17.4.2004.*
- Votrubová, J.  
*PET/CT. Intensivkurs Computertomographie. Akademie für Fort- und Weiterbildung in der Radiologie. Chemnitz 2004 (invited speaker).*
- Votrubová, J., Jarůšková, M., Bělohávek, O., Fenc, P.  
*The role of FDG PET/CT in detection of local recurrence of colorectal cancer. In 12th United European Gastroenterology Week Prague 2004 Abstract in: Gut, 2004, 53, suppl.VI, p.A60 (invited speaker).*

## ■ Domestic publications

### Monography:

- Vojtěch, Z.  
*EEG v epileptologii dospělých. Praha: Grada, 2004. 724 s.*
- Dbalý, V.  
*Epileptochirurgie dospělých. Praha: Grada, 2004. 168 s.*
- Schejbalová, M., Niederle, P.  
*Chronické srdeční selhání. Praha: Triton, 2004. 44 s.*

### Articles:

- Adam, P., Sobek, O., Táborský, L.  
*Izoelektrická fokuzace. Klin. Biochem. Metab., 2004, 33, s. 260–261.*
- Bělohávek, O., Fencel, P.  
*Hybridní zobrazování výpočetní a pozitronovou emisní tomografií. Inter. Med. pro Praxi, 2004, 6, s. 61–63.*
- Beneš, P.  
*Výživa v onkologii. In Wilhelm, Zd. a kol.: Výživa v onkologii. Brno: NCO NZO, 2004, s. 135–139.*
- Čáp, P., Pehal, F.  
*Vyšetření kondenzátu vydechaného vzduchu u nemocných astmatem a chronickou obstrukční plicní nemocí. Čas. Léč. čes., 2004, 143, s. 742–746.*
- Čáp, P.  
*Význam měření oxidu dusnatého u nemocných astmatem. Čas. Léč. Čes., 2004, 143, s. 381–384.*
- Drugová, B., Silber, J., Kapounek, A., Kapounek, B., Wimmer, T., Druga, R.  
*Magnetická rezonance v diagnostice traumat měkkých tkání a skeletu kolenního kloubu. Čes. radiol., 2004, 58, s. 56–64.*
- Dvořáková, J., Hyánek, J., Táborský, L., Martínková, V.  
*Perspektivy stanovení homocysteinu jako jednoho z laboratorních markerů v diagnostice aterosklerózy. Diabet. Metab. Endokrin. Výž., 2004, 7, suppl., s. 29–30.*
- Helmichová, E.  
*Kolorektální karcinom perspektivy systémové léčby. Sanquis, 2004, č. 36, s. 26.*
- Hyánek, J., Matoušková, J., Kmoníček, P. et al.  
*Hyperhomocysteinemie z deficitu vitamínu B12 nalezené selektivním screeningem u pacientů s Q-.infarktem, embolií plicnice a hlubokou žilní trombózou. Cor et Vasa, 2004, 46, s. 440–445.*
- Hyánek, J., Šebesta, P., Klika, J. et al.  
*Hladina hyperhomocysteinemie u pacientů s cévní obstrukcí nekoreluje se stenózou karotid. Klin. Biochem. Metab., 2004, 12, s. 139–144.*
- Chrobok, J., Suchomel, P., Štulík, J., Klézl, Z., Lukáš, R., Krbec, M., Magerl, F.  
*Transartikulární fixace C1 – C2: multicentrická retrospektivní studie. Acta chir. orthop. traumatol. čechosl., 2004, 71, s. 6–12.*

- Jindrák, V.  
*Mikrobiologické podklady pro cílenou antimikrobiální léčbu komunitních respiračních infekcí. Listy reviz. lék., 2004, 3, s. 45–47.*
- Jindrák, V.  
*Specifické aspekty používání antibiotik v intenzivní péči. In Ševčík, P., Skříčková, J., Šrámek, V.: Záněty plic v intenzivní medicíně. Praha: Galén, 2004.*
- Jindrák, V.  
*Přístupy k antibiotické léčbě pneumonie u kriticky nemocných. In Ševčík, P., Skříčková, J., Šrámek, V.: Záněty plic v intenzivní medicíně. Praha: Galén, 2004.*
- Jindrák, V., Votava, M.  
*Úvodní antibiotická léčba zánětů plic – kritéria pro volbu antibiotik. In Ševčík, P., Skříčková, J., Šrámek, V.: Záněty plic v intenzivní medicíně. Praha: Galén, 2004.*
- Jindrák, V., Votava, M.  
*Cílená antibiotická léčba bakteriálních zánětů plic a problémy bakteriální rezistence. In Ševčík, P., Skříčková, J., Šrámek, V.: Záněty plic v intenzivní medicíně. Praha: Galén, 2004.*
- Jindrák, V.  
*Metoda auditu při ovlivňování kvality používání antibiotik. Postgrad. Med., 2004, 5, s. S12–S19.*
- Kábrt, J.  
*Syndrom krátkého střeva a jeho léčba. In Kohout, P. a kol.: Výživa u pacientů s idiopatickými střevními záněty. Praha: Maxdorf, 2004, s. 125–133.*
- Kalina, M.  
*Akutní stavy v neurologii. In Ambler, Z., Bednařík, J., Růžička, E. et al. Klinická neurologie. Praha: Triton, 2004, s. 877–902.*
- Kalina, M., Kočvarová, J.  
*Epilepsie parietálního laloku. In Brázdil, M., Hadač, J., Marusič, P. et al.: Farmakorezistentní epilepsie. Praha: Triton, 2004, s. 48–53.*
- Kutálková, D.  
*Dětská řeč a civilizace. In sborník Česká logopedie 03. Praha: Makropulos, 2004, s. 13–26.*
- Liščák, R., Vladyka, V., Marek, J.  
*Uplatnění radiochirurgie v léčbě adenomu hypofýzy. Prakt. Lék., 2004, 84, s. 133–139.*
- Malíková, H., Vondrys, D., Benešová, M., Černý, Š., Vymazal, J.  
*Pseudoaneuryzma či aneuryzma levé komory? Zobrazení magnetickou rezonancí. Kasuastika. Čes. radiol., 2004, 58, s. 99–102.*
- Mandysová, E.  
*Tkáňová dopplerovská echokardiografie v resynchronizační léčbě srdečního selhání. Kardiol. Revue, 2004, mimoř. vyd., s. 12–16.*
- Mareš, K.  
*Deficit vitamínů a stopových prvků u ISZ. In Kohout, P. a kol.: Výživa u pacientů s idiopatickými střevními záněty. Praha: Maxdorf, 2004, s. 66–75.*
- Michálek, P.  
*Lokální anestezie v léčbě orofaciální bolesti. In Ščigel, V.: Lokální anestezie v praxi zubního lékaře. Praha: Quintessenz, 2004, s. 143–151.*
- Michálek, P., Stern, M., Šoupal, J., Kubricht, V., Švec, M., Šebesta, P., Šedivý, P., Adamec, M., Tošenovský, P., Janoušek, L.  
*Kardiovaskulární komplikace u operací na krčních tepnách v regionální anestezii – srovnání cervikálního bloku a epidurální anestezie. Anest. intenziv. med., 2004, 15, s. 64–68.*

- Michálek, P.  
*Levosimendan a jeho místo v léčbě srdečního selhání. Anest. intenziv. Med., 2004, 15, s. 147–151.*
- Michálek, P., Černý, Š., Klika, T., Šoupal, J., Stern, M., Jehlička, P.  
*Současná revaskularizace myokardu a náhrada aneuryzmatu břišní aorty. Anest. intenziv. Med., 2004, 15, s. 28–31.*
- Michálek, P., Vrba, I., Mareš, K.  
*Radiofrekvenční termolýze splanchnických nervů u pacienta s karcinomem pankreatu – kazuistika. Bolest, 2004, 7, s. 106–109.*
- Neužil, P., Reddy, V., Táborský, M., Šedivá, L., Vopálka, R., Petrů, J., Gross, D., Královec, Š., Niederle, P.  
*Katetrizační radiofrekvenční ablace fibrilace síní prováděná za podpory elektroanatomického mapování. Cor et Vasa, 2004, 46.*
- Neužil, P., Táborský, M., Šedivá, L.  
*Prognostický dopad resynchronizační terapie. Kardiol. Rev., 2004, 4, s. 39–42.*
- Neužil, P., Táborský, M., Šedivá, L., Niederle, P.  
*Léčba fibrilace síní – jasný cíl s dosud nejasným řešením. Prakt. lék., 2004, 84, s. 330–333.*
- Neužil, P., Táborský, M., Šedivá, L., Vopálka, R., Královec, Š., Gross, D., Petrů, J.  
*Katetrizační kryoablace nemocných s ismus dependentním flutterem síní. Interv. akut. Kardiol., 2004, 3, s. A19.*
- Neužil, P., Táborský, M., Šedivá, L., Vopálka, R., Petrů, J., Kupec, J., Královec, Š., Gross, D.  
*Dlouhodobý efekt katetrizační ablace komorových tachykardií po prodělaném infarktu myokardu. Interv. akut. Kardiol., 2004, 3, s. A19.*
- Neužil, P., Táborský, M., Šedivá, L., Gross, D., Petrů, J., Královec, Š., Vopálka, R.  
*Využití anatomického mapovacího systému Localisa u nemocných s typickým flutterem síní. Interv. akut. kardiol., 2004, 3, s. A20.*
- Neužil, P., Černý, Š., Táborský, M., Ticháček, L., Šedivá, L., Skalský, I., Benešová, M., Gross, D.  
*Modifikovaná Kryo-MAZE procedura jako kurativní léčba fibrilace síní u nemocných se strukturálním postižením srdce. Interv. akut. Kardiol., 2004, 3.*
- Neužil, P., Táborský, M., Reddy, V., Malchano, Z., Šedivá, L., Petrů, J., Královec, Š., Gross, D., Vopálka, R.  
*3D navigovaná RF ablace nemocných s fibrilací síní. Cor et Vasa, 2004, 46, Suppl., s. 64.*
- Neužil, P., Táborský, M.  
*Současný pohled na perkutánní epikardiální mapování a ablace komorových tachykardií u nemocných po prodělaném infarktu myokardu. Cor et Vasa, 2004, 46, s. 479–483.*
- Niederle, P.  
*Pokroky v kardiologických technikách v uplynulém desetiletí. Cor et Vasa, 2004, 46, s. 63–64.*
- Novotná, M.  
*PET/CT – hybridní zobrazovací systém. Prakt. radiol., 2004, 9, s. 6–8.*
- Paďour, M., Ouhrabková, R., Formánek, P., Kmoníček, P., Niederle, P.  
*Direktní PCI u pacientky s dextrokardií. Interv. akut. kardiol., 2004, 3, s. 92–93.*
- Petrů, V.  
*Léčebné a preventivní postupy u pacientů trpících sezónní alergickou rýmou. Med. pro prom., 2004, 5, s. 81–86.*

- Petrů, V.  
*Alergická rinitida. Practicus, 2004, 3, s. 64–67.*
- Petrů, V.  
*Vývoj alergie v průběhu života, prognóza a prevence. In Špičák, V., Panzner, V.: Alergologie. Praha: Galén, 2004.*
- Petrů, V.  
*Diagnostika alergických onemocnění. Postgrad. Med., 2004, 6, s. 521–526.*
- Petrů, V., Vorlíček, J.  
*Alergologická ambulantní praxe v České republice – část I. Alergie, 2004, 6, s. 207–215.*
- Petrů, V., Panzner, V., Bystroň, J., Špičák, V.  
*Léčba alergických onemocnění. In Špičák, V., Panzner, V. Alergologie. Praha: Galén, 2004.*
- Popelka, P.  
*Prevence elektrochirurgických poranění v laparoskopii. In Kontroverze a nové strategie v léčbě endometriózy: sborník přednášek 6. mezinárodního kongresu CSGE gynekologické laparoskopie a pánevní chirurgie, Praha 1.–3. 4. 2004.*
- Popelka, P.  
*Chirurgie retroperitonea. In Kontroverze a nové strategie v léčbě endometriózy: sborník přednášek 6. mezinárodního kongresu CSGE gynekologické laparoskopie a pánevní chirurgie, Praha 1.–3. 4. 2004.*
- Popelka, P.  
*Hluboká infiltrativní endometrióza – resekční techniky. In Kontroverze a nové strategie v léčbě endometriózy: sborník přednášek 6. mezinárodního kongresu CSGE gynekologické laparoskopie a pánevní chirurgie, Praha 1.–3.4.2004.*
- Popelka, P.  
*Operační technika u endometriózy rektovaginálního septa. In Kontroverze a nové strategie v léčbě endometriózy: sborník přednášek 6. mezinárodního kongresu CSGE gynekologické laparoskopie a pánevní chirurgie, Praha 1.–3. 4. 2004.*
- Průcha, M.  
*Genetické predispozice a sepse. In VI. Kardioanesteziologické vědecké dny s mezinárodní účastí: sborník přednášek, Praha 15.–17. 4. 2004. Praha: ECC servis, 2004.*
- Průcha, M., Maťoška, V.  
*Genetika a sepse – je důvod k optimismu? XI. dny intenzivní medicíny, Kroměříž 9.–11. 5. 2004. In Zazula, R.: Ročenka intenzivní medicíny 2004. Praha: Galén, 2004.*
- Sedláčková, L., Průcha, M., Dostál, L.  
*Quantibrite u pacientů se sepsí. In Sborník přednášek V. dnů průtokové cytometrie, Praha 19.–20. 4. 2004.*
- Stern, M., Michálek, P.  
*Transezofageální echokardiografie při perioperační monitoraci hemodynamiky. In Zazula, R.: Ročenka intenzivní medicíny 2004. Praha: Galén, 2004, s. 71–74.*
- Struppl, D.  
*Pánevní anatomie v laparoskopickém přístupu. In Kontroverze a nové strategie v léčbě endometriózy: sborník přednášek 6. mezinárodního kongresu CSGE gynekologické laparoskopie a pánevní chirurgie, Praha 1.–3. 4. 2004.*
- Struppl, D.  
*Environmentální faktory etiologie endometriózy. In Kontroverze a nové strategie v léčbě endometriózy: sborník přednášek 6. mezinárodního kongresu CSGE gynekologické laparoskopie a pánevní chirurgie, Praha 1.–3. 4. 2004.*

- Suchomel, P., Štulík, J., Klézl, Z., Chrobok, J., Lukáš, R., Krbec, M., Magerl, F.  
*Transartikulární fixace C1-C2: multicentrická retrospektivní studie. Acta chir. orthop. traumatol. čechosl., 2004, 71, s. 6–12.*
- Šebesta, P., Klika, T., Mach, T., Šedivý, P., Czinner, P., Zdráhal, P., Kořisková, Z., Michálek, P., Vitásek, P., Jindrák, V., Marek, J.  
*Aortitis bacterialis. Rozhl. Chir., 2004, 83, s. 209–216.*
- Šedivá, L., Neužil, P., Táborský, M., Petru, J., Niederle, P.  
*Záchyt maligní komorové tachyarytmie dlouhodobým implantabilním monitorem EKG (Reveal) u nemocné s podezřením na syndrom dlouhého QT. Prak. lék., 2004, 84, s. 19–22.*
- Šroubek, J., Černý, R., Bojar, M.  
Arteriální a žilní trombóza centrálního nervového systému. In Vojáček, J., Malý, M. a kol.: *Arteriální a žilní trombóza v klinické praxi.* Praha: Grada, 2004, s. 159–185.
- Štádl, P., Špaček, M., Matouš, P., Kořisková, Z.  
*Laparoskopicky vedený iliofemorální bypass. Kazuistika. Rozhl. Chir., 2004, 83, s. 308–310.*
- Štádl, P., Špaček, M., Matouš, P., Vitásek, P., Kořisková, Z., Michálek, P.  
*Laparoskopické cévní rekonstrukce – úvodní zkušenosti. Rozhl. chir., 2004, 83, s. 549–553.*
- Štádl, P., Šebesta, P., Klika, T., Šedivý, P., Michálek, P.  
*Minilaparotomie jako přístup k cévním rekonstrukcím v aortoilické oblasti. Rozhl. Chir., 2004, 83, s. 545–548.*
- Štádl, P., Kořisková, Z., Vitásek, P.  
*Komplexní léčba symptomatické nepravé výdutě distální anastomozy aorto-aortální náhrady a karcinomu pravé ledviny. Rozhl. Chir., 2004, 83, s. 168–170.*
- Štádl, P., Vitásek, P., Špaček, M.  
*Unusual treatment of bleeding from an injured common iliac vein. Cor et Vasa, 2004, 46, s. 503–504.*
- Šteinbachová, M., Průcha, M., Herold, I., Kavka, B.  
*Hodnocení aktivace lymfocytů sledováním exprese časného aktivačního antigenu CD69 průtokovou cytometrií u pacientů na JIP. Epidemiol. Mikrobiol. imunol., 2004, 53, s. 12–17.*
- Štětkářová, M., Chrobok, J.  
*Zadní krční foraminotomie: indikace u multisegmentální cervikální spondylózy. Čes. slov. neurol. neurochir., 2004, 67/100, s. 29–32.*
- Štětkářová, I., Chrobok, J.  
*Zadní krční foraminotomie – indikace u multisegmentální degenerativní stenózy. Čes. slov. neurol. neurochir., 2004, 67/100, s. 177–182.*
- Švec, M., Mach, T., Biebl, O.  
*Anesteziologický postup při endovaskulárním zavádění stentgraftu do výdutí břišní aorty. Anesteziol. intenziv. Med., 2004, 15, s. 11–16.*
- Táborský, M., Neužil, P., Mandysová, E., Šedivá, L., Niederle, P.  
*Klinický efekt srdeční resynchronizační terapie. Kardiolog. revue – mimoř. vyd., 2004, s. 28–32.*
- Táborský, M., Ticháček, L., Neužil, P., Černý, Š.  
*Kardiochirurgická implantace levokomorové elektrody u srdeční resynchronizační léčby. Interv. akut. kardiolog., 2004, 3, s. A23.*
- Táborský, M., Neužil, P., Šedivá, L., Vopálka, R.  
*Význam programované stimulace komor u nemocných indikovaných k srdeční resynchronizační léčbě bez předchozí anamnézy komorových arytmií. Interv. akut. Kardiolog., 2004, 3, s. A23.*

- Táborský, M., Neužil, P.  
*Současné postavení ICD v léčbě nemocných rizikových náhlou srdeční smrtí. Čas. Lék. čes., 2004, 143, s. 526–527.*
- Táborský, M., Neužil, P., Šedivá, L.  
*Účinek biventrikulární stimulace u nemocných se „širokým“ a „úzkým“ komplexem QRS. Cor et Vasa, 2004, 46, Suppl., s. 94.*
- Tintěra, J., Klener, J., Horáček, J., Španiel, F., Chabiniok, R., Kršek, P., Vymazal, J.  
*Funkční MR zobrazení mozkové aktivity při testu verbální fluence u pacientů s patologií levé hemisféry: součást předoperačního plánování. Čes. radiol., 2004, 58, č. 1.*
- Vojtěch, Z., Tomášek, M.  
*Epilepsie okcipitálního laloku. In Brázdil, M., Hadač, J., Marusič, P. et al.: Farmakorezistentní epilepsie. Praha: Triton, 2004, s. 57–61.*
- Vojtěch, Z., Hadač, J., Nešpor, E.  
*Diferenciální diagnostika epileptických a neepileptických záchvatů. In Brázdil, M., Hadač, J., Marusič, P. et al.: Farmakorezistentní epilepsie. Praha: Triton, 2004, s. 156–170.*
- Vojtěch, Z., Kalina, M.  
*Stereotaktická radiochirurgie. In Brázdil, M., Hadač, J., Marusič, P. et al.: Farmakorezistentní epilepsie. Praha: Triton, 2004, s. 206–213.*
- Vondryš, D., Malíková, H., Benešová, M. a kol.  
*Je magnetická rezonance nejlepší zobrazovací metodou při diagnostice pseudoaneuryzmatu levé komory srdeční? Kasuistika. Cor et Vasa, 2004, 46, suppl., s. 104.*
- Votrubová, J., Bělohávek, O.  
*Moderní zobrazovací metody – pozitronová emisní tomografie (PET) a pozitronová emisní tomografie kombinovaná s výpočetní tomografií (PET/CT). Prakt. lék., 2004, 84, s. 458–460.*
- Votrubová, J.  
*Co by měl praktický lékař vědět o hybridním zobrazování PET/CT. Bulletin Sdružení prakt. lék., 2004, 4, s. 13–15.*
- Votrubová, J., Fencel, P.  
*Hybridní zobrazování PET/CT. Čes. radiol., 2004, 58, s. 333–337.*
- Vrba, I.  
*Bolest jako terapeutický problém. Practicus, 2004, 3, s. 16–20.*
- Vrba, I., Barták, M., Kozák, J.  
*Periferní nervová stimulace. Bolest, 2004, 7, s. 16–20.*
- Vrba, I., Strouhalová, L.  
*Historie bolesti: teorie bolesti. Bolest, 2004, 7, s. 45–48.*
- Vrba, I.  
*Komentář k článku Systém „Červených praporek“ v diagnostice a terapii bolesti zad. Bolest, 2004, 7, Suppl.2, s. 27–31.*
- Vrba, I., Chrobok, J., Štětkářová, I.  
*Možnosti diagnostiky failed back surgery syndromu. Bolest, 2004, 7, s. 157–164.*
- Vrba, I., Chrobok, J., Štětkářová, I.  
*Možnosti léčby failed back surgery syndromu. Bolest, 2004, 7, s. 225–231.*
- Vrba, I.  
*Možnosti léčby chronické bolesti lékovými náplastovými formami. Bolest, 2004, 3, s. 151–156.*

- Vrba, I.  
*Historie chirurgie bolesti. Bolest, 2004, 3, s. 172–176.*
- Vrba, I., Kozák, J.  
*Možnosti léčby neuropatických bolestí neurostimulačními metodami. Neurologie pro praxi, 2004, 5, s. 271–273.*
- Vrba, I.  
*Adjuvantní analgetika v léčbě chronické bolesti. Medicína pro praxi, 2004, 5, s. 79–81.*
- Vrba, I.  
*Mechanismus a léčba neuropatické bolesti. Zpráva z kongresu – Bermudy 4.–6. 11. 2004. Bolest, 2004, 7, s. 246–247.*
- Vrba, I.  
*Historie faciální bolesti. Bolest, 2004, 7, s. 237–239.*
- Weichet, J., Neužil, P., Balák, J., Malíková, H.  
*Zobrazování plicních žil pomocí CT angiografie s trojdimenzionální rekonstrukcí dat. Čes. Radiol., 2004, 58, s. 378–382.*
- Zemanová, Z., Henyšová, J., Urbášková, P.  
*Záchyt kmene Yersinia enterocolitica 03 z hemokultury. Zprávy CEM, 2004, 1, s. 24.*



## TEACHING ACTIVITIES IN 2004

### Undergraduate teaching

The following specialized units from Na Homolce Hospital participated in the teaching of students from Charles University's Faculty of Medicine, the Faculty of Natural Sciences and the Faculty of Physical Education and Sport and the University of Southern Bohemia

Department of Neurology	CU 1st MF, CU 3rd MF
Department of Neurosurgery	CU 1st MF, CU 3rd MF
Department of Stereotactic and Radiation Neurosurgery	CU 3rd MF
Department of Cardiology	CU 3rd MF
Department of Cardiac surgery	CU 3rd MF
Department of Vascular Surgery	CU 2nd MF
Department of Internal Medicine	CU CU 3rd MF
Department of Surgery	CU 3rd MF
Department of Nephrology	CU 2nd MF, FPES
Department of ENT	CU 2nd MF
Department of AR	CU 3rd MF
Department of Radiodiagnostics	CU 1st MF, CU 3rd MF, USB
Department of Nuclear Medicine/PET Center	CU1st MF, CU 3rd MF
Department of Clinical Microbiology	CU 1st MF, CU 2nd MF, FNS

### Post graduate teaching with the Institute for Post Graduate Studies

The following specialized units from Na Homolce Hospital participated in the post graduate teaching of physicians and nursing through the IPGS

Department of Neurology	Acute neurology Neurological intensive care Epileptology
Department of Neurosurgery	Neurotraumatology Neurooncology
Department of Stereotactic and Radiation Neurosurgery	Stereotactic neurosurgery
Department of Cardiology	Echocardiograms
Department of Vascular Surgery	Vascular surgery
Department of Surgery	Surgery

Department of Gynecology and minimally invasive surgery	Laparoscopic gynecology
Department of AR	Anesthesiology and Resuscitation Emergency medicine
Department of Radiodiagnostics	Neurology Radiology
Department of Nuclear Medicine/PET Center	Nuclear Medicine Nuclear Medicine Radiodiagnostics
Department of Clinical Biochemistry, Hematology and Allergology	Clinical Immunology Allergology Spinal fluid Urine sediments
Department of Clinical Microbiology	Clinical Microbiology Anesthesiology and Resuscitation Intensive medicine Neurology Infectious medicine Industrial medicine

## Other post graduate training

Managing Director's office, Finance Division	CU 1st MF, CU 3rd MF, CMC Graduate School of Business
----------------------------------------------	----------------------------------------------------------

## Other training and reference centers

Department of Neurosurgery	Center for navigational neurosurgery for CR and the countries of the eastern European region Center for dynamic stabilization of the spine (Bryan, Prestige) for CR and countries of the eastern European region
Department of Cardiology	Center for resynchronization treatment of heart failure (biventricular stimulation) for EU countries
Department of Surgery	Center for anal prolapse and hemorrhoid Long surgery for CR Center for ankle joint surgery Center for knee joint surgery Center for Orthopilot orthopedic navigation
Department of Clinical Biochemistry Hematology and Allergology	Reference laboratory for the system of external quality control in clinical biochemistry Reference laboratory for the system of external quality and control in spinal fluid

## Other training activities

Department of Surgery	Training of physicians for the International Health Medical Education Consortium
Department of Nuclear Medicine/PET Center	Training course for foreign experts and advisory activities for a model project run by the International Atomic Energy Agency (IAEA)
Department of Stereotactic and Radiation Neurosurgery	Training course for foreign experts at the International Atomic Energy Agency (IAEA) and Elekta

## Czech Medical Chamber accreditation for training in the physicians' lifetime training program

CMC accreditation has been awarded to specialized Na Homolce Hospital units in the following areas:

Allergology and Clinical Immunology  
 Anesthesiology and Resuscitation  
 Dermatovenerology  
 ENT  
 Epidemiology  
 Balneology and Physiotherapy  
 Gynecology and Obstetrics  
 Surgery  
 Internal Medicine  
 Medical Microbiology  
 Cardiology  
 Cardiac Surgery  
 Clinical Biochemistry  
 Neurology  
 Neurosurgery  
 Nuclear Medicine  
 Ophthalmology  
 Pathological Anatomy  
 Pediatrics  
 Radiodiagnostics



We treat our clients with respect –  
which enhances the prestige of our hospital.

We are constantly aware of the fact  
that we are providing a service for our clients.

We can satisfy the most demanding  
requirements of our patients at a level  
comparable to the best available in Europe  
and the world.

We always maintain a high standard of  
behavior and treat our clients as partners.

## Customer orientation

Patient Safety as a Priority	93
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## PATIENT SAFETY AS A PRIORITY

The accreditation of a health care facility sends out a signal that it not only complies with all the required standards covering the organization and provision of health care, but that it is also making planned efforts towards improvements in this area and a systematic reduction of risk for its patients and employees.

### Quality and Safety Committee

In 2004, Na Homolce Hospital launched a system to improve quality and safety within the framework of the accreditation process. Its goal is to minimize the human error factor in the process of providing health care. The entire system is based on the active identification of errors

and inadequacies in the organization and provision of care to the patients and the gradual introduction of programs to eliminate or improve them. Na Homolce has established 19 priority processes, which play an important role in the provision of quality and safe care to its patients.

### Examples of the processes monitored and their indicators

Key process	Indicator
Administration of medication	Number of errors in drug administration /1,000 days of treatment
Checking nosocomial infections	Number of blood supply infections /1,000 days of treatment
Monitoring patient satisfaction	Average level of satisfaction with outpatient waiting times (1 to 5)
Risk management	Number of patient falls /1,000 days of treatment

Dozens of indicators are being monitored in order to assess the level of all priority processes in the hospital and to ensure their safety. Since March 2004, the hospital has not only been following the number of falls by patients and detecting bedsores and infections, but also errors that have occurred in the administration of medication or serious failures in diagnostic or therapeutic procedures. Part of the monitoring system also covers the early discovery of errors (e.g. a patient being allergic to a given drug,

discovered just before the drug was administered), because these also need to be eliminated.

In September 2004, the Managing Director of Na Homolce Hospital established a Quality and Safety Committee. Doctors, nurses and administrative and technical personnel are all represented on this committee. The twenty-three member committee is interdisciplinary, which allows it to make a comprehensive evaluation of undesirable incidents that are reported and the

results of the quality indicators. The committee also channels suggestions from employees and comments relating to practices followed by individual units. On the basis of its analysis of the risks, it proposes remedial and preventive measures to the Na Homolce Hospital management. One of the main areas of care in an accredited hospital must be patient safety. One of the most important aspects of this is the unambiguous identification of patients and medical supplies. In June 2004, Na Homolce Hospital initiated a trial period when identification bracelets were used as proof of patient identity. Since November of this year all ward patients have been routinely issued with what is called a PID (Personal

Identification) - a plastic bracelet with a bar code which they wear on their wrists. This can be used not only to provide information about the patient's true identity, as well as to list any interventions that have been performed at the hospital or are due to be performed.

An important factor in reducing prescription errors has been the introduction of an integrated record of prescription and medication administered throughout the hospital. All drugs administered to ward patients are set out in standard format and always filed in the same folder in the medical records, in every hospital department.

## ■ Rights of patients and their families

An essential element in providing medical care in an accredited hospital is the patients' right to be informed in a comprehensible way of the nature of their illness and the proposed treatment, including details of any available alternatives and the likelihood of success of the treatment. A special directive drawn up in 2004 also provides a register of major diagnostic or therapeutic interventions which require the patient's written approval. Without this approval, the

intervention cannot be performed. Of course the patient has the right to refuse any proposed diagnostic or therapeutic intervention, again on the basis of written confirmation. Na Homolce Hospital also lays great emphasis on maintaining the confidentiality of all information concerning the state of health of its patient. On admission to hospital patients are always asked to provide the names of those people who can be informed of their state of health.



## RESPONSES TO QUESTIONNAIRES ON PATIENT SATISFACTION FROM 2000 TO 2004

*(on a scale of 1-5)*

### Admissions procedure

2000	2001	2002	2003	2004
1.12	1.12	1.13	1.12	1.12

### Staff attitude and willingness to help

2000	2001	2002	2003	2004
1.13	1.12	1.12	1.13	1.12

### Interest in the patient and his/her needs

2000	2001	2002	2003	2004
1.20	1.20	1.20	1.21	1.21

### Standard of care provided

2000	2001	2002	2003	2004
1.10	1.09	1.10	1.08	1.09

### Explanations given of the health disorder

2000	2001	2002	2003	2004
1.29	1.29	1.27	1.26	1.19

### Sufficient information provided on discharge

2000	2001	2002	2003	2004
1.27	1.25	1.22	1.23	1.19

## STATE-OF-THE-ART / UNIQUE MEDICAL INTERVENTIONS IN 2004

### ■ Plaato system

A new treatment method that prevents the development of strokes in patients suffering from a form of cardiac arrhythmia known as atrial fibrillation, and who do not tolerate anti-

coagulation therapy on a long-term basis. A self-expanding implant is delivered by catheter into the left atrial appendage, preventing the blood from coagulating and forming clots.

### ■ Stimulation treatment for angina pectoris

A new method of treatment for drug resistant angina pectoris, where a neurostimulator is implanted in the patient. This stimulates the

spinal cord, thereby suppressing the perception of pain.

### ■ Bi-ventricular cardiac stimulation

Non-pharmalogical treatment for advanced cardiac failure using an implanted cardioverter-defibrillator to synchronize both heart ventricles

to improve the heart's function and to reduce the symptoms of advanced cardiac failure.

### ■ Surgery for cardiac valve defects

In cases of cardiac valve stenosis, the surgical treatment almost always entails replacing the defective valves with a valve prosthesis, while

most cases of valvular insufficiency can be resolved by valvuloplasty.

### ■ Cryoablation for chronic atrial fibrillation

An operation that introduces special probes into the left atrium at temperatures of up to minus 150 degrees to freeze a line or border, which, after a certain period, changes into

fibrous tissue, thereby preventing the development of severe cardiac arrhythmia, or atrial fibrillation.

### ■ Laparoscopic arterial reconstruction

The Department of Vascular Surgery in Na Homolce Hospital is the largest center in the Czech Republic specializing in surgical treatment of vascular diseases. It is currently the only

unit performing demanding arterial reconstructions by laparoscopic, or minimally invasive methods.

## ■ Treatment of diseases of the aorta

Na Homolce Hospital is a specialized center for the treatment of diseases of or injuries to the largest artery in the human body – the aorta.

This includes aortal transections, aortal dissections, occlusions of the aorta and aortal aneurysms.

## ■ Intraarterial thrombolysis in acute cerebral vascular disease

The most up-to-date and a extremely effective method of treatment for strokes developed on the basis of occlusion of the cerebral vessels by blood clots – thrombi. When these occur, and using x-ray monitoring, physicians apply a

special substance, known as thrombolyticum, via a special microcatheter directly into the blood clot in the cerebral vessel, which the thrombolyticum disperses.

## ■ Endovascular treatment for cerebral aneurysms

A treatment for aneurysms of the cerebral vessels using detachable coil embolization. This entails the physicians using a catheter, under x-ray control, to introduce a special metallic coil

directly into the aneurysm in the cerebral vessel. A blood clot forms around it and obliterates the aneurysm.

## ■ Surgical treatment of epilepsy

This represents an effective treatment for drug resistant epileptics, or patients suffering from epilepsy who do not respond to drug treatment over the long term. The patient can undergo an

epileptosurgical operation at Na Homolce Hospital, to introduce vagal nerve stimulators or thermolesions, or they can be irradiated by Leksell gamma knife.

## ■ Leksell gamma knife treatment

The Leksell gamma knife is a device designed for the targeted irradiation treatment of cerebral diseases, most frequently anomalies of the cerebral vessels, brain tumors or certain functional diseases of the brain. Na Homolce Hospital is also the first center in the world to use the

device to treat advance ocular glaucoma. The Leksell gamma knife was purchased through a nationwide collection from the citizens of the then Czechoslovakia in 1992 and is the only one of its kind in the Czech Republic and the eastern European region.

## ■ Dynamic stabilization of the spine

This solves certain types of degenerative diseases of the cervical and lumbar areas of the spine, either by using artificial prostheses to replace the intervertebral disks, or by implanting

flexible systems to ensure the stability of the vertebra and enables movement to be maintained in the operated vertebral segments, with the potential for the disks to be regenerated.

## ■ Bariatric surgery

Surgical treatment for severe morbid obesity in patients who are unable to lose weight by conservative methods. Laparoscopic techniques are

used to apply an adjustable band to the stomach and to perform a mini-gastric bypass, this being a minimally invasive intervention.

## ■ Laparoscopic gynecological surgery

Minimally invasive surgical techniques, which are extremely sparing of the patient, covering radical oncolaparoscopic surgery, laparoscopic

reconstructive surgery of the urinogenital tract, hysteroscopic and laparoscopic reconstructions of congenital defects.

## ■ PET/CT examinations

Na Homolce Hospital's Department of Nuclear Medicine / PET Center is equipped with a hybrid PET/CT scanner, which combines positron emission tomography and computer tomography in

a single machine. This is currently the most up-to-date examination method for cancer diagnostics. The PET/CT scanner is the only one of its kind in the Czech Republic.

## PATIENT CLUBS IN 2004

### ■ Club for parents of children suffering from lipid disorders

This Club was established in 1995 through the Clinic for Metabolic Disorders in Na Homolce Hospital. It links families with children suffering from inherited disorders related to the metabolism of lipids, known as hypercholesterolemia. Patients who have inherited this disorder have increased levels of cholesterol in their blood, which gives rise to a high risk of cardiovascular diseases. Basic treatment for children suffering from this disorder involves following a controlled low-calorie diet, with medication prescribed for those patients who are worst affected. The Club is affiliated with the Association for the assistance of chronically ill children, and in 2004 its membership totaled 117. The Club is run primarily by medical volunteers and parents. Parents, doctors and dietary nurses work closely together to form good health habits in

families at risk, to provide information on health nutrition and suitable types of food products, as well as new discoveries concerning the treatment of hypercholesterolemia. The Club's traditional and popular activities include the publication of the club magazine, Cholesterol, organized water therapy exercises in the Na Homolce Hospital pool, day or weekend trips, and, most of all, the summer fitness camp, focusing on a low cholesterol diet and exercise. During the summer of 2004, children and their parents met for what was the eighth week-long therapeutic camp with a low-calorie diet in Sloup, Bohemia. The Club for parents of children suffering from lipid disorders plays an important part in preventing cardiovascular disease by encouraging good nutrition and eating habits as well as increased physical activity.

#### Contact details:

#### **Club for parents of children suffering from lipid disorders**

Clinic for Metabolic Disorders

Na Homolce Hospital

Roentgenova 2, 150 30 Prague 5

Tel.: 257 273 229

E-mail: vera.martinikova@homolka.cz

## ■ Klub AA Homolka

Klub AA Homolka was established by the Department of Pediatric Allergology and Clinical Immunology in Na Homolce in 1998. It brings together families with children suffering from allergies and asthma. Last year membership numbers rose to 130 (families), representing not only patients treated at Na Homolce, but also those from other units in Prague and elsewhere. The club's activities are diverse, ranging from the retrieval and circulation of information concerning individual allergic diseases, through the organization of discussions with experts for the parents, to the publication of the club magazine, Motýlek (Butterfly), which includes contri-

butions from the children themselves, or organizing entertaining and educational activities for the young patients. The most popular club event is the annual three-week trip to the sea for children with allergies, when they are accompanied by medical professionals. This is for school-age children suffering from atopic eczema, bronchial asthma, allergic rhinitis, immune disorders or repeated respiratory infections. Last year the children spent their therapeutic holiday on the Olympic Riviera in Greece. Club AA Homolka is a member of the Association for the assistance of chronically ill children.

### Contact details:

#### **Klub AA Homolka**

Dept. of Pediatric Allergology and Immunology

Na Homolce Hospital, Roentgenova 2, 150 30 Prague 5

Tel.: 257 272 017

## ■ Sports club for dialysis and transplant patients - Czech Sporting Association

The sports club for dialysis and transplant patients was established by the Hemodialysis Center at Na Homolce Hospital in 1995. It is a member of the Association of internally handicapped sportsmen and women and also a member of the WTGD and EDTPF international federations. Last year it united 197 active members and a number of supporters from throughout the Czech Republic. The club's activities are not confined to creating and promoting an integrated physiotherapy program for patients who have to rely on artificial kidney treatment, or those living with a transplanted kidney (the creation of education and reference materials for

the disabled, specialized lectures), but also extend into putting these ideas into practice. Examples of this are the organization of the annual winter and summer sporting competitions for dialysis and transplant patients. In 2004 the eleventh annual games were held in the Czech Republic. At the third European games for dialysis and transplant patients in Ljubljana, held under the auspices of the EDTSF, the Czech representation won 6 medals, while the Czech sportsmen and women brought back 4 medals last year from the 5th international games for transplant patients in Bormio, Italy, held under the auspices of the WTGF.

### Contact details:

#### **Sports club for dialysis and transplant patients**

Hemodialysis Center  
Na Homolce Hospital  
Roentgenova 2, 150 30 Prague 5  
Tel.: 257 272 220  
E-mail: lukas.svoboda@homolka.cz





Our long-term financial stability allows us to satisfy the needs of our clients, partners and employees.

Our future is being built on the personal development of our employees – it is a fundamental resource, ensuring a highly effective hospital.

## Economic stability

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Thanks to the high level of discipline, enthusiasm and hard work from all our employees, 2004 was a successful year for Na Homolce Hospital. The fact that, primarily the physicians, but also other medical personnel accepted truly difficult assignments as a matter of course is, in my view, deserving of our deepest appreciation.

Whether we want it or not, we have become used to the fact that money is the deciding factor for the successful performance of any organization, and hospitals are no exception. Even in health care, profits have ceased to be seen as unsuitable.

The increased efficiency of the hospital resulted in net profits of 62 million crowns for the last financial year. This is nearly three times as much as in 2003. Hospital salaries rose by 6 %, and by 8% for the nursing staff. Growth in activity led to an increase of 12% in income from the health care insurance companies. The Na Homolce Hospital management, together with officials from the Czech Ministry of Health and the hospital supervisory board, exercise strict control over the types of program these profits will be used to support. Traditionally they will be allocated to the development of medical technology in the hospital and to support employee motivation for the satisfactory performance of assigned tasks.

A further piece of good news in 2004 was the reduction in overhead costs. Year-on-year savings in hospital management and administrative costs exceeded 20 million crowns. The reverse was true of the cost of treating our patients - which is the hospital's primary vocation - which increased by 200 million crowns. Part of this money was certainly used in the preparation for compliance with JCI international accreditation standards, which required intensive efforts from the hospital last year. These will undoubtedly enable us to improve the quality of care and the safety of treatment for our patients.

The employee motivation system, based on simple and previously agreed indicators, has undoubtedly contributed to the hospital's internal customer orientation. These ensure that common sense will prevail in the management of the individual departments and over the hospital as a whole. Each decision is immediately projected into the operating finances and individual departments and divisions can draw on their "own" budgets.

2005 will be the year when a ceiling is placed on income from the health insurance companies. The recipe for economic stability is the maintenance of a high volume of very specialized care, while at the same time targeting reductions in our operating costs and the cost of medical supplies. By calculating real costs per patient we can retroactively assess the relation between each crown invested and the outcome of the treatment process (evidence based medicine). The result will be the maintenance of a high level of quality with commensurable costs.

Long-term stability allows Na Homolce Hospital's patients to access the latest tried and tested technologies. 2005 will prove no exception to this rule as we aim to open a Center of Robotic Surgery to perform operations that place the least possible burden on the patient.



Pavel Brůna, M.Sc.  
Director of Finance  
Na Homolce Hospital

## ECONOMIC INFORMATION 2004

### BALANCE SHEET in thousands of CZK

<b>ASSETS</b>	as of 12.31.2003	as of 12.31.2004
A. Fixed assets	1,743,276	1,690,370
1. Intangible fixed assets	35,900	52,096
2. Accumulated depreciation of intangible fixed assets	-24,461	-28,894
3. Tangible fixed assets	2,766,497	2,807,186
4. Accumulated depreciation of tangible fixed assets	-1,127,946	-1,233,304
5. Financial investments	93,286	93,286
B. Current assets	667,966	773,714
1. Inventory	50,479	51,467
2. Receivables	355,006	443,189
3. Financial assets	68,325	52,088
5. Temporary credit accounts	194,156	186,970
<b>TOTAL ASSETS</b>	<b>2,411,242</b>	<b>2,424,084</b>
<b>LIABILITIES</b>	as of 12.31.2003	as of 12.31.2004
C. Own resources	1,773,779	1,803,509
1. Property funds	1,775,460	1,722,549
2. Financial funds	-30,263	19,528
5. Net income	28,582	61,432
D. Other resources	637,463	620,575
1. Reserves	1,700	2,550
2. Long-term liabilities	214,930	154,173
3. Short-term liabilities	308,832	339,286
4. Bank credits	105,000	120,000
5. Temporary debit accounts	7,001	4,566
<b>TOTAL LIABILITIES</b>	<b>2,411,242</b>	<b>2,424,084</b>

PROFIT AND LOSS STATEMENT in thousands of CZK

as of December 31st 2004	
I. Revenue from merchandise	135,069
A. Cost of goods sold	113,854
Sales margin	21,216
II. Production	2,241,614
1. Revenue from own products and services	2,241,614
B. 1. Material and energy consumption	1,134,762
2. Services	167,220
Value added	939,632
III. Operating costs	5,313
C. Personnel expenses	735,409
1. Wages and salaries	515,327
2. Social security expenses	191,650
3. Social expenses	28,432
D. Taxes and fees	1,286
<b>GROSS OPERATING REVENUE</b>	<b>229,467</b>
E. Depreciation of tangible and intangible fixed assets	129,494
IV. Revenue from sales of tangible and intangible fixed assets and materials	67
F. Net book value of tangible and intangible fixed assets sold	591
Revenue from tangible and intangible fixed asset sales	-523
V. Accounting for reserves and accruals and deferrals	0
G. Additions to reserves and accruals and deferrals	850
Difference between accounted and additional reserves, accruals and deferrals	-850
VI. Revenue from sales of securities	0
H. Securities sold	0
VIII. Other revenue	65,210
I. Other operating expenses	93,131
J. Income tax	9,248
<b>PROFIT FOR THE CURRENT ACCOUNTING PERIOD</b>	<b>61,432</b>

■ Breakdown of costs by type in 2004

Material	46%
Energy	1%
Staff	30%
Depreciation	6%
Miscellaneous	17%

■ Breakdown of costs by unit in 2004

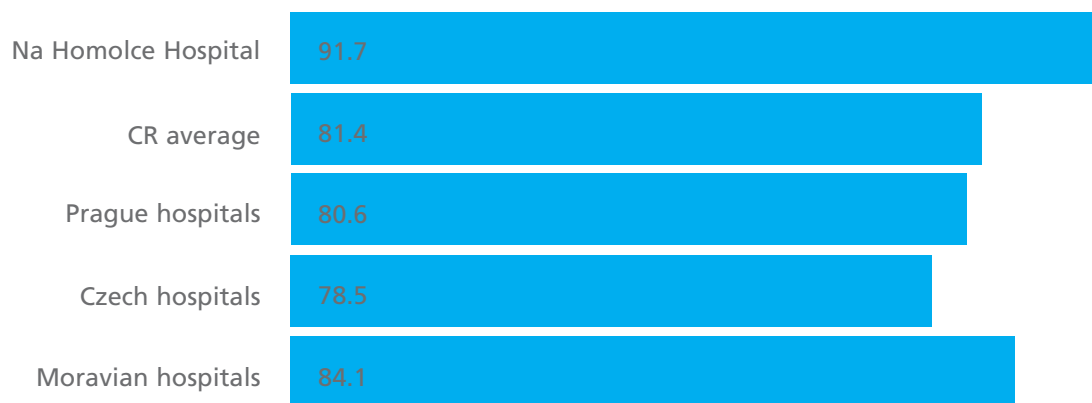
Health Care Sector	80%
Neuroprogram	10%
Cardiovascular program	36%
General Medical Care program	10%
Complementary Services	18%
Outpatient clinics outside the main programs	1%
Anesthesiology and Resuscitation program	4%
Sterilization	1%
Commercial Sector	5%
Health Care Commercial Department	1%
Pharmacy	3%
Rentals	1%
Administrative Sector	15%
Economy and management	9%
Technical and operational	6%

■ Breakdown of revenue in 2004

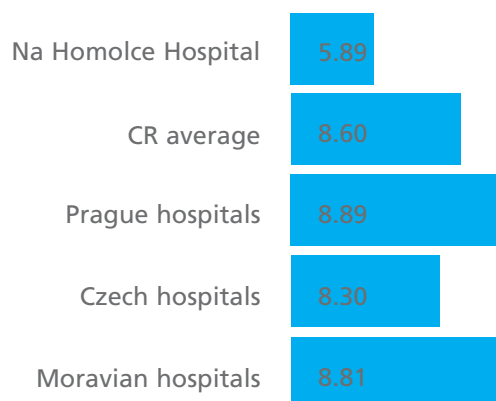
General Health Insurance Company	60%
Other health insurance companies	27%
Direct payments	3%
Miscellaneous revenue	10%

## NA HOMOLCE HOSPITAL BENCH MARKING 2004

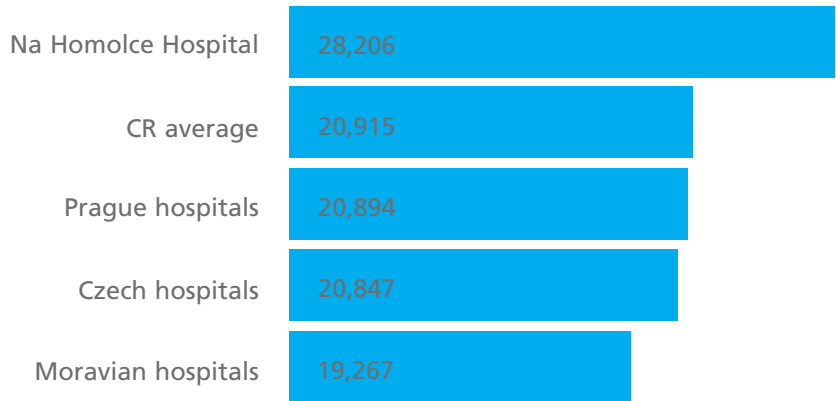
■ Bed occupancy rate (as a %)



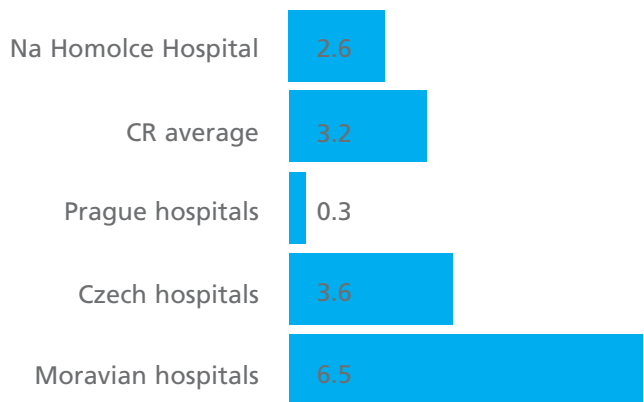
■ Average length of treatment (in days)



■ Average monthly salary (in CZK)

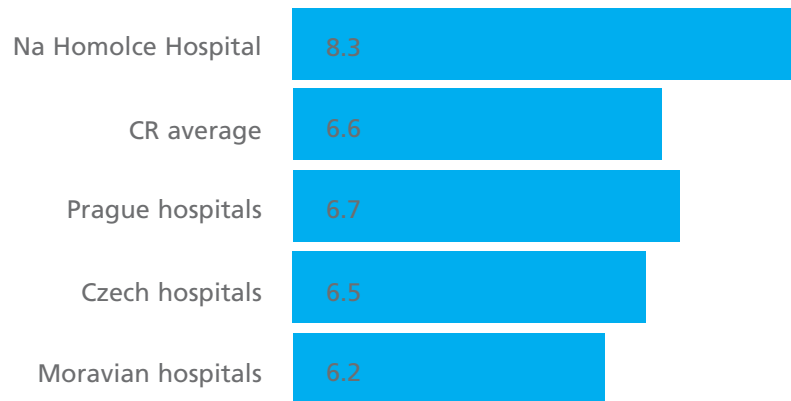


■ Cost effectiveness (as a %)

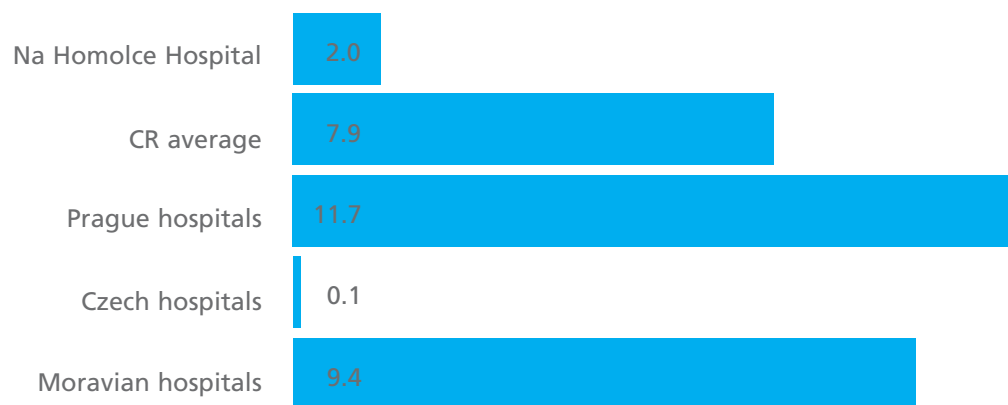




Overdue receivables as a percentage of total costs



Overdue payables as a percentage of total costs



## OPERATING EFFICIENCY

■ Costs and revenue from 2000 to 2004 (in millions of CZK)

	2000	2001	2002	2003	2004	difference 2004/2003
Costs	1,344	1,640	1,924	2,189	2,386	197
Revenue	1,397	1,665	1,982	2,218	2,456	238

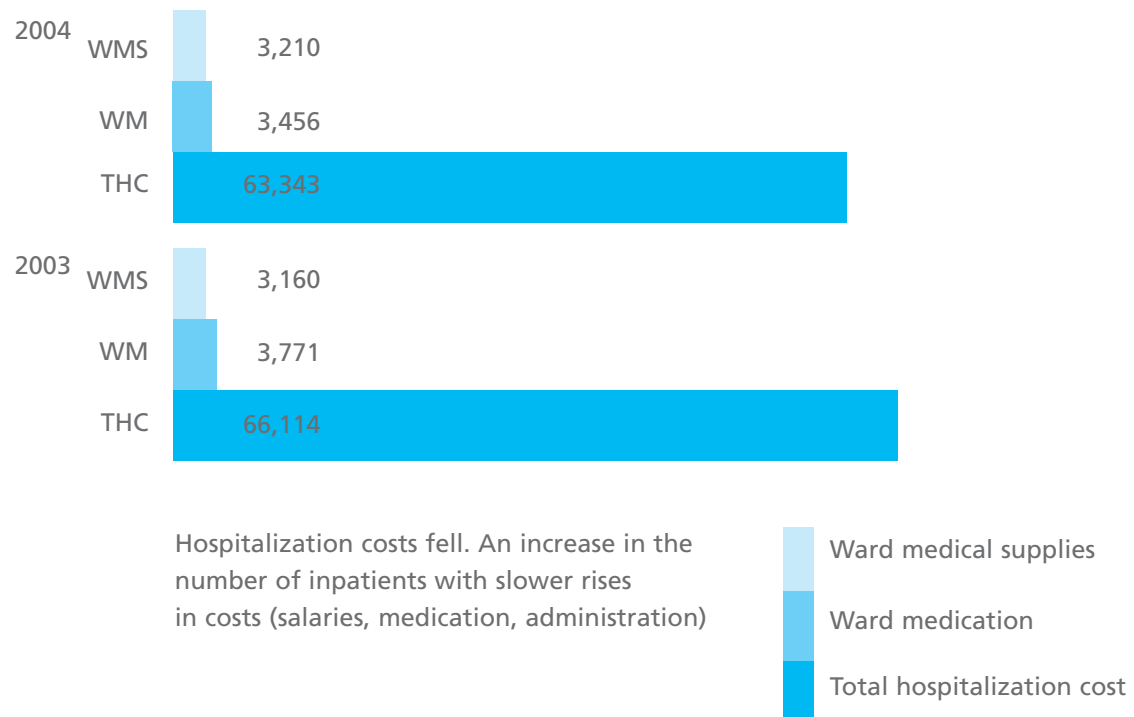
Revenue rose faster than costs by 2% in 2004.

■ Operating profits from 2000 to 2004 (as a %)

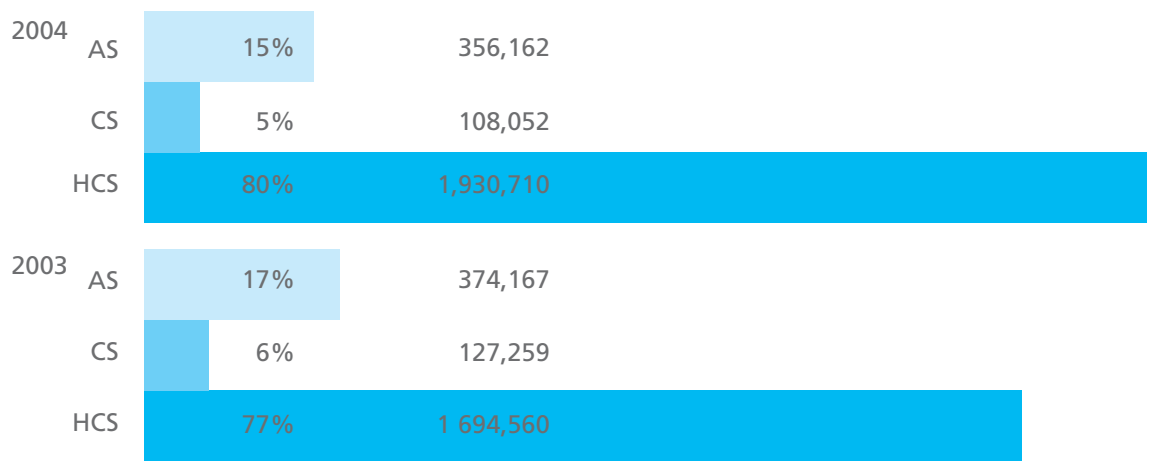
2000	2001	2002	2003	2004
3.95	1.56	3.03	1.31	2.57

Profitability rose by 1.26% in 2004 (profits were 41 million crowns higher).

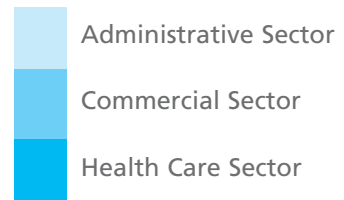
■ Year-on-year reduction in hospitalization costs (in CZK)



Management and operating overheads as a percentage of total costs in 2003 and 2004 (in thousands of CZK)



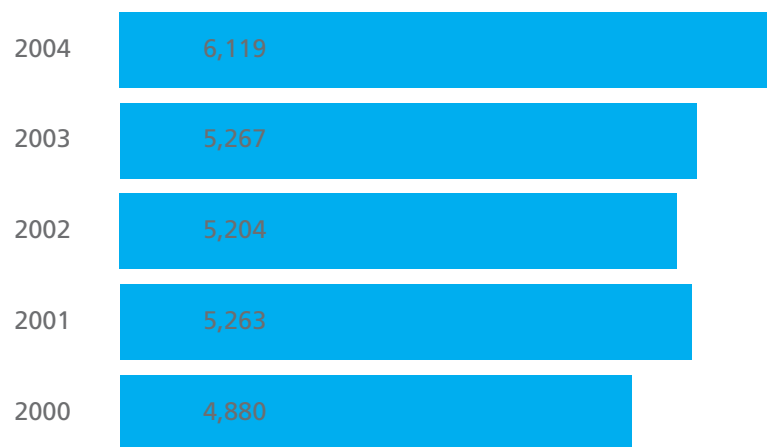
Overheads fell by 2% (18 million CZK)



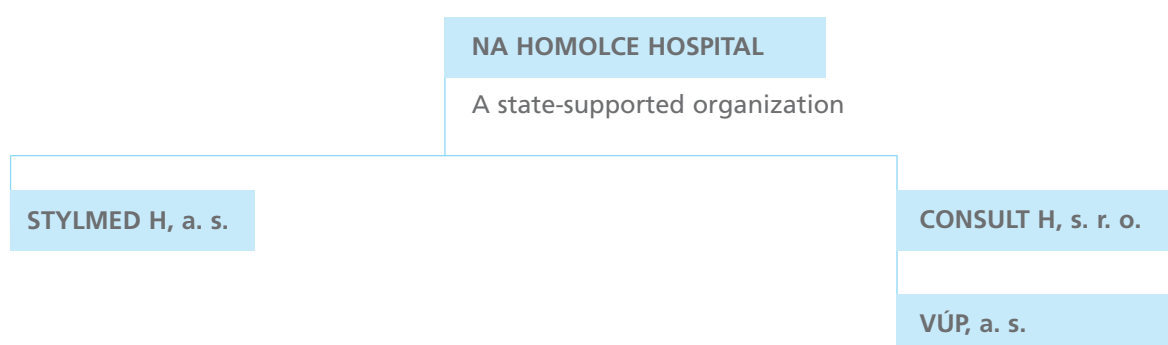
■ Intensity of work measured by the number of points per physician

	2000	2001	2002	2003	2004
Points (in thousands)	985,700	1,078,987	1,176,176	1,279,874	<b>1,468,495</b>
Physicians	202	205	226	243	<b>240</b>

Points per physician (in thousands)



## ECONOMIC STRUCTURE OF NA HOMOLCE HOSPITAL



### ■ Stylmed H, a. s.

Roentgenova 2, Praha 5

Date established: 7. 1. 1998

Ownership structure to December 31st, 2004: Na Homolce Hospital 70%  
Other shareholders 30%

Sphere of business: Distribution of health care appliances  
Distribution of pharmaceuticals

Stylmed H, a. s. was established for the purpose of combining purchases of health care materials and pharmaceuticals originally only for Na Homolce Hospital, but now for a group of customers from a series of health care facilities. Given the strong position of the primary supplier, the company guarantees its customers low prices

year-round through a number of discounts as well as reductions based on the volume of turnover.

Stylmed H performed all the tasks established for it by the majority shareholder in 2004.

Tasks for 2004		2004 Results
Increase in health care consumables	0%	-3.8%
Increase in separately charged consumables	0%	-1.1%
Operating costs as a percentage of the total	< 6.8%	4.1%
Pre-tax profits	> 5 mil. CZK	14.3 mil. CZK

A year-on-year comparison of a basket of consumables supplied to Na Homolce Hospital shows a 2.7% drop in prices in 2004 (representing

savings of around 10 million CZK). In addition to its share of the profits, the hospital received a bonus of 12 million CZK on turnover.

## ■ Consult H, s. r. o.

Roentgenova 2, Prague 5

Date established: June 20th, 1998

Ownership structure to December 31st, 2002: Na Homolce Hospital 100%

Sphere of business: Business, financial, organizational and economic advisory services

The company provides advisory services for the health care sector, mainly specializing in the area of legal forms and consulting for health care facilities undergoing restructuring, introducing controlling and implementing management control tools. Its goal is to be an organization that is systematically employed to solve problems for individual health care facilities or for a network of hospitals at the regional level.

It helps to provide quality, accessible and low cost health care. It organizes conferences and workshops dealing with the themes set out above.

It is also a service organization, holding shares in the Výzkumný ústav pletářský, a.s. in Brno. Consult H., s. r. o. reported profits for the 2004 financial year.

## ■ Výzkumný ústav pletářský, a. s.

Šujanovo nám. 3, Brno

Date established: March 20th, 1991

Ownership structure to December 31st, 2004: Consult H, s. r. o. 100%

Sphere of business: Research and development in knitting and ribbon-making methods and technologies, including non-woven textiles and health care products  
Production of medical supplies  
Production of textiles and textile products

In 2004 the company marketed and sold its products under the brand names METEA and KLIMATEX.

Under the brand name, METEA, the company produces unique medical textiles, particularly woven vascular prostheses. Last year its total production received CE certification. This reflects the fundamental improvement in the quality of its vascular prostheses to the level of the major global producers. Its turnover in this area was over 22 million crowns. A new market was found in Tunis while it continued to sell its products to Latin America.

The KLIMATEX product range covers special textiles with high added value, used to make functional clothing. Last year's turnover reached 39 million CZK. 1/3 more customers wore its functional clothing than in 2003.

Major customers of this brand include the SPORTISIMO chain of sports shops, the downhill ski and snowboard representatives, the Athens 2004 cycling team (twice Czech champions) and other important sporting personalities. The company reported profits of 5.7 million crowns for the 2004 financial year.









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