ANNUAL REPORT 2015

NA HOMOLCE HOSPITAL

Organization Accredited
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Introduction

This annual report provides comprehensive information about the financial management of the Na Homolce Hospital in 2015.

The fact that our hospital has recorded a profit in 2015 is a real achievement if we consider that it has been restructuring its finances, management and commercial activities (a hugely demanding process) and if we also take into account the fines imposed by administrative authorities for flawed financial management in 2008–2012 and the urgently needed facility and equipment modernization that was necessitated by low past investment.

Last year the hospital implemented far-reaching organizational changes: the activities of its filial companies, Holte, s. r. o., and Holte Medical, a. s., were re-integrated into the parent organization, and a number of important studies and analyses carried out that year enabled the management to decide e.g. on the future operation of the Homolka preschool centre and Homolka Premium Care, a.s. Accounting services have been insourced as of April 2015, a step that has saved the hospital dozens of millions of CZK. We have also launched a project aimed at improving the use of the Mánes spa house in Karlovy Vary and reducing its annual loss.

One of the truly important events of the year was the opening of a brand-new intensive care unit at the Neurology Department. The hospital also opened its own shop selling healthcare material.

Important changes in the technical operation of the hospital included newly-built air conditioning at the outpatient clinic and a successful optimization of our vehicle fleet. The installation of a steam generator and the purchase of two new sterilizers were among the major operating investments. We have likewise made first steps in developing our information and communication technologies.

The management of internal processes has also improved substantially. A new organizational structure has been created, with brand-new units that have greatly contributed to more efficient management. A key organizational change was the creation of the Commerce and Healthcare Sector, including the Purchasing Department, and the restructuring of the Public Procurement Department. Another important step was the creation of the departments of Security and Crisis Management, Internal Audit and Legal Services.

A new system was introduced for preparing the hospital investment plan, reports and strategic plan updates.

If last year was demanding, especially with regard to the restructuring of finance and commerce, 2016 brings no fewer challenges. This year, the main emphasis will be on a transparent liquidation of the filial companies and the streamlining of hospital processes. One of the particularly significant events planned for this year is the launch of a hybrid multidisciplinary operating theatre that will be equipped inter alia with a brand-new surgical robot.

I am aware that our success is underpinned above all by the unfailing professionalism of our healthcare staff, who have continued to perform at a very high level even while adjusting to all the demanding changes in hospital management. While continuing to fulfil our primary tasks of a healthcare provider, in the upcoming period we also want to focus on further restructuring of the hospital and on maximum efficiency in the use of financial resources. It is clear that such a task requires interest and involvement from all staff members, and I believe we can complete it successfully.

Indicators in all areas – the range of services, quality of care and economic efficiency – confirm that the Na Homolce Hospital is a stable provider of highly-specialized healthcare with good prospects for its future development in the Central European region.

Dr. Ing. Ivan Oliva
Director of the Hospital

Hospital management in 2015

Dr. Ing. Ivan Oliva
Director of the Hospital

Ing. Martin Dařílek
Deputy Director for Economic and Technical Administration

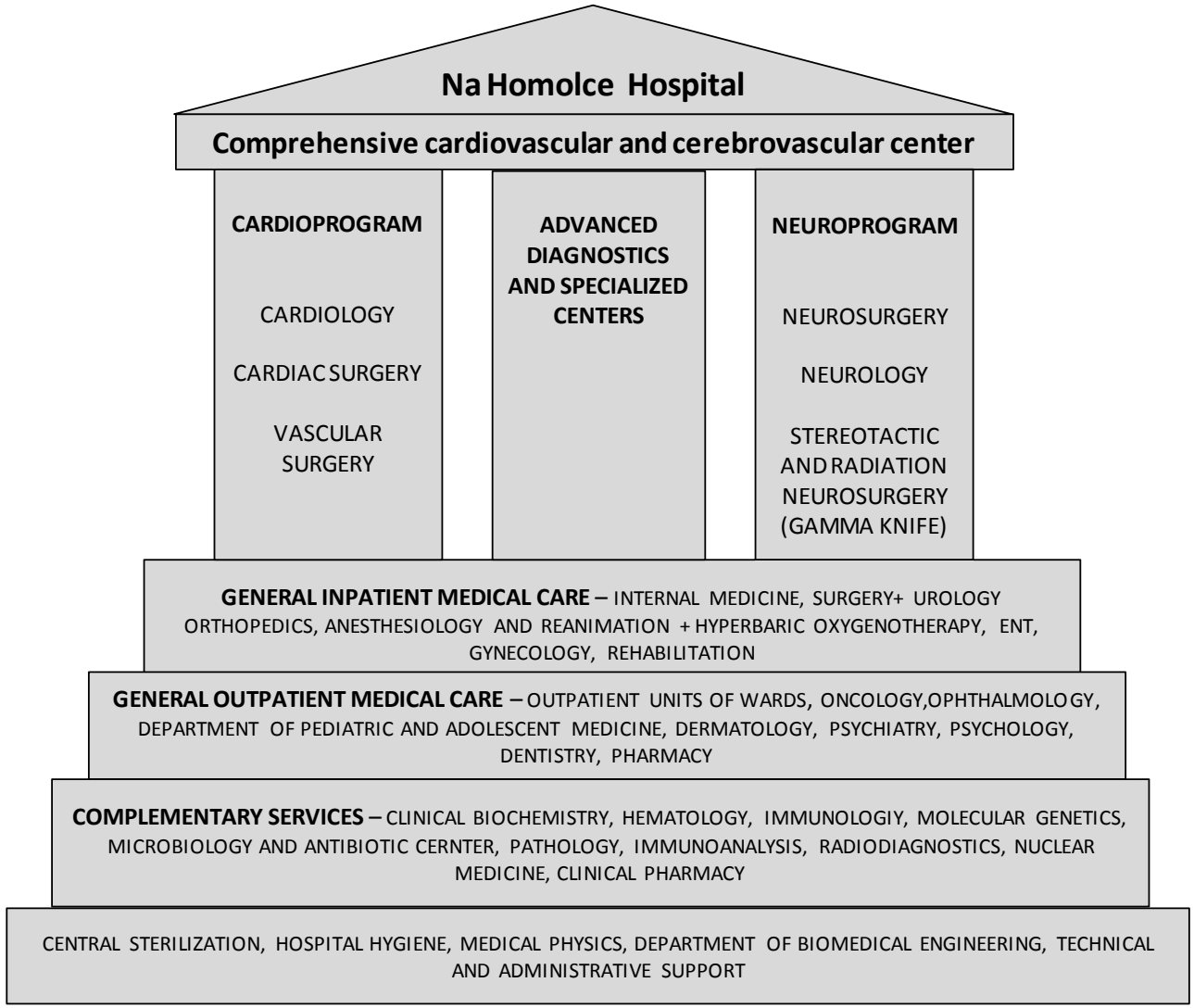
Zbyněk Fuksa, MD.
Deputy Director for Treatment and Preventive Care

Ing. Jaroslava Němcová, MBA
Deputy Director for Business and Medical Care

Michal Šetlík, MD.
Deputy Director for Innovation and Development

Eva Kuříková
Deputy for Nursing Care

Hospital Profile



Basic data

Number of emloyees	Number of beds	Number of admissions	Number of surgeries	Number of outpatient interventions
1 830	**357**	**20 530**	**14 261**	**1 212 843**

Data about personnel and wages for 2015

	Physicians	Pharmacists	General nursing staff	Other non-medical professionals	Other non-medical specialized professionals	Medical staff under professional supervision	Technical staff	Manual workers	Total
Wages paid, total (CZK)	298 092 039	9 577 368	334 273 728	50 900 612	30 611 764	62 986 350	108 866 502	41 991 710	**937 300 073**
Average FTE	278.03	14.44	749.81	110.30	60.33	211.27	245.27	160.15	**1829.60**
Average salary (CZK)	89 346	55 271	37 151	38 456	42 284	24 844	36 989	21 850	**42 691**

OUR ACTIVITIES

NEUROLOGICAL – NEUROSURGICAL PROGRAM

Department of Neurology

Head of Department: Miroslav Kalina, MD

Activities of the Department:

- Inpatient care of neurological patients
- Epilepsy Center with a complete epilepsy surgery program comprising an epilepsy monitoring unit (EMU) and an epilepsy counseling unit providing out-patient care for patients with epilepsy
- Neurovascular out-patient unit
- Transcranial Doppler ultrasonography
- Two electromyography laboratories using the method of EMG and somatosensory and motor evoked potentials
- Specialized laboratory for visual and auditory evoked potentials
- Two EEG laboratories
- Center for Sleep Disorders
- The neurological ICU covering the whole range of acute neurological conditions, with a focus on acute cerebrovascular diseases, is a key component of the Comprehensive Cerebrovascular Center

Organizational units of the Department

- **In-patient ward:** The Epilepsy Center with an Epilepsy Monitoring Unit (EMU) and a counseling unit provides its services within the Department of Neurology as a relatively independent unit managed by a physician and a nurse. The Department of Neurology also includes a fully accredited Center for Sleep Disorders with a sleep laboratory managed by Mr. Procházka, MD, for sleep monitoring by polygraph recording, with two monitored beds. It indicates patients for ENT interventions and mainly for CPAP and BiPAP therapy helping patients with sleep apnea syndrome.
- **Intensive Care Unit**
- **Outpatient department:** The outpatient section includes extrapyramidal counselling unit, an outpatient department focused on neuroimmunological diseases of the central nervous system, in particular multiple sclerosis; an outpatient unit for patients with cerebrovascular diseases; and an outpatient unit for patients with neuromuscular diseases.

Basic data

Number of physicians	**17**
Number of nursing staff	**47**
Number administrative staff	**2**
Total number of beds	**36**
Number of standard beds	**18**
Number of intensive beds	**12**
Number of EMU beds	**4**
Number of sleep laboratory beds	**2**
Occupancy rate of standard beds	**86.8 %**
Bed occupancy rate – ICU	**92.6 %**
Average treatment period	**5.1 days**
Average treatment period – standard care	**4.2 days**
Average treatment period – intensive care	**10.2 days**
Number of admissions	**1 478** (92% of year 2014)
Total number of outpatient examinations	**17 549** (98.4 % of year 2014)

The projected **production parameters** for admissions haven´t been met. This decrease was caused by ICU reconstruction underway from 1 October 2014 through 20 October 2015 while the production plan counted on its completion by 31 March 2015. The reconstruction also covered the inpatient unit and the epilepsy monitoring unit. Therefore, the production decrease was very pronounced; however, we even expected worse results. The ICU was moved to temporary premises with 4 beds, which did not allow caring for patients with lung ventilation.

The **total costs** were exceeded by CZK 1 704 249, the main reason being increased costs of related non-investment service and maintenance works and increased wage costs induced by the hospital founder. The costs of material, medical and healthcare products are stable.

Production	Projected	Actual	Fulfillment (%)	Actual vs. projected data
CaseMix for DRG alpha – domestic patients insured by other than the General Health Insurance Company	787	543	69	–244
CaseMix for DRG alpha – domestic patients insured by the General Health Insurance Company (111)	1 235	1 049	85	–186
Number of inpatients in CaseMix for DRG alpha – domestic patients insured by other than the General Health Insurance Company	595	540	91	–55
Number of inpatients in CaseMix for DRG alpha - domestic patients insured by the General Health Insurance Company (111)	934	837	90	–97
Scoring (number of points) for outpatient care total – domestic patients insured by other than the General Health Insurance Company	5 927 225	6 282 968	106	355 743
Scoring (number of points) for outpatient care total – domestic patients insured by the General Health Insurance Company	8 576 927	8 783 494	102	206 567
Total costs of the Department	**69 631 359**	**71 335 609**	**102**	**1 704 249**

DGR – diagnosis related groups

Performance overview

Inpatient admissions

The EMU admitted 192 patients, of which 10 patients were monitored by surgically implanted electrodes while 42 patients were indicated for epilepsy surgery, i.e. an open surgery or implantation of a vagal stimulator (12 implantations) or stereotactic thermolesion.
Other complicated cases continued to be treated in ICU. A total of 31 mechanical removals of endovascular thrombi and intra-arterial thrombolysis, and 51 intravenous thrombolysis procedures were carried out, which is a slight decrease as compared to 2014, due to the insufficient number of ICU beds. The ICU capacity, in particular for patients with acute ischemic stroke, remains significantly limited due to lack of beds, as well as due to absence of beds for chronic respiratory and follow-up care, which results in long-term hospitalization in the ICU. Inadequate number of intensive beds in the Comprehensive Cerebrovascular Centre does not allow treatment of more patients using sophisticated endovascular methods. In total, 79% of patients were admitted from Prague or Central Bohemian region and 21% from other regions of the Czech Republic. From 1 October 2014 to 20 October 2015, the operation of ICU was reduced to 4 beds due to reconstruction.

Outpatient examinations
The year-on-year comparison shows a significant increase in the number of outpatient examinations (105.2% as compared to 2014). A positive trend is a continuous increase of the number of patients in specialized outpatient units – epilepsy, sleep, neuroimmunological and extrapyramidal. The capacity of electrophysiological, EEG and sonography laboratories, and in particular neurology outpatient unit, is fully used.

Changes / new events in the previous year

- Department of Neurology continues to provide postgraduate education in epileptology (4 fellows + training of two specialized epileptologists), electroencephalography (training courses, 3 fellows) and electromyography (2 fellows); In 2015, specialized undergraduate training in neurology of students of the 3st Medical School of Charles University (M. Kalina, MD, Z. Vojtěch, MD) continued.
- The Department is one of the three main centers for epilepsy and epilepsy surgery in the Czech Republic. In 2015, 42 patients were operated on, with certain long-term results of epilepsy surgery exceeding the world standard. The Department closely cooperates with the Department of Cardiology in diagnosing unclear disorders of consciousness.
- The Department is perceived by specialists in neurology as a leading facility providing top quality consulting services mainly in the field of epileptology, cerebrovascular disorders and sleep disorders.
- The Centre for Sleep Disorders has a full accreditation and its capacity is fully used in the long run. One of its focuses is diagnosing sleep disorders of difficult-to-treat hypertension. In 2014, the Center treated 226 patients, of which 66 were indicated for therapy by permanent overpressure in the airways (CPAP or BiPAP).
- The concept of a Comprehensive Cerebrovascular Centre managed by M. Kalina, MD, has been successfully implemented. There are only three such centers in Prague and the Central Bohemian region. The rather dire situation caused by an insufficient capacity of neurointensive beds was rectified by a vast reconstruction resulting in a new ICU with 12 beds which opened in November 2015. Two graduates were hired to fill in medication positions necessary to deal with a significant increase in provided care.

Perspectives for the next year

The basic goal is to increase an overall production in admissions (CaseMix) to reach 135% of the 2014 values. In 2016, the Department plans to use the higher capacity to significantly increase the number of patients with cerebrovascular disorders receiving a highly specialized treatment.

Educational and other specialized activities:

- **Membership in professional societies:** Czech Neurological Society, Czech League Against Epilepsy (Dr. Kalina is a member of the League Board), civil society EPISTOP (Dr. Kalina is a member of the Board, EPI 99 (Dr. Kalina is a member of the Board)
- **Lectures, educational activities:** Regular lectures in the Institute of Postgraduate Studies in Healthcare, organization of the course of acute neurology (Dr. Kalina), study stays in the field of neurointensive care, active participation in foreign congresses, a number of presentations at domestic national events, teaching activities at the 1st and 3rd Medical Schools, Charles University (Dr. Vojtěch), EMG study stays.

Department of Neurosurgery

Head of Department: Jan Klener, MD

The Department of Neurosurgery of the Na Homolce Hospital which deals with comprehensive diagnostics, surgical treatment and follow-up care of patients suffering from diseases of the central and peripheral nervous system focused in 2015, as in the previous years, on the provision of comprehensive and safe services which improve the quality of life of these patients. In our healthcare system, the NHH Department of Neurosurgery has a function of clearly superregional, national or even international center focused on the treatment of patients with serious diagnoses which can be treated only in several healthcare facilities in the country. When it comes to morbidity, the results of planned surgical procedures correspond with average national and global data.

Department's Activities

These activities mainly involve the neurosurgical treatment of patients with diseases of the brain, base of the skull, spinal cord, spine and peripheral nervous system, including patient education, preoperative diagnostics, the actual surgical treatment and postoperative neurointensive and follow-up care. In particular, emphasis is put on the high quality of surgical and postoperative care, using modern methods and technology, minimizing stress and risks to patients, good communication with them, and observance of JCI accreditation standards.
In 2015, surgical treatment was performed in a multifunctional complex of operating rooms equipped with state-of-the-art technology, including intraoperative magnetic resonance imaging and navigational operating systems, surgical microscopes, and intraoperative electrophysiological monitoring. Integration of operating room technologies enables to provide patients undergoing operations of the brain, spinal cord or spine with a higher standard of precisely targeted, highly efficient and safe treatment.
The treatment of patients at the Department was traditionally carried out within four key areas, namely neuro-oncological, neurovascular, and functional neurosurgery and spinal surgery programs. A total of 2 957 operations were performed at the department in 2015; a total of 3 005 patients were hospitalized and 10 058 were treated as outpatients.

Neuro-oncological Program

Within the program, comprehensive operations on brain tumors, including both intracranial and extracranial brain tumors, as well as tumors of the base of the skull are performed. In the surgical treatment, emphasis is put on mini-invasive approach which reduces the burden on patients; where appropriate, keyhole craniotomy and "non-retraction" neurosurgery, minimizing trauma to the brain, are preferred. In this respect, the Department of Neurosurgery in the Na Homolce Hospital is one of the pioneers in the use of this technique and is a leading facility in the Czech Republic. The surgical standard employs microsurgery techniques using neuronavigation and intraoperative imaging aided by intraoperative MRI. The safety and accuracy of surgical operations are increased by using functional neuronavigation, intraoperative fluorescent visualization of tumors or intraoperative electrophysiology monitoring.

In 2015, the Department routinely performed resections of problematic brain areas (speech centers) with very good results

where patients were temporarily woken up during the operation. Neuroendoscopic treatment has been further developed and used in selected cases of pituitary adenoma. In the field of electrophysiological monitoring, we substantially increased the safety of procedures in the area of motor pathways in 2015 by means of so-called direct stimulation which has been newly implanted into suction cannulas enabling continuous monitoring. In 2015, in addition to its own surgical program, the Department of Neurosurgery also promoted other treatment methods, for instance in the form of regular interdisciplinary neuro-oncology workshops attended by a multidisciplinary team of specialists of the Na Homolce Hospital and by oncologists from Motol Teaching Hospital (fractionated radiotherapy, chemotherapy, radiosurgical treatment especially with the use of Leksell Gamma Knife or proton treatment). In 2015, a new perioperational duplex ultrasound was introduced 2015 which is used mainly for glial tumor surgeries.

Neurovascular Program

The Department of Neurosurgery, together with other departments, is an integral part of the Comprehensive Cerebrovascular Center which was established in the Na Homolce Hospital in April 2010. The main task in this respect is to provide a comprehensive care to patients with subarachnoid hemorrhage which includes both treatment of the most frequent cause, i.e. cerebral aneurysm rupture, as well as neurocritical and other type of care.

A wide range of microsurgical and endovascular treatment techniques are available. In 2015, microsurgical treatment included a comprehensive range of currently used methods – plain clipping, clip reconstruction, temporary clipping and remodeling, trapping and indirect methods using vascular occlusion and revascularization bypass techniques. Also in these cases, the mini-invasive approach to surgery and cerebral retraction has been applied and the latest effective techniques of electrophysiological imaging, intraoperative video-angiography and velocimeter have been used routinely. In individual cases, circulation was stopped by means of adenosine during cerebral aneurysm surgeries. In 2015, three highly complex operations of a complicated aneurysm were performed in cooperation with the Department of Cardiosurgery during which a so-called high-flow bypass was used. In the field of endovascular treatment, interventional radiologists have at their disposal all currently available endovascular methods for treatment of aneurysms. Microsurgery and endovascular treatments are available on a 24hr basis.

The year 2015 saw increased numbers of operations on unruptured aneurysms, arteriovenous malformations and cavernomas, as well as numerous operations to stop spontaneous intracerebral hemorrhage. Where indicated, decompression craniotomy for some types of ischemic cerebral strokes, together with bypasses between extra- and intracranial blood flow, were carried out in cooperation with neurologists. 2015 was the second year when the Department was taking intraoperative measurements of arterial blood flow using a transit time flowmeter. Monitoring of blood flow allows prompt responding to hemodynamic changes and preventing critical lack of blood supply to individual parts of the cerebral tissue, particularly during revascularization surgery.

Functional Neurosurgery Program

The Program mainly includes epilepsy surgery and neurosurgery aimed at reducing pain. The Department of Neurosurgery in the Na Homolce Hospital is one of the biggest centers within the Czech Republic for epilepsy surgery. The Department of Neurology cooperates with the Neurology Department, the Leksell Gamma Knife Center, the Department of Radiodiagnostics, and the PET Centre of Na Homolce Hospital. The number of indicated and operated patients has reached 30–40 patients.

Resection operations were carried out both by standard navigation technique and by stimulation treatment (application of vagal

stimulators). During the procedure, patients are examined by intraoperative magnetic resonance imaging that provides instant feedback on the extent of resection, thus, increasing the safety and efficiency of surgical procedures. In cooperation with the Department of Stereotactic and Radiation Neurosurgery, selected patients with drug-resistant epilepsy are treated by stereotactic thermolesion.

The main procedures aimed at alleviating pain include the so-called microvascular decompression and partial sensory rhizotomy for intractable pain of the trigeminal nerve. The treatment of pain by neurostimulation and neuromodulation has been further developed in collaboration with the Department of Anesthesiology and Resuscitation.

Spinal Surgery Program

The Department of Neurosurgery in the Na Homolce Hospital has been for years one of the leading centers in the Czech Republic for its spinal surgery program. These operations are performed on the entire spine using all access routes to treat degenerative diseases, as well as trauma and oncological conditions. Preference is given to the microsurgical approach and safe minimally invasive techniques using electrophysiological monitoring, where indicated. Spine surgery uses a complete range of spinal implants, including arthroplasty systems and percutaneously implanted stabilizer at its disposal. Minimally invasive character is preferred also for major fixation surgeries which can be performed by means of novel, safe techniques.
In 2015, the number of osteoporotic spine fractures increased and were treated in collaboration with intervention radiology by minimally invasive percutaneous vertebroplasty or kyphoplasty. The range of spinal tumor operations included in 2015 all types of lesions, including intradural, extradural, intramedullary and extramedullary tumors.

Basic data

Total number of beds	65
Number of standard beds	45
Number of intensive beds	8
Number of intermediary beds	12
Number of physicians	22
Number of general nursing staff	88
Number of outpatient examinations	10 058
Number of admissions	3 005
Bed occupancy rate	88 %
Average treatment period	7.1 days

Breakdown of interventions

Cerebral tumors	205
Vascular diseases	215
Functional procedures	46
Spinal diseases, including tumors	1 874
Craniocerebral injuries	84
Other	530
Total	2 957

Educational, research and other specialized activities

- The Department of Neurosurgery in the Na Homolce Hospital is the Centre of Excellence in navigation neurosurgery and neurosurgery for the dynamic stabilization of the cervical spine (Bryan, Prestige, Prospace, Discover) for the Czech Republic and the Eastern European region.
- In 2015, neurosurgeons in the Na Homolce Hospital were involved in postgraduate training of neurologists and neurosurgeons for postgraduate certificate and organized study stays in neurosurgery for Czech and foreign physicians.
- In 2015, 5 grant projects and 2 global multicenter studies of the treatment of malignant cerebral tumor were performed in the Department.
- The physicians take an active part in international and national congresses, presenting 16 contributions in 2015. Further, 4 articles were published in an international impacted journal and co-authored one monograph.

Department of Stereotactic and Radiation Neurosurgery

Head of Department: Assoc. Prof. Roman Liščák, MD, CSc.

Activities of the Department

Radiosurgical treatment by Leksell gamma knife, stereotactic and functional neurosurgery. In addition to consulting and follow-up activities related to our neurosurgical patients, our outpatient unit provides also specialized ophthalmic and neurosurgical consultant care.

Organizational units of the Department

Outpatient clinic: Neurosurgical outpatient unit, neurophysiological outpatient unit, neurological outpatient unit, ophthalmological outpatient unit

Inpatient clinic: 1 operating room for stereotactic and functional neurosurgery, Leksell gamma knife treatment unit

Basic data

Number of physicians:	6 + 2 external ophthalmologists and two neurologists
Number of general nursing staff:	12 + 1 radiology laboratory assistant
Number of other staff:	7 (3 assistants, 4 paramedical staff)
Number of beds:	8 – short-stay ward (Monday-Friday)

Performance overview

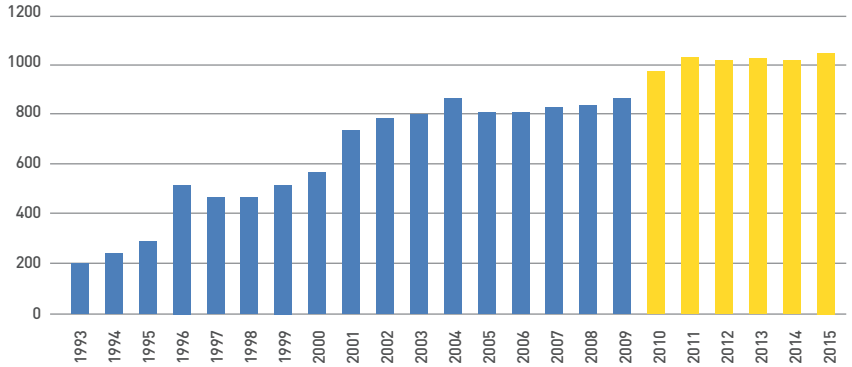
Number of operations performed using Leksell gamma knife:	1 044
of which 113 were foreigners (10.8%) – Poland 29, Slovakia 79, Belorussia 2, Russia 1 and Lithuania 3	113
Form E 112:	80
Self-payers from EU:	30
Contractual price:	3

Number of other surgeries:	144
of which	
deep brain stimulation	33 (15 primary implantation, 18 reimplantation)
implantations of spinal stimulation electrodes	4
neuromodulation intervention – occipital nerve stimulation (ONS) in patients with occipital neuralgia	1

Number of admissions:	927
Average treatment period:	1.24 days
Bed turn-over:	200.33

Outpatient unit	
Outpatient examinations:	2 473
Consultations sent by mail:	3 820

Number of patients treated by the gamma knife in individual years: yellow – after installation of the Perflexion model)



Changes / new events in 2015

In 2015, a total of 1 044 patients were treated by the gamma knife which is the highest number ever. A large percentage was still made up by foreigners (10.8%). No decrease in the number of foreign patients could be detected despite the fact that our participation in international congresses has been practically stopped. Only three foreigners paid a contractual price for gamma knife treatment. Consultations were continuously provided to patients with extrapyramidal disorders by Prof. Evžen Růžička, MD and Assoc. Prof. Robert Jech, MD, PhD in the outpatient unit for musculoskeletal disorders within the Department of Stereotactic and Radiation Neurosurgery.

The number of ophthalmology indications has been steadily decreasing; the gamma knife was used to treat 24 patients with ophthalmological disorders.

In 2015, we started organizing international radiosurgical courses, together with the Department of Medical Physics. So far, 5 courses were organized with the participation of healthcare professionals from Japan, USA, Australia, Argentina, Brazil, Serbia, Iraq, UK, and Saudi Arabia. Each course was attended by 5 medical professionals in average. The courses were in demand and were positively received by the participants.

We participated in 5 multicenter studies within the "International gamma knife research group".

Outlook for the next year

In 2016, radiation tubes will be replaced in the gamma knife which should halve the period necessary to patient treatment. This replacement takes place every 6–7 year because the half-life of the radiation source (cobalt isotope) comprises 5.3 years.

We will continue in organizing international radiosurgical courses. Educational activities abroad will be performed by our physicians who will represent the NHH hospital. We will reassume the activities of the international professional public and participate in congresses.

We did not succeed in the provision of stereotactic operations of medial temporal lobe epilepsy because Diros did not receive the CE mark for string electrodes. We expect to have the electrode certified in 2016.

Educational and other specialized activities

Postgraduate study stays of neurosurgeons were taking place. In the course of 2015, the gamma knife was visited by 198 registered visitors.

CARDIOVASCULAR PROGRAM

Department of Cardiology

Head of Department: Prof. Neužil Petr, MD, CSc., FESC

The clinical activities of the Department cover a wide range of preventive, diagnostic and therapeutic care provided to patients with diseases of the heart and blood vessels or who have an increased risk of these diseases. As in previous years, the Department continued to cover all individual specialized areas in 2015.

Multifunctional Catheterization Unit

The number of catheterization ablation procedures has been increasing in the last years which was confirmed also in 2015 when the number totaled 1 084 to reach the highest number in the Czech Republic. The so-called comprehensive interventions (ablation of atrial fibrillation, atrial and ventricular tachycardias) account for more than 2/3 of all ablations. The number of ablations for atrial fibrillation increased again in 2015 and reached 517 interventions. Patients with paroxysmal atrial fibrillation account for 2/3 of all ablations for atrial fibrillation while 1/3 are patients with persistent or long-term persistent atrial fibrillation. Similarly, the number of catheterization ablation procedures for ventricular tachycardia also increased; in 2015, 138 of these interventions were performed.

The Department routinely uses for ablation the method of remote magnetic navigation Niobe II (Stereotaxis). There were 108 of these procedures. In 2015, another remote electromagnetic navigation system (Magnetecs) and a new state-of-the-art mapping system (Rhythmia) were installed in our laboratory. New technologies contribute to the increased quality of care of our patients. Paroxysmal forms of atrial fibrillation continue to be ablated by means of balloon-based ablation methods (cryoablation and laser ablation) which clearly reduce the time needed for the procedure.

We have been involved in the clinical development of new mapping and ablation technologies, such as dipole density mapping (ACUTUS Medical), ablation lesion visualization (LuxCath), circular catheter ablation (reMARQable, Biosense Webster), etc.

In terms of the number of implanted pacemakers and defibrillators (ICD – implantable cardioverter defibrillator), the Department has been in the long run one of the largest centers in Europe. Within the Czech Republic, the Department again was the center with the highest number of implantations (1 122) in 2015. The focus is primarily on implantation of defibrillators and cardiac resynchronization therapy. The Department continues to use the method of implantation of subcutaneous ICDs and implanted 17 of these in 2015. As far as extraction of stimulation or defibrillation electrodes is concerned, 74 of them were performed in 2015, with the success rate of 98%.

Since 2012, the Department has been the world leading center for implantation of leadless pacemakers. In addition to the pacemaker Nanostim (SJM, USA, the first implantation in 2012), another type of leadless pacemaker Micra (Medtronic, USA) was clinically tested by the Department. We succeded in concluding the FDA audit as part of this study. More than 120 leadless pacemakers were implanted by the end of 2015 in our Department.

We have been involved in the clinical research of resistant arterial hypertension treatment, especially by means of so-called neuromodulation approaches. Percutaneous ablation of the carotid glomus (Cibiem system) may serve as an example.

Alternative methods of remodeling treatment in patients with heart failure or left ventricular aneurysm have also been developed. In 2015, the first implantation of the Parachute system (CardioKinetix, Inc.) – a special membrane which is introduced percutaneously into the left ventricular apex in order to increase cardiac output of the left ventricle – was performed as part of a clinical study. Minimally invasive remodeling surgery of the left ventricle (BioVetrix) has been developed in cooperation with cardiac surgeons.

Implementation of the project of experimental laboratory went on in the Institute of Physiology of 1st Medical School, Charles University. The Department is a training center for robot-assisted navigation (Hansen Medical) for the Central and Eastern Europe. Experiments with different types of cardiac support, new ablation technologies and device treatment have been performed.

Intervention cardiology

A total of 3 410 catheterization interventions (approximately the same number as in 2014), 3 020 diagnostic coronary angiographies and 952 percutaneous coronary interventions were performed. The trend of increasing the number of non-coronary interventions is going on, both on the heart (so-called structural heart interventions) and peripheral arteries.

The Department continued in the program of structural cardiac interventions, including patent foramen oval closure, atrial septal defect, pulmonary vein stenoses and closures of paravalvular leaks. The cardiologists performed some unique combined catheterization interventions for structural heart defects. The total number of catheterizations of the defect of interatrial septum reached 64, making the Department one of the centers with the highest number of these interventions.

The transcatheter aortic valve implantation (TAVI) program went on also in 2015, with a total number of 26 interventions (7 more than in 2014). This program is highly complex both with regard to the scope of diagnostic preoperative examinations and interventions and the demanding multidisciplinary cooperation.

The first catheterization implantation of the pulmonary valve was performed in a patient with a complex congenital heart defect. This triggered off the program of these interventions which will be an integral part of care for patients with complex congenital heart defects who have been systematically treated on the long-term basis in our Cardiac Center.

The development of percutaneous coronary intervention with different types of circulatory support continued and in cooperation with the angiology outpatient department, our Department routinely performs diagnostic examinations and interventions on peripheral arteries.

The Department is involved in preparation of a number of specialized programs and presentations at conferences and congresses in the Czech Republic.

Non-invasive cardiology

The highest number of examinations in the last four years (a total of 45 245) was reached in the field of non-invasive cardiology. The number of transthoracic echocardiographies again exceeded 7 000 and the number of esophageal echocardiographies exceeded 1 000 the second year in a row.

Number of interventions

Multifunctional Catheterization Unit

Ablations according to arrhythmias:	
Atrial fibrillation	517
Atrial flutter and ventricular tachycardia	207
Atrioventricular nodal reentry tachycardia (AVNRT)	136
Wolff-Parkinson-White syndrome (WPW syndrome)	50
Radiofrequency AV node ablation	57
Structural ventricular tachycardia	68
Idiopathic ventricular tachycardia	70
Left atrial appendage occlusion	39
Renal denervation	4
ICD (implantable cardioverter-defibrillators) – total:	509
ICD: implantation	321
ICD: exchange	188
Biventricular ICD – total:	196
VVI ICD – total:	166
DDD ICD – total:	130
Subcutaneous ICD – total:	17
Pacemakers – total:	613
Pacemakers: implantation	347
Pacemakers: exchange	266
VVI pacemaker	131
DDD pacemaker	455
Biventricular pacemaker	27
Stimulation electrode extraction – total:	74
Subcutaneous recorded implantation (Reveal) – total:	57

Intervention cardiology

Diagnostic catheterization	3 020
Ventriculography	422
Bilateral cardiac catheterization	173
Percutaneous coronary interventions (PCI)	853
Primary PCI (in patients with acute MI)	201
Number of stents	1 281
Fraction flow reserve (FFR)	330
Intravascular ultrasound	104
Catheterization occlusion of atrial septum defect / patent foramen ovale (PFO)	64
Transcatheter Aortic Valve Implantation (TAVI)	26
PPVI	1

Non-invasive cardiology

General outpatient unit	15 545
Angiology outpatient unit	6 644
Stimulation outpatient unit	6 586
Anticoagulation outpatient unit	3 373
Transthoracic echocardiography	7 299
Esophageal echocardiography	1 068
Dobutamine stress	12
Outpatient monitoring: Holter ECG + Loop monitor + Omron EKG + BP monitor + ECG card	2 622
ECG stress test (ergometry)	602
Tilt test	73
Outpatient electric cardioversion: Antiarrhythmic unit	153
Outpatient electric cardioversion: Coronary unit	515
Outpatient electric cardioversion – total:	668

Coronary unit

Acute coronary syndrome:	418
Extracorporeal membrane oxygenation (ECMO)	13
Artificial pulmonary ventilation (APV)	101
Length of stay (median)	3
Total mortality	6.50%

Basic data

Total number of beds	52
Number of standard beds	30
Number of intermediary beds	4
Number of intensive beds	18
Number of physicians	36
General nursing staff	120
Number of outpatient examinations	46 067
Number of admissions	5 054
Number of treatment days	14 349
Bed occupancy rate (%)	77.3
Average treatment period (in days)	2.84

Department of Vascular Surgery

Head of Department: Prof. Petr Štádler, MD, Ph.D.

Activities of the Department:

- Comprehensive surgical treatment of diseases of the vascular system, primarily the narrowing or occlusion of blood vessels caused by atherosclerotic changes or dilation (aneurysms), and also injuries of the arteriovenous system except for the coronary arteries, ascending aorta and the aortic arch. Focus on classical surgery in the region of the thoracoabdominal aorta and on new trends and techniques in vascular surgery (minimally invasive approaches, endovascular treatment, robot-assisted surgery, and laparoscopic surgery);
- Since the beginning of 2009, the Department has been performing also minimally invasive operations of varicose veins by the radiofrequency method that reduces postoperative pain and facilitates early return to daily routine activities;
- Reference clinic for surgical treatment of the thoracoabdominal aorta, robot-assisted and laparoscopy vascular surgeries;
- Outpatient care and follow-up of patients undergoing vascular surgery and patients indicated for conservative treatment.

Organizational units of the Department

Outpatient examinations	6 examination rooms
Standard inpatient unit (B)	17 beds
Standard inpatient septic unit (A)	17 beds
Intermediary Care Unit	13 beds
Intensive care unit (6th floor)	5 beds
Intensive care unit (2nd floor)	7 beds

The Department has at its disposal 2 operating rooms daily and one operating theatre for robot-assisted operations and radiological examinations 1–2 days a week. The Department provides 24-hour emergency surgical care for all acute vascular conditions and consultancy for complex aortic surgery procedures also for other regions.

Basic data

Number of physicians	17
Number of nursing staff	111
Number of auxiliary nursing staff	23
Number of paramedic staff	1
Number technical and administrative staff	5
Number of standard beds	34
Number of semi-intensive beds	13
Number of intensive beds	12
Number of admissions	2 400
Number of hospitalized patients	1 821
Bed occupancy rate	69.15%
Average treatment period	7.34 days
Number of treatment days	15 397
Mortality	1.21%

Number of interventions

Surgical interventions – total	1 670
Thoracic aneurysm – classical	19
Thoracic aneurysm – stent graft	19
Abdominal aneurysm – classical	96
Abdominal aneurysm – stent graft	49
Aneurysm of pelvic arteries	1
Aneurysm of popliteal artery	12
Aortofemoral reconstructions	57
Pelvic reconstructions	33
Extra-anatomic reconstructions	40
Treatment of infections of vascular prostheses	21
Operations on branches of the aortic arch	174
of which: Carotids – endarterectomy	213
Glomus tumor	2
Carotid aneurysm	0
Bypass or implantation of carotid/subclavian	10
Bypass from ascending aorta (sternotomy)	0
Femoropopliteal proximal reconstruction	85
Reconstruction of arteries in the groin area	35
Crural reconstructions – total	150
Varicose veins	394
of which: Classical	314
Radiofrequency	80
AV shunts	44
Transplantation of vascular allografts	5
Robot-assisted surgeries – total	28
of which: Abdominal aortic aneurysm	11
Aortobifemoral bypass	10
Aortofemoral unilateral bypass	5
Endoleak	0
Deliberation of the celiac artery	1
Splenic artery aneurysm	1
Laparoscopy surgeries:	16
of which: Iliofemoral	5
Aortobifemoral	6
Aortofemoral	2
Thoracoscopic thoracic sympathectomy	10
Lumbar sympathectomy by laparoscopic method	5
Endoscopic harvesting of great saphenous vein for vascular reconstructions	8
Vascular intervention in collaboration with radiologists	357
Number of outpatient examinations / number of examined patients	**14 060 / 7 610**

Department operation in 2015

Since January 2008, the Department of Vascular Surgery has been managed by Prof. Petr Štádler, MD, PhD, who is also a member of the external educational staff of 1st School of Medicine, Charles University, with which the Department actively cooperates. Mr. Štádler was appointed professor on May 1, 2015. Since 2015, the Department participated in the training of students from the 2nd School of Medicine, Charles University, managed by Petr Šedivý, MD, Ph.D.

In 2015, the Department routinely performed comprehensive diagnostics and surgical treatment of diseases of the vascular system, primarily the narrowing or occlusion of blood vessels caused by atherosclerotic changes, and also of injuries to the arteriovenous system except for the coronary arteries, ascending aorta and the aortic arch that are traditionally the responsibility of cardiac surgery. The range of surgical interventions included operations on branches of the aortic arch, thoracic and abdominal

aorta, including aneurysms (the Department of Vascular Surgery has the highest number of aortic operations in the Czech Republic), reconstruction of arteries supplying abdominal and retroperitoneal organs, operations on arteries supplying the limbs, as well as varicose veins, and a relatively unique transplantation of vascular grafts to deal with the infection of vascular prostheses One of the largest groups of patients includes those with ischemic disease of the lower limbs and with narrowing of the arteries supplying blood to the brain. Minimally invasive approaches are used in thoracoscopic or laparoscopic lumbar sympathectomies, endoscopic operations of varicose veins, endoscopic sampling of veins for vascular reconstructions and operations of the abdominal aorta through reduced surgical approaches, the so-called mini-laparotomies, and particularly the robot-assisted and laparoscopic vascular surgery (the declining trend of robot-assisted operations was successfully reversed despite the restrictive policy of the Czech Ministry of Health, thanks to improved communication with some health insurance companies).

The Department of Vascular Surgery keeps its unique position of a world leader in the robot-assisted vascular surgery and of a national leader in thoracoabdominal aortic surgery. Since January 2014, Prof. P. Štádler acts as Vice-Chairman of the Czech Society for Cardiovascular Surgery. In December 2015, as a member of the group of authors, he received the Jaroslav Jirsa Award for the best textbook of 2014 (Surgical oncology) to which he contributed with a chapter on vascular tumors.

Another important area of the Department is endovascular surgery which specializes in the implantation of stent grafts for the treatment of abdominal aneurysms and those of the thoracic aorta. Implantation of stent grafts, perioperative angiography and intraoperative angioplasty are routinely carried out in collaboration with the Department of Radiodiagnostics. A specialized team of surgeons and radiologists has been established for this purpose.

The Department also performs complicated interventions to treat infections of vascular prostheses by transplantation of vascular allografts. Together with the Institute of Clinical and Experimental Medicine, the teaching hospital in Prague and the tissue bank of the teaching hospital in Hradec Králové, the NHH Department of Vascular Surgery participated in the program of vascular graft cryopreservation. A number of centers in the Czech Republic take advantage of the Department as a consultancy center for treatment of a range of serious vascular problems.

Angelo Disabato, an Italian physician, participated in an ERASMUS program in the Department in the summer of 2015.

Outlook for 2016

The Department will provide comprehensive diagnostics and the complete range of surgical treatment of arterial and venous diseases focused on new trends also in 2016. We plan to cooperate with the Department of Cardiac Surgery in addressing vascular conditions falling into both these specializations. Thoracoabdominal aortic surgeries will be developed. Minimally invasive approaches in operations with a focus on robot-assisted and endovascular surgery will be further developed. Development of robot-assisted vascular surgery will be the subject of negotiations with the Czech Ministry of Health and the General Health Insurance Company.

The 3D laparoscopy tower will be used for furthering another type of minimally invasive surgeries. Succesful cooperation with the Department of Radiology in the field of endovascular surgery will continue as agreed with its head Prof. Vymazal. In addition, the Department of Vascular Surgery will continue to deal with infections of vascular prostheses, the incidence of which grows nationwide. These interventions are economically highly demanding and the Department still does not have a septic operating room for this purpose.

A hybrid operating room for endovascular surgery, hybrid interventions and thoracoabdominal aortic surgery should be opened in 2016. The focus of the Department on the latest trends in the field of minimally invasive approaches in arteriovenous surgery is also of great importance.

Educational and other specialized activities

The Department is also involved in undergraduate training of students of the School of Medicine and postgraduate studies of physicians to obtain the postgraduate certificate in vascular surgery, as well as of physicians whose specialization requires a study stay in the Department of Vascular Surgery. Head of the Department Prof. P. Štádler is an external teacher and a member of the Board for Postgraduate Certificate in Vascular Surgery at 1st School of Medicine, Charles University in Prague. He works also as a lecturer for robot-assisted vascular surgery at the European Institute of Telesurgery in Strasbourg and as a lecturer of Intuitine Surgical in USA. Prof. Štádler also holds the post of the president of subcommittee for robot-assisted vascular surgery MIRA in Los Angeles, USA, is deputy president of a committee of the Czech Society for Cardiovascular Surgery and a member of the accreditation committee of the Czech Ministry of Health for the specialty of vascular surgery. He is also the founding member of the International Endovascular & Laparoscopic Society, a member of ISMICS (International Society for Minimally Invasive Cardiothoracic Surgery) and reviewer of the journal Surgical Laparoscopy Endoscopy & Percutaneous Techniques.

Petr Šedivý, MD, PhD participates in the teaching of medical students of the 2nd Medical School, Charles University in Prague. The Department is also involved in undergraduate training of students of the 2nd year of 3rd School of Medicine, Charles University in Prague, in the specialization "general nurse". The Department plans to continue organizing courses in robot-assisted surgery, vascular surgery and surgery of varicose veins for both domestic and foreign doctors.

Department of Cardiac Surgery

Head of Department: Ivo Skalský, MD, PhD, MBA

Activities of the Department:

- Comprehensive surgical treatment of heart and intrathoracic major blood vessels;
- Follow-up of selected groups of patients in outpatient unit before and after cardiac surgery

Organizational units of the Department

Outpatient examinations	3 examination room
Standard inpatient unit	14 beds
Intermediary Care Unit	12 beds
Postoperative and reanimation care unit	9 beds

Two operating rooms are available 5 days a week and 1 operating room is available 24 hours for emergency interventions.

Organization of the Department

Number of physicians	18
Number of nursing staff	95
Number of auxiliary nursing staff	21
Number technical and administrative staff	1
Number of standard beds	14
Number of semi-intensive beds	12
Number of reanimation beds	9
Total number of beds	35
Number of hospitalized patients	920
Bed occupancy rate	81.30%
Average treatment period	10.9 days
Total number of treatment days	10 026

Number of interventions and mortality

Surgical interventions – total	828
Isolated aortocoronary reconstructions	209
Combined aortocoronary reconstructions (EACI, MAZE, etc.)	19
Cardiac valve replacement/valvuloplasty	528
Isolated operations on ascending aorta and aortic arch	18
Others (myxoma, pericardiectomy, pacemaker extraction)	45
Epicardial stimulation lead implants	12
MAZE operations (combined with ACB and valvular surgery)	144
Thoracic aorta operations – total (combined with other interventions)	123
Robot-assisted interventions	0
Acute and emergency interventions	225
Planned surgeries	603
30-day mortality	1.8% (15/828)
Acute interventions	1.2%
Elective interventions	0.6%
Number of outpatient examinations (visits)	9 610

Changes / new events in 2015

- In 2015, the Department performed as many as 828 cardiac surgeries. With regard to the number of performed interventions, the Department regularly ranks 3rd or 4th among all departments of cardiac surgery in the country and first among the facilities with two operating rooms.
- The trend of increase in the number of valvular surgeries amounting to 63.7% of all surgeries continued also in 2015. These were both isolated and combined surgeries, which confirms the focus of the Department on valvular surgery. The number of other interventions performed by the Department, be it coronary reconstructions, aortic operations or correction of congenital defects, remains comparable with the previous years.
- There was an increased in the number of combined surgeries which amounted almost to 43% and an increase in the number of acute and emergency surgeries. These emergency interventions comprised more than ¼ (27.1%) of all interventions.
- Surgical results are affected by the percentage of acute surgeries which generally carry a higher risk than elective interventions. However, these results are still very good. The total annual mortality of 1.8% is significantly lower as compared to the predicted mortality of 6.33% calculated on the basis of the international scoring system Euroscore II. Acute surgery accounted for 2/3 of cases of the total mortality.
- In 2015, the trend of valve salvation instead of valve replacement was confirmed in valvular surgery. These salvation surgeries, in particular on the mitral valve, accounted for approximately 75% of operations. It can be emphasized that more than 2/3 of isolated mitral valve surgeries were performed by means of a minimally invasive approach. Thanks to these two aspects, the Department is one of the leading facilities in the Czech cardiac surgery.
- The range of interventions included also operations of congenital defects that last year accounted again for about 10% of all interventions. This specific program with excellent results has been systematically implemented in cooperation with the Pediatric Cardiac Center of the Teaching Hospital in Motol, and is unique both in the Czech Republic and on the European level.
- In 2015, the Department continued to perform several clinical studies, in particular Mitral Bridge which is performed exclusively in our hospital and e-Mesh and Bioventrix. The last study is being performed in close cooperation with the Department of Cardiology.
- The Department performed and further developed arrhythmologic interventions, particularly cryoablation for atrial fibrillation, cryodestruction of arrhythmogenic left ventricular substrate and epicardiac mapping to identify the ideal place for thoracoscopic implantation of a stimulation electrode within resynchronization therapy in patients with heart failure. In this field, it cooperates with both our Department of Cardiology and the Hospital in Liberec.
- In the field of treatment of aortic diseases, it collaborates with the Department of Vascular Surgery and Department of Radiology.

Outlook for 2016

- In 2016, we plan to perform over 800 cardiac surgeries again, maintaining the same range of surgical interventions and surgery results as in the previous year.
- 3 systemic programs that are the core activities of the Department will be further developed. These programs are as follows: Aortic disease treatment program (cooperation with vascular surgery and radiology), program for surgical treatment of valvular diseases and for treatment of inborn heart defects in adults (again, in cooperation with the Children´s Cardiac Center in the Teaching Hospital in Motol).
- We will make all efforts to maintain the leading position in the Czech Republic in the field of minimally invasive surgery.
- The final opening of the hybrid OR and later on of the OR for robot-assisted surgeries in 2016 will allow the development of new surgical techniques and procedures. It will enable us to enhance the range of available cardiac surgeries and to increase and improve care provided to our patients.

Department of Cardiac Anesthesiology

Head of Department: Pavel Jehlička, MD, MBA

Activities of the Department

The Department covers two basic areas, namely anesthesiological care for cardiac surgery and cardiology and also intensive care for the cardiac surgery postoperative unit.

Anesthesiological care

We provide anesthesia care for patients undergoing either cardiac surgery, with or without extracorporeal circulation, or cardiac robot-assisted surgery with a minimally invasive approach.
For cardiology patients, the Department ensures anesthesia in complicated heart mapping in arrhythmology, anesthesia for the extraction of pacemaking systems, renal artery ablation in patients with a high blood pressure and for electrical cardioversion. In 2016, a hybrid multidisciplinary OR will start its operation.

Intensive care

In the field of intensive care, the Department is responsible for operation of the cardiac surgery postoperative unit and closely cooperates also with the cardiac surgery intermediate care unit. Within our Cardiac Center, it supports other units of intensive cardiology care by providing consultations. Together with the Department of Cardiology and the Department of Biomedical Engineering, we participate in the program of extracorporeal support of circulation for patients in cardiogenic shock.

In 2004, the doctors of the Department of Cardiac Anesthesiology were the first to introduce extracorporeal pulmonary support in the Czech Republic (artificial lung Novalung) in a patient with a severe pulmonary failure that could not be managed by standard methods. As the only facility in the Czech Republic, the Department ensures anesthesia in robot-assisted cardiac surgeries and anesthesia for operations on adult patients with congenital heart defects.

Organization of the Department

Number of physicians:	9
Number of nursing staff:	8

Administered anesthesia for:

Cardiac surgeries	1 005
Cardiological interventions	842
Interventions longer than 2 hours	980
Interventions longer than 6 hours	177

PROGRAM OF GENERAL MEDICAL CARE

Department of Internal Medicine

Head of the Department: Milan Čech, MD

Activities of the Department

The Department provides essential clinical back-up for the key areas of the Cardiovascular Program and Neuroprogram in the Na Homolce Hospital, namely to the inpatient ward, internal medicine policlinics, department of gastroenterology and to the center for pulmonary endoscopy. The majority of hospitalized patients are various diagnostic admissions from all internal medicine specialties, i.e. gastrointestinal, respiratory, cardiac, diabetic and not least infectious and autoimmune diseases.

The Department treats patients also from other regions. The Department provides specific care for patients with short bowel syndrome and ensures their long-term parental nutrition, which includes treatment of the complications that are inevitably connected with this therapy. The Department routinely carries out bedside sonography and ultrasound-guided interventions (central cannulation, diagnostic/evacuation puncture etc.) and offers consultations concerning the use of bedside ultrasound device to other departments of the hospital.

Intensive Care Unit

The Unit has 8 beds with the possibility of up to 3 beds with ventilation. It also provides a comprehensive intensive care for polymorbid patients, including patients with complicated infections, from other postoperative ICUs of the hospital. Most patients are transferred from the core departments of the Na Homolce Hospital, some of them are referred by the acute internal medicine outpatient unit and from other hospitals.

Inpatient unit

The number of admissions has been steadily growing at the standard inpatient unit. The capacity is due to the average hospital stay fully used and the bed occupancy rate is the second highest in the entire Na Homolce Hospital, after the Surgical Department. The department admits to the inpatient ward patients with acute internal diseases referred by the acute internal medicine outpatient unit, patients with planned diagnostic and therapeutic treatment (all subspecialties of internal medicine, oncology), patients with acute internal diseases from other departments of the hospital (all departments, in particular acute complications of oncological treatment and chronic hemodialysis program), patients followed-up after invasive surgery (gastroenterology, center of pulmonary endoscopy, interventional radiology).

Generally, also patients from other regions are admitted; however, the capacity of beds is limited. Another important part of the activities is the provision of inpatient care to patients of the Homolka Premium Care program and to relatives of hospital staff.

Internal medicine outpatient unit

Physicians of individual specialisations closely cooperate and are mutually well substitutable both in the outpatient and inpatient units. Part of the outpatient unit is a pulmonary, gastroenterology and metabolic unit (focused on home par/enteral nutrition, diabetology, endocrinology, lipid consultancy, obesitology, consultancy for quitting smoking), as well as a preoperative internal medicine unit.

Acute internal medicine outpatient unit

The Actute internal medicine outpatient unit is the most fully used outpatient units of the Department; the number of treated patient has been continuously growing, with a year-to-year increase of more than 1 000 examinations. An increase in the number of treated patients can also be expected in the future due to the fact that the outpatient unit partially supplements the lack of an emergency department and that care accesibility in other facilities has been deteriorating. Should the number of patients further increase it will be necessary to increase the staff of the outpatient unit.

In particular, the Department provides treatment and examination of patients with acute non-surgical problems who have no special referral for a particular specialized examination. Other activities include outpatient infusion therapy and diagnostic and therapeutic interventions.

Gastroenterology Unit

The unit is the show-case of the Internal Medicine Department since it provides excellent gastroenterology care using a wide range of endoscopic methods. It performs common endoscopy of the upper and lower gastrointestinal tracts, as well as a highly-specialized ERCP examination of bile ducts. It has excellent results in the use of endosonographic techniques, including unique interventions for which patients from the entire country are referred.

The current state of equipment and spatial arrangement of the gastroenterology unit has been inadequate in the long run in terms of its importance for the hospital and its position within the Prague and even national healthcare system. Therefore, it will be vital to improve its spacial arrangement and technical equipment.

Center for Pulmonary Endoscopy

The Center for Pulmonary Endoscopy and related specialized outpatient units offers comprehensive bronchologic diagnostics, including autofluorescent bronchoscopy, NBI (Narrow Band Imaging) and endobronchial ultrasonography. The combination of new diagnostic methods with the existing ones, such as PET-CT, provides an exceptional opportunity for early diagnosis and staging of bronchogenic carcinoma followed by pneumo-oncological treatment. The capacity and the use of bronchologic care has been steadily growing, i.a. due to an active cooperation with field pneumologists and other hospitals.

Educational activities

The Department is accredited by the Czech Medical Chamber to train and issue functional licenses in internal medicine, gastroenterology, general medicine, abdominal ultrasonography (F008), endoscopic ultrasonography (F004), artificial nutrition, and metabolic care (F016).

Each year, postgraduate education is provided to the students of the 1st, 2nd and 3rd Medical School of Charles University, as well as postgraduate and pre-specialization internships to younger colleagues of other specialties in the Na Homolce Hospital. In the long run, the Department organized postgraduate courses for physicians preparing for the general medicine specialy examinations, in cooperation with the Institute of Postgraduate Studies in Healthcare.

Basic data

Number of physicians	29
Number of nursing staff	54
Number of paramedical staff	9
Number of standard beds	21
Number of ICU beds	8

Overall performance of the inpacient unit (comparison with 2014)

Bed occupancy rate	90.5%
Average treatment period for the entire department	7.33 days / increase of 0.1
Total number of treatment days	9 472 / last year 9 244, i.e. increase of 228
Admissions	1 292 / last year 1 286, i.e. increase of 6

Department of Clinical Oncology

Main physician: Martin Šafanda, MD

Activities of the Department

The Department of Clinical Oncology focuses on the treatment of malignant tumors in adult patients. The oncological program consists of 4 key areas:

I. Gastroenterological program

- Tumors of small and large intestine
- Stomach and esophageal tumors
- Pancreatic tumors
- Liver and bile duct tumors

II. Beast cancer program

- Breast tumors

III. Urogynecological program

- Prostate tumors
- Renal tumors
- Urinary bladder tumors
- Ovarian tumors

IV. Pneumo-oncological program

- Pulmonary and bronchial tumors

The Department of Clinical Oncology is involved in close cooperation with the Comprehensive Oncology Center of the teaching hospital in Motol. Radiation therapy is carried out in the cooperating facility. In the absence of inpatient ward, the acute care, including ICU care, is ensured by the Department of Internal Medicine of the Na Homolce Hospital. Symptomatic treatment of terminal stages is provided in cooperation with the Institute of Pneumology and Oncology in Pleš. Since 2009, the Department has been involved in multicenter randomized studies of phase II and III. Due to the development of tumor epidemiology in the Czech population, annual growth of 5–7 % of cases may be expected also in the future.

Basic data

Number of physicians	4
Number of general nursing staff	5
Number of newly admitted patients	605
Number of outpatient examinations	14 956
Number of chemotherapies	10 358

Number of outpatient examinations:

Surgery	Targeted	9 154 (of which excisions 241)
	Follow-up	7 886
Orthopedic surgery	Targeted	8 284
	Follow-up	6 748
Urology	Targeted	4 321
	Follow-up	3 113
Total:		**39 506**

Department of Gynecology and Minimally Invasive Therapy

Head of Department: Petr Popelka, MD

The activity of the Department focuses on the diagnosis and surgical treatment of gynecological diseases, with emphasis on minimally invasive approaches. The complete range of pelvic surgery was similarly as in the previous years concentrated in four clinical programs: namely oncogynecological, urogynecological programs, comprehensive treatment of endometriosis and general gynecological surgery. The Department has a specialized center for each program.

Oncogynecological program includes classic laparoscopies and laparoscopically assisted and laparovaginal surgery for tumors of the cervix, ovaries, endometrium and vulva and follow-up postoperative care for surgical patients and those treated for cancer in a special consulting center. The latest surgical approaches and technologies that the Department has at its disposal significantly increase the accuracy and efficiency of oncolaparoscopic surgery. The total number of oncology surgeries for gynecological carcinoma amounted to 51 interventions in 2015, of which 15 were radical. A total of 225 precancerous cervical lesions were identified within screening for malignant neoplasms of cervix.

Urogynecological program covers both diagnostics, surgical and conservative treatment of incontinence and pelvic floor disorders. Surgical procedures include the latest trends using special reticulate implants (nets) and put emphasis on the comprehensive treatment of a given problem while observing the rules of minimally invasive interventions. In total, 420 female patients with the above problems were operated, of which 72 interventions were performed with the use of implants.

The Program for comprehensive diagnostics and endometriosis surgery offers comprehensive treatment to patients from the Czech Republic, including radical laparoscopic surgery, predictive histological diagnosis of growth factors and subsequent hormonal therapy with final verification of the outcome. The Department of Gynecology in the Na Homolce Hospital is one of the most experienced centers in the Czech Republic in performing radical operations of retroperitoneal endometriosis. In 2015, the Department carried out 152 interventions, of which 20 interventions were radical surgeries for infiltrative retroperitoneal endometriosis.

General gynecological surgery deals with the surgical treatment of infertility, myomatosis, adnexal tumors and cysts. It also treats problems with postoperative adhesions, chronic pelvic pain, inflammation and congenital development disorders. Hysteroscopy operations include diagnostic and surgical endoscopy of the uterine cavity.

In 2015, a total of 1 837 female patients were admitted for treatment to the Department.
The total number of surgical interventions in 2015 amounted to 1 788 surgeries, of which 87%, including oncological interventions, were performed by minimally invasive methods.

Basic data

Number of beds	19
Standard beds	15
Intensive beds	4
Number of physicians	9
Number of nursing staff	24
Number of outpatient examinations	17 950
Number of admissions	1 837
Number of treatment days	4 619
Number of surgical interventions	1 788
Bed occupancy rate	73.36%
Average treatment period (in days)	2.51

Department of ent / head and neck surgery

Head of Department: Petr Jirák, MD

Activities of the Department

The Department specializes in diagnostics and conservative and surgical treatment of the ear, nose and throat.

The surgical procedures carried out in 2015 covered a whole range of head and neck surgery, i.e. surgeries of the nose and paranasal cavities, including endoscopic interventions, comprehensive surgery of the thyroid, microsurgery of the larynx, cophosurgical interventions, as well as corrective surgeries in the area of the head and neck, operations on the soft tissues of the head and neck, surgeries for injuries of facial bones and comprehensive ENT oncology. Skull base surgery has been developed in collaboration with the Department of Neurosurgery.

The Department cooperates with neurologists in the treatment of balance disorders and has at its disposal the Leksell gamma knife for the treatment of auditory nerve tumors. In cooperation with oral surgeons and neurosurgeons, it performs demanding operations of the facial skeleton and skull base. Good cooperation was also established with experts in allergy and immunology, especially when dealing with chronic rhinitis or chronic sinusitis. One of the key areas is treatment of patients with cancer where the Department provides a detailed diagnosis, surgical treatment and, in collaboration with oncologists, follow-up care.

The program of temporomandibular joint treatment continued also last year with regular articular operations of outpatients. In 2015, the treatment of diseases of the temporomandibular joint was mainly conservative and minimally invasive (arthrocentesis under local anesthesia and arthroscopic surgery).

Surgical treatment of rhonchopathy and sleep apnea syndrome is also very common, with the use of radiofrequency method that reduces healing time and postoperative discomfort for patients. The success rate of the treatment is regularly monitored by feedback from patients obtained through questionnaires. We established very close cooperation with the Center for Sleep Disorders which is part of the Department of Neurology to treat patients with sleep breathing disorders.

In the field of thyroid surgery, the Department keeps up with international trends and uses minimally invasive procedures to remove thyroid tissue by the MIVAT method (minimally invasive video-assisted thyroidectomy). Further, it carries out the whole range of operations, starting from partial up to extensive interventions, including removal of the entire gland, and provides comprehensive postoperative care in cooperation with endocrinologists. In addition to that, the Department closely cooperates with the Department of Nuclear Medicine of the Teaching Hospital in Motol in the follow-up care of patients with thyroid diseases.

In 2015, the outpatient unit provided comprehensive services, including specialized consultancies in oncology, otoneurology, cophosurgery and otoprosthetics, outpatient interventions for rhinopathy, thyroid, corrective surgery of the nose, phoniatry, and a specialized unit for joints and salivary glands with endoscopic technique for diagnosis and treatment of salivary gland ducts. The outpatient center for sleep and snoring disorders (ronchopathy) extended its activities mainly in collaboration with the Department of Neurology and the Laboratory for Sleep Disorders. The Department also has an ENT pediatric specialist working in the pediatric outpatient unit. The Department continued to develop an aesthetic program which primarily includes procedures on auricles, eyelids, external nose, and laser operations.

A standardly used NBI method (narrow band imaging) allows, both in the outpatient setting and during surgeries under general anesthesia, an earlier and more precise diagnosis of early stages of serious diseases of ENT mucosa, particularly vocal cord disorders.

In 2015, we introduced a new FEES (fiberoptic endoscopic evaluation of swallowing) assessment method of swallowing which is further developed in cooperation with a clinical speech therapist.

Basic data

Number of beds	11
Standard care	8
Intensive care	3
Number of physicians (as of December 31, 2015)	10
Number of general nursing staff	20
Number of outpatient examinations	11 253
Number of consultations	1 305
Number of admissions	1 267
Number of treatment days	
Standard care	1.2
Intensive care	1.0
Bed occupancy rate (%)	97 %
Standard care	
Intensive care	
Average treatment period (in days)	
Standard care	2.5
Intensive care	1.0

Number of surgical interventions

Surgeries under local anesthesia	643
Surgeries under general anesthesia	865
FESS surgeries	155
Thyroid gland surgeries	148
MLS (microlaryngoscopy)	111
Oncological diagnoses	88
NBI	131
TMJ (temporomandibular joint) surgeries	129

Outlook for the next year

In 2016, the Department of ENT / Head and Neck Surgery headed by Petr Jirák, MD, will continue to provide comprehensive diagnostics and treatment. The aim of the Department is to further improve the professional standard and quality of the provided health care, with emphasis on interventions with shorter hospital stays.

The Department will also focus on improvement of quality and extension of the program of functional-corrective surgery, rhonchopathy and further development of thyroid surgery. Within

the neuroprogram, cooperation will continue with the Department of Neurosurgery, particularly with regard to the skull base surgery.

Within the cardiac program, the Department will continue to be involved in preparation of patients for cardiac and vascular surgeries.

As every year, the Department will organize a workshop on thyroid disorders, with a focus on operative techniques and thyroid surgery, also in 2016.

Department of Anesthesiology and Reanimation

Head of Department: Zbyněk Fuksa, MD

Activities of the Department

- Provision of anesthesia
- Reanimation of bed-ridden patients (8 multidisciplinary beds)
- Urgent reanimation within the hospital
- Consulting activities
- Chronic pain treatment in the chronic pain outpatient unit
- Educational activities (an accredited training center in anesthesia and intensive care medicine)
- Cardiopulmonary resuscitation training provided to all employees of the Na Homolce Hospital
- Hyperbaric oxygenotherapy

Organization of the Department

Number of physicians	27 (+5 physicians on maternity leave)
Number of anesthesia nurses	21
Number of pain treatment nurses	2
Number of resuscitation nurses (at bed)	32
Number of paramedical staff	6
Number of administrative staff	1

Basic data

Number of emergency admissions	210
Number of anesthesias per year:	9 387
Number of anesthesias exceeding 2 hours	2 545
Number of anesthesia when on duty	900
Number of patients of the anesthesiological outpatient unit	9 646
Number of patients in pain treatment center	672

Educational activities:

- The Department is involved in teaching physicians – it is an accredited training facility for anesthesiology and intensive care medicine.
- Physicians of the Department provide training in cardiopulmonary resuscitation to all hospital employees.
- If practicable, they participate in workshops, congresses and training seminars which are part of life-long learning: they participated in 7 events in the Czech Republic and 1 event in USA in 2015.
- I. Vrba, MD is actively involved in publication activities: a total of 14 publications and lectures, including in high-impact journals.

Department of Clinical Pharmacy

Head of Department: Milada Halačová, PharmD, PhD

Activities of the Department

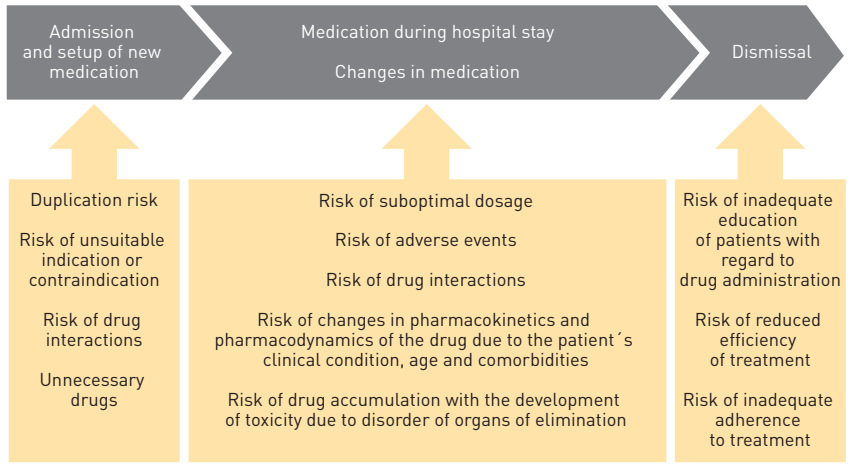
The Department of Clinical Pharmacy was established in the Na Homolce Hospital in August 2010 to ensure the safety of pharmacotherapy which is one of the major priorities of the hospital management. In terms of organizational structure, it falls within the competence of Deputy Director for Therapeutic and Preventive Care. The team consists of pharmacists with a specialization in clinical pharmacy or those who will be included in training for this specialization. The work of our clinical pharmacists is governed by the needs of the Na Homolce Hospital, the safety standards set by JCI and by staff availability within the Department. The activities in which a clinical pharmacist takes part are divided into several areas.

The major areas include (1) the assessment of a newly admitted patient's medications. This is only a so-called signal check, i.e. a gross assessment of the patient's medication with respect to indications, contraindications, dosages and chosen route of administration. It reveals any duplication of medication and evaluates the clinical importance and risks of drug and food interactions. In such a way, future problematic medications for the patient or high-risk pharmacotherapeutic regimes are identified and continuously monitored.

The key activity of the clinical pharmacist is (2) the work in the clinical department and close cooperation with treating doctors and nurses. The clinical pharmacist monitors patient medication in detail and assesses any causal relationships between specific patient problems and their changes during illnesses, laboratory examinations and current medication, and adjusts drug dosages, especially of antibiotics for dialyzed patients and for patients with various degrees of renal and hepatic damage. They work with nurses on drug incompatibilities and the crushing of drugs for nasogastric and jejunal probes.

The clinical pharmacist provides an on-demand (3) consulting service within the hospital, takes part in the (4) development of best practice, reports adverse events to the State Institute or Drug Control and is responsible for preparing reports for dealing with exceptional events in the hospital related to medications. The Department is working on a list of high-risk and LASA (look alike-sound alike) drugs and is involved in preparing so-called proactive procedures and storage systems to minimize the number of errors in handling these drugs and the impact such errors might have on patients.

Overview of activities of the Department of Clinical Pharmacy in the Na Homolce Hospital



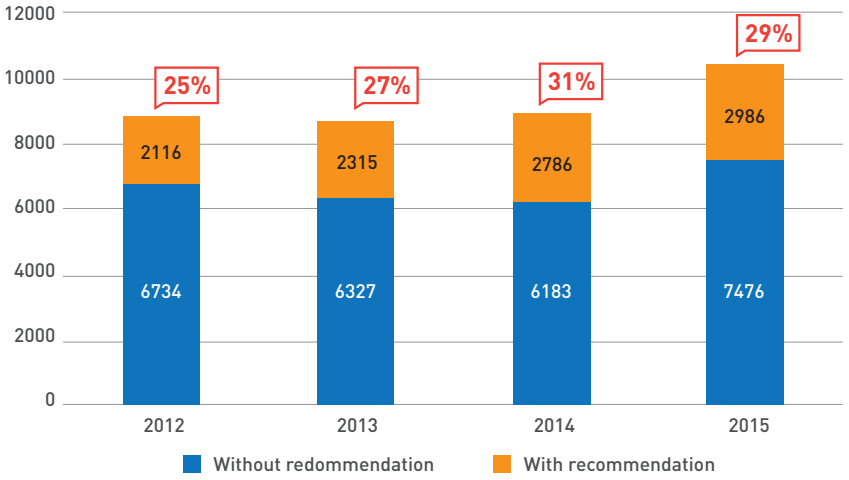
Activities of the Department

The Department provides care to all patients in the hospital. Upon admission, it usually separates young patients without medication who undergo a short-term, mostly ½-1 day hospital stay, those who are treated in the Center for Sleep Disorders, who are indicated for the gamma knife treatment, etc. The remaining approx. 50% of inpatients require detailed revisions by the clinical pharmacist, as many as several times during the hospital stay. Medication is adjusted on the basis of intervention of the clinical pharmacist in about 3 000 patients annually (30%). The highest percentage of interventions includes adjustment of medical drug dosage in case of impaired function of the organ of elimination (risk of accumulation), clinically significant medical drug interactions, severe adverse events, incompatibilities, contraindications, unnecessary medical drugs, etc.

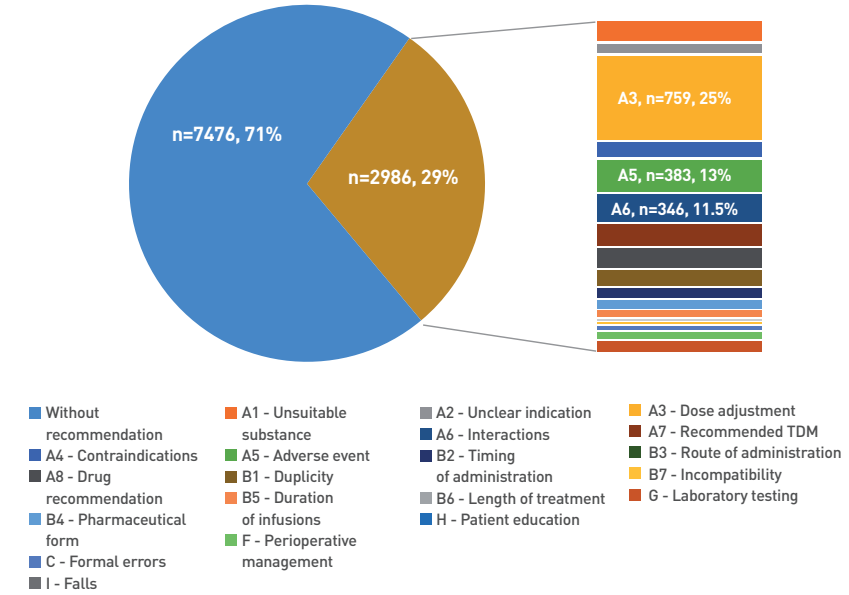
Numbers of inpatients revised by the clinical pharmacist and consultations requested by outpatient departments in 2015:

Number of revised inpatients	10 462
Number of inpatients with recommendation of the clinical pharmacist	2986 (29%)
Number of patients with severe adverse events	287 (2.7%)
Number of consultations required by the physician in outpatient department	1 071

Graph 1: Number of recommendations of clinical pharmacists in the Na Homolce Hospital in 2012–2015



Graph 2: Detailed structure of identified drug related problems in 2015 (n=10 462)



Accreditation and specialist activities:

- The Department is a member of the accreditation board of the Ministry of Health for clinical pharmacy (in 2015, it trained 19 postgraduate fellows and 3 undergraduate students);
- Membership in the accreditation board of the Ministry of Health for clinical pharmacy;
- Membership in the Section of clinical pharmacy of the Czech Pharmaceutical Society of J. E. Purkyně (M. Halačová is its chairperson);
- Educational activities in the field of pharmacology at schools of medicine and pharmacology in Prague and Brno;
- Membership in the Board of the Institute for medical drug guide
- Guarantor of the national pilot program "Medication in retirement homes" implemented by the State Institute for Drug Control and Ústav lékového průvodce (Drug Guide Institute).

Staff data

Number of clinical pharmacists:	5.5 FTE

Conclusion

A high standard of clinical pharmaceutical care was confirmed by the JCI international audit of quality and safety of care which the Na Homolce Hospital repeatedly received in 2014. The clinical pharmaceutical care provided by the hospital has become a common standard ensuring a high level and safety of pharmacotherapy for all its inpatients. The global setup of the clinical pharmacological care in the Na Homolce Hospital, guaranteed by the JCI independent international accreditation, is at present unique in our country. The project was awarded several times and in 2013 the hospital became winner of the national competition "A Safe Hospital".

OUTPATIENT UNITS

Center for Allergy and Clinical Immunology

Senior physician: Assoc. Prof. Petr Čáp, MD, PhD

Activities of the Department

- The Center provides therapeutic and preventive specialized outpatient care to adult and pediatric patients with allergic diseases, immunity disorders and recurrent respiratory infections.
- In 2015, the Department performed comprehensive diagnostic and treatment procedures, including preventive and consulting care for both children and adults patients with allergies, asthma and other immuno-pathological conditions (immunodeficiencies and autoimmune conditions.
- The Department takes part in the operation of the Club for Patients with Allergies and Asthma (AA Club Homolka) which is a member of the Association for the Assistance to Chronically Ill Children. The club has more than 100 members. For nineteen years now, it has been bringing together families with children with allergies, organizing educational lectures, publishing its newsletter "Motýlek" (Butterfly), distributing the journal "Allergy, Asthma, Bronchitis" and improving the quality of care for children with allergies and asthma. As part of these activities, another two-week therapeutic stay at the seaside in Greece was organized in August 2015 for 49 children.

Operational data

Outpatient units:	4 surgeries, 3 prep rooms and 1 functional diagnostics laboratory
Number of physicians:	5 (3.2 FTE until November 2015 and 3.0 FTE from November 2015) + 2 physicians from the Department of Clinical Biochemistry, Hematology and Immunology (0.4 FTE each)
Number of general nursing staff:	6 (a total of 5.0 FTE)

Overview of selected interventions in the outpatient unit

Number of patients	6 023
Number of examinations	11 394
Number of skin tests	40 168
Number of spirometries	8 258
Number of bronchomotoric tests	1 134
Number of rhinomanometries	152
Number of allergen-containing vaccine administrations (treatment initiation)	243

Educational and other specialized activities

- Postgraduate training courses provided to physicians and nurses in the field of allergy and clinical immunology for which accreditation by the Czech Ministry of Health was received more than 10 years ago;
- Undergraduate courses provided to students of the 1st and 2nd School of Medicine, Charles University;
- Organization of educational activities within life-long education on the national basis, a number of specialized conferences and symposiums: Conference of the Czech Society for Allergy and Clinical Immunology, interdisciplinary meeting of respiratory medicine in Luhačovice, 14th meeting of pediatric allergologists and clinical immunologists in Telč;
- Organization of programs for nurse certificate course Specific treatment care of patients with allergies and other immunopathological conditions within the Institute for Postgraduate Education in Healthcare
- Tutoring activities for the Czech Initiative for Asthma, assessment activities for the State Institute of Drug Control and the Czech Ministry of Health (grants);
- Membership in editorial boards of specialized journals: Allergies and the Journal of Czech Physicians;
- Membership in professional societies: Czech Society for Allergy and Clinical Immunology of J. E. Purkyně, Czech Pneumology and Phtisiology Society of J. E. Purkyně (Assoc. Prof. Čáp), Czech Society of Internal Medicine of J. E. Purkyně (Assoc. Prof. Čáp), Czech Immunological Society (Assoc. Prof. Petrů), European Academy of Allergy and Clinical Immunology (Assoc. Prof. Čáp, Assoc. Prof. Petrů, dr. Herknerová), European Respiratory Society (Assoc. Prof. Čáp), American Academy of Allergy, Asthma and Immunology (Assoc. Prof. Petrů);
- Active participation in workshops, conferences and foreign congresses in the field of allergy and clinical immunology, extensive publication activities (Assoc. Prof. Čáp received Dr. Liška award for the best monograph for 2014 – Evaluation of exhaled nitric oxide in bronchial asthma;
- Research activities – (Assoc. Prof. Čáp) – participation in the OLA EX AIR projects – Determination of breathing profiles of inflammatory parameters in patients with severe asthma (Pulmonary Department of Hradec Králové Hospital, Department of Occupational Medicine of 1st School of Medicine, Charles University, Prague, University of Chemistry and Technology, Prague and the Na Homolce Hospital)

Department of Pediatric and Adolescent Medicine

Senior physician: Zuzana Hejtmánková, MD

Mission of the Department

As an integral part of the Na Homolce Hospital, the Department provides a high quality health care to children and adolescents within the general healthcare program of the hospital. It offers above-standard services to the patients and indirectly also to their family members and has a friendly and professional approach of the staff and open and patient-oriented communication.

Activities of the Department:

- Therapeutic and preventive care provided to children and adolescents – general practitioner for children and adolescents (specialization 002);
- Consulting services in the field of pediatric care (specialization 301);
- Specialized care in the field of pediatric neurology, endocrinology, gastroenterology, psychology, orthopedics, pneumology, nephrology and speech therapy;
- Therapeutic and preventive care provided to foreign nationals;
- Consulting services provided to children of foreign nationals;
- Healthcare stipulated by international treaties of the Czech Republic;
- Therapeutic and preventive care provided to clients of the commercial program;
- Emergency service;

Facilities

The Department of Pediatric and Adolescent Medicine is an out-patient unit without an inpatient section.
It consists of:

- 4 pediatric offices – of which 1 is a consulting office;
- 1 office of clinical speech therapist;
- 1 room for laboratory sample collection used also for emergency resuscitation and isolation of infectious patients prior to their transport to infection ward;
- Ultrasound examination room;
- Rooms for staff members;
- A separate register of all patients of the Na Homolce Hospital of 0–19 years of age (i.e. also for patients outside the Pediatric Department);
- Hygienic facilities for the policlinic units on the 1st floor;
- A room for storing laundry

Staff of the Department

Physicians:

- 2 full-time physicians;
- 2 part-time physicians;
- 1 full-time non-medical university graduate (clinical speech therapy);
- 7 consulting specialists;
- 4 physicians on a contractual basis ensuring, together with the core staff the hospital, emergency service and substituting other physicians during holidays or sick leave

General nursing staff:
- 5 pediatric nurses (of which 1 with 0.75 FTE)

Pediatric reception desk:
- 3 employees

Organization of the Department

Total number of registered patients:	3 805
Number of children receiving permanent care:	1 399
Number of children registered in consulting unit:	371
Number of children in specialized out-patient units:	922
Number of children in out-patient speech therapy unit:	201
Number of registered foreign nationals:	222
Number of paying foreigners:	51
Number of the Commercial Program clients:	156
Number of registered newborns:	74

Total number of examinations:	18 698
Number of pediatric procedures:	12 789
Number of procedures performed by consultants:	2 435
Number of procedures performed by speech therapists:	2 646
Number of procedures performed by external staff:	2 326

Average number of patients treated daily in the office:
- Pediatrics: 17
- Consultancy: 8
- Speech therapy: 14
- Emergency service on working days: 3
- Emergency service on holidays: 10
- The number of children treated daily in the department: 54

Total number of treated foreigners: 841

Economic results for 2015

Costs:	9 494 812
Wages:	8 356 976
Materials:	842 887
Total revenues:	212 156

Points

Total number of points:	3 543 582
Pediatricians:	1 840 286
Consultancy:	336 131
Speech therapy:	901 442
External workers:	462 444

Changes and events in 2015

The CRP OPRION examination continued to be used for fast diagnosis of inflammatory diseases in order to provide effective treatment of these conditions. In total, 1 463 of such examinations were performed. STREPTEST examinations for fast diagnosis of Streptococcal infections were used extensively. In total, 579 of these examinations were performed.

The outpatient unit of neurology and orthopedics pursued the established program of neuroorthopedic screening focused on observation of patients, aimed at early identification and subsequent observation and treatment of disorders of gait coordination, postural and neurological disorders.

The endocrinology consulting center, in cooperation with pediatric outpatient units, was involved in early detection of children with the diagnosed intrauterine growth retardation (their further follow-up is ensured by the Institute of Endocrinology) and juvenile thyreopathy.

The psychology consulting unit provided diagnostic services to the clinical psychologist for crisis intervention and long-term monitoring of the child's psychological development.

Clinical speech therapy was provided to children registered in the Department, as well as to children from other healthcare facilities in Prague and other regions.

Consulting services were provided by the pediatric gastroenterology outpatient unit, including ultrasound diagnosing of the gastrointestinal tract in children.

The refurbishment of a new office for consultants was finished providing adequate working conditions and devices for their work.

Courses within continuous training of physicians were organized.

Outlook for 2016

Admission of new patients of all age groups is foreseen. Economic activity will be carried out within the hospital flat rate and payment per capita for specialization 002. The Department should produce a stable number of scoring points, cooperate with the complementary services of the hospital and generate additional revenues within the commercial program.

In-patient care for its patients will be ensured by the Department preferably in cooperation with the Clinic of Pediatric and Adolescent Medicine Ke Karlovu 2, Prague 2. Specialized examinations performed by our consultants will continued to be provided to physicians for children and adolescents from Prague 5.

Vacancies will gradually be filled in by young specialized physicians and continuous training will be further provided to physicians and nurses.

Department of Dermatology

Senior physician: Richard Šuraň, MD

Activities of the Department

The Department provides outpatient therapeutic and preventive care for clients of commercial services (Homolka Premium Care, Comfort Care and paying foreigners), the staff of embassies in the Czech Republic, the staff of the Na Homolce Hospital, and consulting services for the hospital outpatients and inpatients. Treatment of other patients from the Czech Republic and abroad is provided only based on the immediate availability of physicians in the Department.

In case of suspected venereal diseases, the Department makes basic examinations. Patients with a confirmed diagnosis of gonorrhea, syphilis or chlamydia infection are referred to the respective specialists in dermatovenerology.

The Department makes examinations of suspected skin tumors and in case of histological confirmation of the diagnosis, the patients are treated and followed up by the Department. Patients with malignant melanoma and lymphoma cutis are referred to the Department of Oncology of the Na Homolce Hospital (and the Department of Dermatology is then involved in their follow-up), or to the outpatient dermatooncology units of other dermatology departments.

In addition to the basic specialized examination, the Department performs electrocauterization, cryotherapy, sclerotherapy of varicose veins, examinations of pigment formations by dermatoscope, epicutaneous tests, Doppler and photoplethysmography examinations of the vascular system of limbs, dermatosurgery and aesthetic dermatology interventions.

Organization of the Department

Number of physicians	1 senior physician (1.0 FTE)
	1 independent physician (0.5 FTE)
Number of nurse	2 nurses (1.0 and 0.8 FTE, respectively)
Outpatient examinations	10 875

Development perspectives for 2016

Physicians and nurses of the Department are involved in postgraduate training courses and regularly read professional journals. The task of the Department for 2016 is to maintain the quality of the provided therapeutic and preventive care, strengthening of epicutaneous testing and increasing the range of aesthetic dermatology interventions.

Department of Ophthalmology

Senior physician: Petr Novák, MD

Activities of the Department:

- Out-patient therapeutic and preventive ophthalmological care for patients of H+system, HPC, foreigners, employees and other patients;
- Consulting services provided to both outpatients and inpatients from different hospital departments (primarily neurology, neurosurgery, cardiology, anesthesiology and reanimation and internal medicine);
- Specialized examinations of patients referred from external ophthalmologists and other specialists;
- Outpatient surgery – cataract surgery, anterior segment and glaucoma surgery, eye-lid surgery and surgery of surrounding tissues (currently more than 99% of cataract surgeries are done in an outpatient setting);
- Inpatient surgical procedures: Corneal transplantation and certain cataract surgeries (in patients from remote regions and in severely ill patients); for this purpose, the Department uses beds in the ENT Department and Department of Internal Medicine;
- Paid surgeries: refractive clear lens extractions, implantation of phakic lenses, astigmatism corrections

Organization of the Department

The Department of Ophthalmology has an outpatient unit and operating room, it has no inpatient ward. If need be, the patients stay in the ENT Department or the Department of Internal Medicine. The Department is managed by the senior physician and the staff work in four offices.

Examinations in 2015

Number of outpatient examinations	14 349
Number of patients treated in outpatient units	5 825
Total number of surgeries	1 269
Cataract surgeries	1 006
Commercial refraction interventions	191
Corneal transplantations	34
Surgical correction of astigmatism	38

Staff data

Number of physicians	6
Number of FTEs	4.3
Contract for work (FTE)	0.2
Number of general nursing staff	7
Number of general nursing staff FTEs	6.0
Number of auxiliary nursing staff	1
Number of auxiliary nursing staff FTEs	1.0
Number technical staff members	1
Technical staff FTE	1.0
Total number of employees	15
Total number of FTEs	12.5

Changes in 2015

Reconstruction of air-conditioning in surgeries and in the OR reversed the trend of the long-term stabilization of cataract surgery and corneal transplantation numbers. There was an increase in the number of commercial refractive surgeries such as lens extraction and implantation of a monofocal or multifocal implants or toric lens implantation. Patients were still interested in the possibility to pay an additional fee for the implantation of an above-standard lens within the "economically more demanding treatment option" (implantation of toric and multifocal lenses within the cataract surgery covered by the health insurance companies) that was cancelled in August 2013.

Educational and specialized activities

Physicians are members of the Ophthalmological Society, the Czech Society of Refractive and Cataract Surgery and participate both actively and passively in workshops, congresses and other events of the Societies. In 2015, the physicians participated in postgraduate courses both at home and abroad (the Lion´s Club Educational Center, international cataract surgery course) and had a number of presentations at ophthalmological congresses and specialized workshops.

Development perspectives for 2016

- We will providing information to the specialized public with regard to the possibilities of treatment in the Department of Ophthalmology either covered by health insurance companies or provided in the form of commercial care;
- We will cope with competitive conditions in the medical market within a so-called economically more demanding options of healthcare;
- We would like to raise awareness about procedures performed in our Department and to strengthen its position among other ophthalmology facilities.
- We plan to gradually upgrade the technical equipment of the Department, such as purchase of a laser device for secondary cataract treatment or ocular tomograph (OCT) for early diagnosis of macular lesions.
- We will extend the range and increase the overall number of commercial intraocular interventions.
- We will continue cooperation with clinical ophthalmological facilities in Prague.
- We plan to organize workshops under the auspices of the Department of Ophthalmology, workshops organized by the Association of Nurses, the Lion´s Club Educational Center in the Czech Republic and the Czech Society of Refractive and Cataract Surgery.
- It will be necessary to address the lack of space in the Department in the near future.

Department of Psychiatry

Senior physician: Jaroslava Skopová, MD

Activities of the Department

The Department provides diagnostic, therapeutic and preventive psychiatric care to policlinic patients, patients of the department for foreigners, patients using other hospital programs, and provides consulting services in the hospital. It cooperates with other physicians in the program of comprehensive pain management.

Organization of the Department:

- 1 outpatient unit;
- 1 physician (1.0 FTE) with I and II degree Postgraduate Certificate in psychiatry and function specialization in systemic psychotherapy;
- 1 nurse (1.0 FTE);
- Total number of examinations – 3 008 of which 141 were new, initial examinations;
- 89 consulting sessions

Evaluation of clinical activities

Given the limited capacity (only one position of psychiatric FTE), the clinical activities of the Department remained the same. The focus is on comprehensive diagnostic, therapeutic and preventive psychiatric care, respecting hospital priorities. The patients that cannot be admitted for treatment due to lack of capacity are referred to other departments of psychiatry. The senior physician cooperates with other inpatient psychiatry departments in Prague where patients indicated for hospitalization are referred to, as well as with community service centers which receive patients with severe mental disorders and impaired functional abilities.

Membership in professional societies and teaching activities

The physician is a member of the Czech Psychiatric Society of J. E. Purkyně, the Czech Neuropsychopharmacological Society and the Society of Biological Psychiatry. She is a sworn expert entered in the list of sworn experts of the Municipal Court in Prague. She is a also member of the professional committee of the Scientific Board of the Czech Medical Chamber for psychiatry. She also presents lectures within workshops of the hospital departments, workshops of the Department of Psychiatry of the General Teaching Hospital and 1st School of Medicine, Charles University, Association of General Practitioners, etc.

Development perspectives for 2016

The aim is to maintain the current high quality of the provided care and economic results. As the Na Homolce Hospital is a highly specialized hospital where psychiatry is only a complementary discipline to ensure a comprehensive range of provided medical services and the Department has only one physician, no further development is possible.

Department of Clinical Psychology

Head of Department: Martin Kořán, CSc., PhDr.

Activities of the Department

The Department of Clinical Psychology has no in-patient ward. The psychologists work in three outpatient units where they examine patients and provide psychotherapy in compliance with the respective specialization of individual departments (particularly neurosurgery, neurology, stereotactic and radiation neurosurgery, internal medicine, surgery, etc.) according to the requests of treating physicians. They also provide consulting services to other departments of the hospital.

Specialized psychological care includes preoperative psychological preparation before complicated interventions, help in coping with the impact of diseases, neuropsychological diagnostics aimed at the identification of intellectual and cognitive abilities or assessment of personality psychopathology. Neuropsychological diagnostics can rule out some medical interventions or refer the patient for some special procedures, such as bariatric surgery, neurostimulator implants etc., for which special psychological assessment is required by health insurance companies.

Main services:

- Neuroprogram – specialized neuropsychological diagnostics and psychotherapy in patients with neurological diseases (epilepsy surgery program, neurosurgical treatment of tumors, cerebrovascular diseases, cognitive rehabilitation, cooperation with the Department of Neurosurgery of the Na Homolce Hospital, e.g. in awake brain surgeries, cognitive rehabilitation of patients with neurocognitive deficit, cooperation with the Department of Stereotactic and Radiation Neurosurgery in examination of patients with epilepsy, obsessive-compulsive disorder etc. before and after the intervention);
- Cardiac program – specialized psychological diagnostics and psychotherapy in patients with cardiovascular diseases (cardiac surgery, demanding vascular reconstructions, acute myocardial infarction, neurostimulator implantation for refractory angina pectoris, etc.);
- Internal medicine program – specialized psychodiagnostic and psychotherapeutic treatment in the field of obesitology and bariatrics, diabetology, endocrinology, oncology, pneumology and gastroenterology; other activities include psychosomatic and obesitology consultations;
- Crisis intervention in acute responses to unfavorable diagnosis, psychological preparation for demanding interventions, assistance in coping with psychological impacts of diseases (Leksell gamma knife, oncology, etc.);
- Pain management consulting center – psychological assessment and subsequent supporting psychological care provided to patients with long-term or chronic pain;
- Psychosomatic consulting center – psychological treatment of patients with psychosomatic disorders (e.g. high blood pressure, ulcer diseases, diabetes, various functional disorders, etc.) requiring a professional psychological intervention;
- Psychodiagnostics and psychotherapy in children with various psychosomatic and educational problems within a comprehensive care provided for pediatric patients;
- Psychological examination of patients required by directives and regulations of the Ministry of Health and General Health Insurance Company (prior to implantation of neurostimulator,

programmable pumps, before providing a patient with an electric wheelchair, C-leg prosthesis (microprocessor controlled joint), before returning driving license to patients, etc.);

Complementary services:

- Examination of qualifications of persons to be in contact with classified information within the meaning of Act No. 148/98 Coll, within assessment of personality (the department accredited by the National Security Agency);
- Psychological examination of drivers pursuant to Act No. 361/2000 Coll. performed by a psychologist accredited by the Ministry of Transport;

Research activities:

- Research follow-up of patients (e.g. with epilepsy, after ischemic stroke, etc.) in cooperation with the Epilepsy Center and Department of Neurology;
- Cooperation with the Department of Radiodiagnostics in developing medical examination paradigm by means of fMRI with a focus on higher mental functions (memory, speech, etc.);
- Cooperation with the Department of Stereotactic and Radiation Neurosurgery in examination of patients with epilepsy, obsessive-compulsive disorder, etc. before and after surgery;
- Cooperation with the Department of Neurosurgery in awake brain surgeries, monitoring of patients with EC-IC bypasses, elective aneurysm, etc. before and after surgery;
- Preparation of Neuropsychological Assessment Battery (NAB) in the Czech language for the testing center;
- Development of research cooperation with the Prague Psychiatric Center and 1st School of Medicine, Charles University – differential diagnosis and methodology research issues;

Organization of the Department

Number of psychologists:

With postgraduate certificate	4 (of which 1 works part-time and 1 short-time)
Without postgraduate certificate	1 (0.2 FTE)

Number of psychological interventions in inpatients:

Individual systemic psychotherapy (30 minutes)	20
Specific psychological intervention (30 minutes)	3 428
Targeted psychological assessment (60 minutes)	464
Follow-up psychological assessment (30 minutes)	458
Psychodiagnostics with a complicated psychotherapeutic intervention	39
Crisis intervention	6

Number of outpatient interventions:

Individual systemic psychotherapy	492
Comprehensive psychological assessment (60 minutes)	20
Targeted psychological assessment (60 minutes)	422
Follow-up psychological assessment (30 minutes)	108
Specific psychological intervention (30 minutes)	179
Clinical psychologist´s interview with family members (30 minutes)	6
Consultations by phone (10 minutes)	13
Psychodiagnostics with a complicated psychotherapeutic intervention (90 minutes)	124
Crisis intervention	20
Group therapy (90 minutes)	1
Comprehensive psychological assessment (60 minutes)	108
Targeted psychological assessment (60 minutes)	249
Follow-up psychological assessment (30 minutes)	10

The total number of points achieved:

Total	2 184 909
of which points concerning inpatients:	809 778 (473 694 for General Health Insurance Company)

Educational activities and membership in professional societies

- We organize specialized study stays as part of undergraduate study programs (for the Liberal Arts School and Teaching School, Charles University – a total of 12 students), supervise diploma and master´s degree theses, as well as postgraduate study (courses for Postgraduate Certificate in clinical psychology – a total of 3 postgraduate, 3 PhD students and 1 fellow of the Erasmus program).
- L. Krámská, MD, PhD has established the Czech Neuropsychological Society and develops its activities, obtained accreditation by the Czech Ministry of Health for a certified course in clinical neuropsychology, is a member of the branch board of the postgraduate study program in the field of clinical psychology at the Liberal Arts School, Charles University, develops long-term cooperation with the Prague Psychiatric Center, and lectures at the Subdepartment of Clinical Psychology of the Institute of Postgraduate Studies in Healthcare; She is a member of the international ILC (International Liaison Committee) of the International Neuropsychological Society (INS) and the board of the European Neuropsychological Society for the Czech Republic and prepares, in cooperation with INS, an international congress to be held in Prague; In October 2015, L. Krámská MD was nominated as a member of the Task Force Clinical NeuroPsychology of the European Federation of Psychological Societies in Brussels, to represent the Czech Republic.
- M. Kořán, MD is a member of the board of the Czech Union of Psychological Societies; M. Kořán, MD, PhD is a lecturer in the postgraduate courses on transport psychology at the Liberal Arts School, Palacký University in Olomouc, Masaryk University Brno and Liberal Arts School, Charles University, Prague. He provides lectures in the workshops within specialized education in clinical psychology and cooperated in training postgraduate psychologists in 2015. He also provided training to 2 new psychologists of the Department;
- J. Procházková, MD was involved in organization of XVIIth international workshop Child in crisis in Zlín in June 2015, presented lectures at specialized workshops and conferences on sexual violence against children, child custody cases, interrogation of child witnesses, etc., is a member of the Ethics Committee of the Czech-Moravian Psychological Society and of the Board of scientific societies at the Czech Academy of Sciences. She also presents lectures within psychodynamic training, is a regular supervisor in various institutes and a member of the Czech-British Society for Family Crisis Prevention based in Leeds;.
- In 2015, employees of the Department presented a total of 18 lectures at domestic and 3 lectures at international congresses.

Development perspectives for 2016

As in previous years, we will continue to provide a high quality psychodiagnostic and psychotherapeutic care to both inpatients and outpatients in the Na Homolce Hospital (where necessary also to hospital employees). Further, we will continue to participate in training within the accreditation procedure (theoretical-practical and practical programs in clinical psychology) and cooperate with the Liberal Arts School and Teaching School of Charles University in undergraduate and postgraduate education, to organize, as an accredited center of the Ministry of Health, study stays within postgraduate education in clinical psychology. Since the received accreditation is valid until June 30, 2017, it will be necessary this year to prepare for the fulfillment of all requirements necessary to continue in the specialized education program in the field. We will continue to participate in standardization of neuropsychological methods and procedures for the Neuroprogram of the Na Homolce Hospital and to develop psychotherapy and cognitive rehabilitation of patients with neurocognitive deficits.

Department of Rehabilitation and Physical Medicine

Head of Department: Ivan Hadraba, MD

Activities of the Department

The department provides comprehensive diagnostics and therapeutic care to restore physical abilities of disabled patients. The care is provided both to inpatients of the Department, to inpatients of other specialized inpatient units and to outpatients. Another type of specialized care includes orthopedic-prosthetic treatment provided to all patients of the hospital in cooperation with external prosthetic and orthotic centers.

Organizational units of the Department

The Department is part of the therapeutic and preventive care section. It has an outpatient unit and an inpatient unit with 10 beds. These are provided to the Department by other departments – Neurosurgery, Vascular Surgery, Neurology and Gynecology. The outpatient unit consists of offices of rehab physicians, hydrotherapy room, rooms for physiotherapy and physical therapy.

Staff (in terms of FTEs)

Physicians:	6
Head physiotherapist:	1
Physiotherapist:	1
Occupational therapist:	1
Nursing staff:	4
Paramedic staff:	1
Massagist:	4
Administrative staff:	1

Performance overview

Number of outpatient interventions:	28 409
Number of other staff:	238 014 (outpatient + inpatient)
Total:	266 423

Changes / new events in the previous year

On 1 November 2015, the operation of the inpatient unit, i.e. of the beds provided in the Departments of Neurosurgery, Vascular Surgery and Neurology, as well as in the closed part of Department of Gynecology, was established. Subsequently, we started hiring new physicians, physiotherapists, occupational therapists and other staff and provided specialty training to selected employees. We planned to provide the Department with additional devices and facilities in order to comply with the relevant requirements.

Given the operational situation in the Mánes spa center in Karlovy Vary, our physicians ensured the operation of the spa center and provided care to its patients.

Our physicians and physiotherapists continued two long-term projects initiated in cooperation with the departments of ENT, Surgery and Urology and with external facilities: 1. Treatment of urinary incontinence in women and treatment of urinary incontinence in men after prostatectomy; 2. Comprehensive physiotherapy for voice disorders – physiotherapy for voice and reeducation; examination of the voice field by a device developed in the R&D laboratory of the Academy of Performing Arts in Prague, electrostimulation treatment of vocal cord disorders.

Physiotherapy and prosthetic treatment is provided also to patients of the Department of Vascular Surgery after lower limb amputations. Due to the opening of the inpatient unit and hospitalization of patients with this diagnosis, it was possible to introduce a new technology of early prosthesis provision which led to a significant facilitation of rehabilitation ensuring patient´s self-sufficiency.

Development perspectives for 2016

In the period of February through April 2016, reconstruction of the inpatient unit of the Department will be performed; a partial refurbishment will be performed also in the outpatient unit. In addition, an architectural project of a compact department of rehabilitation and physical medicine was initiated which is planned to be incorporated into the hospital investment plan.

Further plans include:

- Establishment of specialized physiotherapy outpatient units according to diagnoses of individual departments of the hospital, concerning both conservative treatment and postoperative conditions;
- Coordination of specialized interdisciplinary team care for lower-limb amputees, training of gait with prosthesis;
- Organization of VIIth conference of physicians specialized in rehabilitation and physical medicine and other disciplines, and physiotherapists;
- Organization of specialized workshops for physiotherapists and physicians in cooperation with external lecturers;
- Development and introduction of the feedback method in postoperative restoration of motion stereotypes in orthopedic, neurological and neurosurgical patients;
- Introduction of new principles of physical therapy to provide care to patients with vascular diseases

Dental Outpatient Department

Senior physician: Petr Kolčava, MD

Activities of the Department:

- Provision of outpatient dental care;
- Provision of preventive outpatient dental care;
- Provision of acute outpatient dental care;
- Provision of consulting services to patients from other departments of the hospital

Organization of the Department

- The given range of outpatient dental care was provided by two dentists until June 31, 2015 and by one dentist since July 1, 2015. The care was provided to outpatients and inpatients, contractual partners of the hospital and foreigners. Emergency care was provided by dental surgeons at times when the dentist was absent.
- Until June 31, 2015, the Department had two dental offices with two dentists. Only one dental office with one dentist and one nurse is available Since July 1, 2015.
- In 2015, a total of 5 357 patients were examined and treated.

Evaluation of clinical activities

The number of examined and treated patients slightly decreased due to the fact that one dentist left the Department. However, the number of interventions is still rather high which was achieved particularly due to a highly efficient organization of work, immediate filling of time slots vacated by absent or late patients and extension of working hours, e.g. by treatment of painful conditions before the official working hours.

Changes and events in 2015

In the field of therapeutic care, the Department continued to cooperate with the department of dental surgery in the treatment of patients with dental implants.

An increased number of patients with Class I defects according to Voldřich were treated with adhesive fixed replacement, so called Maryland bridge.

Development perspectives for 2016

The priority in 2016 will be to fill in the vacant position of dentist and dental hygienist. The Department will continue to cooperate with dental surgery department in treatment of patients with new types of dental implants, prosthetic treatment with the use ZX – 27 abutment technology and Maryland Bridge. The Vanini's stratification technique will be used more widely in composite treatment. In cooperation with the prosthetic laboratory, a new anti-snoring system Silensor will be used in selected patients, as well as mouth guards to prevent teeth grinding, indications will be extended for all-ceramic replacements of veneer-type, and the capacity will be increased for production of total replacements using locators in order to increase their retention. Although dental care is a complementary service in the system of the Na Homolce Hospital, the Dental Department will make every effort to maintain the comprehensive range and high quality of the provided services as far as possible.

SUMMARY OF ACTIVITIES OF DEPARTMENTS PROVIDING COMPLEMENTARY SERVICES

Department of Radiodiagnostics

Head of Department: Prof. Josef Vymazal, MD, DSc.

Activities of the Department

The Department provides services both to the hospital and to other healthcare facilities, including 24-hour support. The range of activities included diagnostic examinations, using radiodiagnostic technology, with special emphasis on diseases of the nervous, locomotory and cardiovascular systems, as well as on vascular and non-vascular interventions.

Vascular methods

In cooperation with vascular surgeons and cardiac surgeons, the Department continued to cooperate last year with vascular and cardiac surgeons within the program of implantation of stent grafts in aneurysms of the abdominal and thoracic aorta and pelvic vascular system. The opening of the stroke unit in the Department of Neurology lead to a further development of endovascular neuroradiological inteventions. Non-invasive treatment of brain aneurysms by means of detachable spirals, with possible use of remodeling techniques by means of stents, continued.

A new, two-component adhesive Onyx has been used on a regular basis that enables treatment of intracranial arterio-venous malformations in the area of the spinal canal. It was used also for malformations in other locations.

In addition to using intra-arterial thrombolysis, the revascularization treatment of acute ischemic stroke caused by occlusion of some of the main cerebral arteries was carried out by a method involving the mechanical removal of the thrombus using various types of extraction equipment, mostly combining mechanical destruction and evacuation of thrombus. The recanalization methods continued to be applied where a special fully-retractable stent was used for cerebral arteries to withdraw a thrombus from the artery. The Na Homolce Hospital is one of ten accredited comprehensive cerebrovascular centers where CT, MRI and endovascular interventions are available around-the-clock.

In the treatment of stroke based on the occlusion of the deep venous system and sinuses, the method was newly introduced (also globally) of superselective catheterization of deep cerebral veins directly followed by local thrombolysis and recanalization of the deep veins and sinuses.

The therapeutic possibilities for vascular interventions of the head, spine and other parts of the body were expanded by the use of the double-projection angiograph, Axiom Artis (Siemens), with its excellent post-processing and sophisticated navigation software which is useful for neuro-radiological examinations. The Department follows the latest trends in this field and chooses new technologies and materials for its own application.

Non-vascular methods

This area was further dominated by CT-guided nerve root injections, vertebroplasty and kyphoplasty. Our hospital is traditionally one of the most active facilities in the country in this field. Non-vascular intervention methods are performed by a 16-slice CT scanner.

Since December 2010, a two-source Somatom Flash CT equipment has been used to ensure diagnostic advances. In 2012, the device was retrofitted with the interactive reconstruction system (SAPHIRE) which contributes to a considerable reduction of the exposure to radiation during CT examinations. Insufficient emphasis is put on the fact that CT scans represent a significant radiation exposure for humans. Our hospital is very careful about it and aims at using the lowest exposure possible for diagnostic and intervention examinations. In agreement with global trends, we tend to replace a CT scan with MRI in indicated cases where there is no radiation exposure.

In the last year, we performed a significant number of CT scans of the heart, including CT coronarographies. We are able to significantly reduce radiation exposure also for these examinations thanks to state-of-the-art equipment. CT perfusion examination of the whole brain was carried out on a regular basis in acute stroke.

The system of dual energy scanning allows a better separation of the skeleton and iodine-containing contrast medium from other tissues, which is helpful particularly in CT angiography. The Department uses this technology also to determine chemical composition of certain structures, for instance urinary stones.

Magnetic resonance imaging

For several years now, examination by intraoperative magnetic resonance imaging (IMRI) has been performed on a regular basis, using the equipment installed in the neurosurgery operating room. Our hospital belongs to the very few in the country which are able to perform such examinations. In the assessed period, the Department carried out MRI spectroscopic examinations, by both SVS and CSI, of the brain and other parts of the body (the prostate in particular), diffusion imaging, including the technique of diffusion tensor imaging for white matter tractography. Functional MRI BOLD imaging for preoperative planning, neuronavigation and deep brain stimulation have been further developed. In addition to routine clinical use, the Department uses these techniques for research. The results were published in several prestigious journals. These examinations have become faster and more precise after the implementation of new software.

In 2015, the functional MRI BOLD imaging was further developed, in particular, after the introduction of new examination methods for epilepsy. Post-processing of functional BOLD sequences has been considerably simplified and accelerated.

The program of MRI heart examinations has continued, including as a standard the phase contrast sequences for imaging and quantifying blood flow, which is important mainly for valvular and short-circuit defects of the heart. The total number of CT and MRI examinations of congenital heart defects increased in 2015.

Since 2012, the Department has used MRI angiography of renal arteries without the use of contrast medium, which was made possible by retrofitting the Magnetom Avanto MRI with more accurate technology (NATIVE). In addition to saving financial means, this examination is important also for patients with impaired renal functions in whom contrast administration could be dangerous.

Mammography

The Na Homolce Hospital belongs to a network of accredited clinics and is equipped with a Planmed Nuance Excel mammography system with direct digitization. Patients with unclear mammography and ultrasound findings are indicated for MRI breast examination performed also by the Department. The second reading of images is a matter of routine. The Mammography Clinic was again among the five best clinics out of the 60 centers in the Czech Republic that were assessed for the quality of their mammography screening.

All radioscopic image documentation is digitally stored in the hospital's information system and is available to physicians within the entire hospital. All operations of our Department have been fully digitalized, i.e. no films have been used since 2009. The hospital also uses a well-proven sPACS system, interconnecting imaging records of most hospitals in the country.

Since 2011, the Department has used electronic request forms on a regular basis and external request forms are also transferred to electronic format. The system of electronic request forms for all types of radiodiagnostic examinations has been in use in the hospital for several years now.

Organization of the Department

Technical equipment

- Angiography unit: 1x Multistar Siemens, 1x Siemens Axiom Artis biplane
- CT unit: 1x Siemens Somatom Flash (2x128), 1x Siemens Sensation 16
- MRI unit: 1x Magnetom Avanto 1.5 T, 1x Magnetom Symphony 1.5 T, 1x Siemens Skyra 3 T, 1x GE Signa HDx (neurosurgery operating rooms) 1.5 T
- Ultrasound unit: 2x Toshiba Aplio, 1x Toshiba Eccocee, 1x GE Logiq 9, 1x GE Logiq E9
- Mammography: 1x Planmed Nuance Excel
- Basic equipment: 1 sciascopic and sciagraphic unit, mobile x-ray equipment
- PACS workstations, scanners, printers, data archives

For 2016, there is a plan to replace the oldest X-ray device by a new X-ray system with a direct digitalization and to replace an older angiography device. The replacement of the mammography device is also planned.

Basic personnel data

Number of physicians	28
Number of laboratory technicians	31
Number of general nursing staff	9
Number administrative staff	10
Number of auxiliary nursing staff	2

Numbers of specialized intervention and treatment procedures

PTA (with or without stent implantation)	374
Endovascular treatment of cerebral aneurysms (coils, stents)	23
Recanalization of cerebral arteries in acute stroke	30
PTA/stent of extracranial arteries	18
PTA/stent of intracranial arteries	23
Embolization in a neurological area (cerebral, spinal AVM)	25
CT guided interventions – total	2 456
Targeted CT-guided nerve root and facet injections	2 141
CT-guided vertebroplasty + kyphoplasty	186
CT-guided radiofrequency ablation	15
CT-guided biopsies and drainages	114

Overview of selected radiodiagnostic examinations in 2015

Computed tomography	11 721
Magnetic resonance imaging	13 034
Angiography	2 727
Ultrasound examinations	14 721
Mammography – total	14 052
Mammography – screening	11 911
Ultrasound examination within diagnostic mammography	3 150
Breast node biopsies	175
Total number of radiodiagnostic examinations	98 864

Plans for 2016

- Our 3 T MRI scanner will be used to develop new techniques such as functional MRI BOLD imaging, MR tractography and diffusion tensor imaging, and MR spectrography. This equipment should be retrofitted by software that would enable to reach a higher quality of diffusion imaging, in particular.
- Examination sequences will be further optimized in order to ensure a maximum use of the potential of the device. In addition to the clinical routine, the new device will be used partially also for scientific applications. We plan to simplify and speed up demanding post-processing, especially in functional BOLD and DTI examinations.
- The method of epiduroscopy should be developed for non-vascular interventions in our hospital which would be the only facility in the country to use it. This technique should help patients who had undergone repeated lumbar spine surgeries and suffer from post-operative adhesions.
- We will further improve the functionality, quality and user-friendliness of the used IT, in particular NIS and PACS; we plan to transfer to the new NIS in 2016. There is a long-term focus on connecting image databases of our Department and the Department of Nuclear Medicine and on ensuring the accessibility of image data from the Department of Cardiology through PACS in order to have a united PACS accessible to all in the hospital.

Department of Nuclear Medicine and PET Center

Head of Department: Assoc. Prof. Otakar Bělohlávek, MD, CSc.

Activities of the Department:

- Functional scintigraphic imaging, including PET/CTI
- Immunoanalytical laboratory testing techniques

Organizational units of the Department:

- Nuclear Medicine Unit
- Immunoanalytical laboratory
- Radiopharmaceutical laboratory

Basic data

The Department provides complementary services within the hospital, exclusively to outpatients.

Personnel

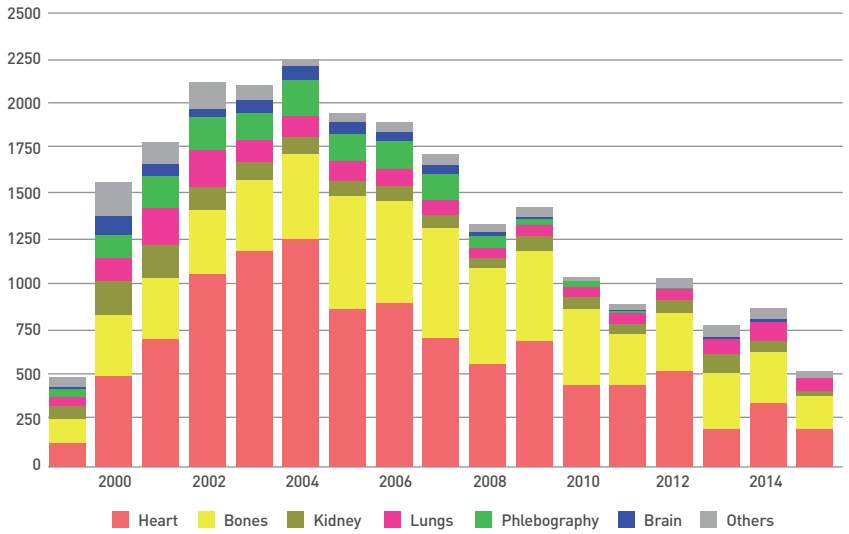
Position	No. of persons	No of FTEs
Assistant (technical-economic employee)	1	1.0
Pharmaceutical lab technician	1	1.0
Physician	8	7.6
Professional lab technician, preparation of medicines	2	2.0
Medical radiation technologist	5	5.0
Paramedical staff	1	1.0
General nurse	6	6.0
Medical technologist	5	5.0

Services of the radiological physicist are provided by the Department of Medical Physics.

Performance overview

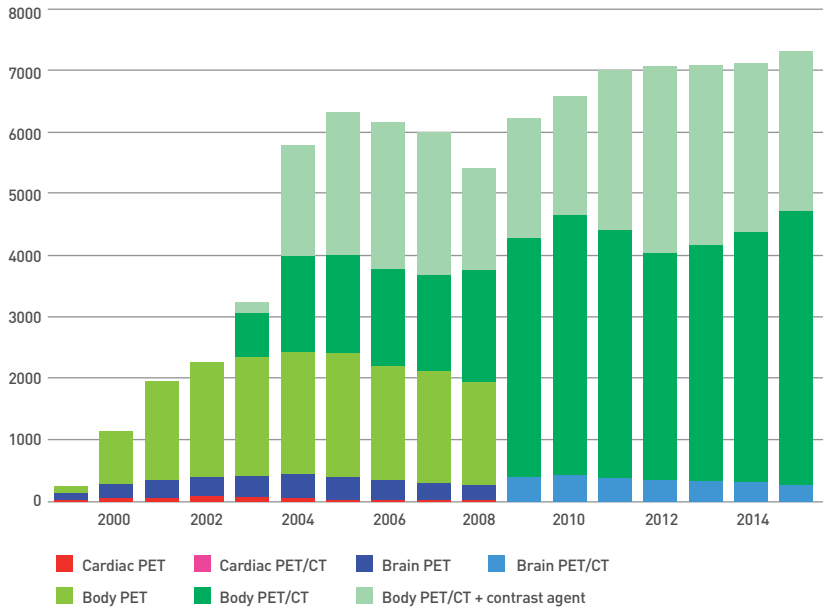
Scintigraphy

Number of examinations: 503 (a decrease of 38.4 % as compared to the preceding year). All examinations are performed using a dual-detector camera Siemens E.CAM.



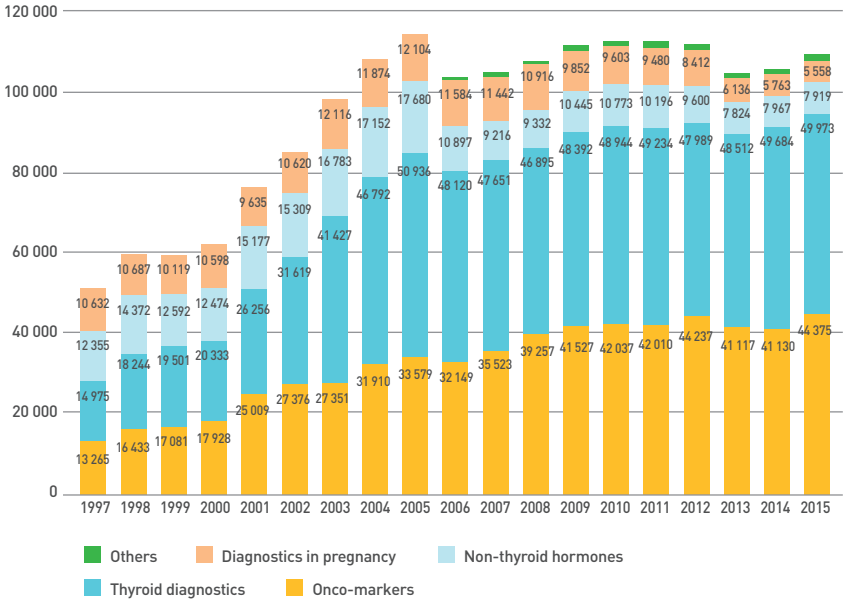
Positron emission tomography

Number of examinations: 7 369 (an increase of 3.3 % as compared to the previous year). All examinations were performed using a two hybrid PET/CT Siemens Biograph scanners. Radiopharmaceuticals for PET are supplied by the winner of the respective tender (Radiomedic, s.r.o.).



Laboratory testing methods

Number of tests: 143 555 (an increase of 3.9 % as compared to the previous year). Number of detections: 109 189 (an increase of 3.5 % as compared to the previous year). Tests are performed by means of RIA (5%), IRMA (37%) and chemiluminescence (58%) methods.



Evaluation of clinical activities

In 2015, the production in the field of PET diagnostics was again quite high as compared to other European centers, exceeding 7 300 examinations annually. The Department uses two hybrid PET/CT scanners Biograph (Siemens). The interest of clinicians in PET/CT examination was again enormous and slightly exceeded the historical maximum of the previous year. The waiting time for patients outside the Na Homolce Hospital was around 3 weeks. The number of examinations performed is limited by the system of reimbursement by health insurance companies.

Conventional scintigraphy diagnostics experienced a long-term trend of decreasing interest in this examination caused by the development of competitive radiological methods and increased PET/CT availability.

The immunology laboratory experienced an increased interest in the detection of tumor markers which reached the highest numbers ever while other segments stayed at the same level as the last year. The number of the detections performed increased by 3.5%. The results of regular independent interlaboratory inspection and accreditation by the Czech Accreditation Institute (ISO 15189:2013) document a traditionally high quality of the laboratory in the long run.

The personnel situation at the Department was to a certain extent destabilized in the fall of 2015 by the fact that 2 radiological lab technicians transferred to PTC Prague and the situation has not been fully compensated for. The Department as a whole has an established certified system of quality management pursuant to the standard ISO 9001:2008 and as a part of the hospital it follows the international JCI accreditation standards. Tenders for the delivery of PET FDG radiopharmaceutical and radionuclide phantoms were finished. The tenders for the delivery of 99Mo/99mTc generators and other PET radiopharmaceuticals could not be completed for the lack of potential interested parties.

Teaching and other specialized activities

We have been organizing study stays for experts and providing consultation services as part of the model project of the International Atomic Energy Agency (AIEA).

Development perspectives for 2016

The plan is to fill in the vacant positions and make use of all technologies installed in the Department in the scope defined by reimbursements received from health care insurance companies. Emphasis will be put on quality and efficiency of the services provided.

The waiting time for patients outside the hospital will again be about 3 weeks in case of PET/CT examination. Performance of PET/CT diagnostics is endangered by a potential unrepairable defect of one of the scanners, as its spare parts are no longer available.

A new tender for supply of material for immunoanalysis is planned and the so far unsuccessful tenders for the supply of 99Mo/99mTc generators and some PET radiopharmaceuticals should be repeated. If contract(s) are concluded on the basis of the tender for supply of material for immunoanalysis, a principal change in the configuration of the work of the laboratory will have to be made, requiring enormous efforts of the staff in order to set up new examination procedures.

All the documents maintained in the Department will be converted in agreement with the newly established general system of managed documents.

A supervised ISO 15189:2013 audit of the immunoanalytical laboratory is planned for mid-2016, as well as an update of the quality management system according to updated ISO 9001:2015 and a recertification audit.

Department of Clinical Biochemistry, Hematology and Immunology

Head of Department: Luděk Táborský, MD

Sections of the Department

- Clinical biochemistry
- Hematology
- Transfusion unit and blood bank
- Immunology
- Laboratory of molecular diagnostics

Staff

Number of physicians:	11
Number of other graduate staff:	7
Number of general nursing staff:	42
Number of auxiliary nursing staff:	8
Number of technical and administrative staff:	5
Total number of physicians:	73

Activities of the Department

- Routine measuring and consultation activities within the Na Homolce Hospital and the coverage area of Prague 5, 6 and 7 in the following specializations: Clinical biochemistry, clinical hematology, clinical immunology and allergy, blood transfusion, clinical pharmacology and molecular genetic diagnostics.
- Outpatient unit activities in the field of lipid metabolism disorders (3 units + Club for parents and children who suffer from hypercholesterolemia) and hematology outpatient unit.

A regular supervision audit was performed by the Czech Institute for Accreditation on November 3, 2015. No shortcomings were found by auditors in our facility and our status of an accredited laboratory was confirmed. In terms of economic data, the Department met the budget and volume of production planned for 2015.

Clinical biochemistry
The section provides routine biochemical services for clinical units of the hospital concentrating on diagnostics and treatment of critically ill patients in all departments. Bedside examination (POCT – point of care testing) of pH balance, selected minerals and glycaemia are carried out for inpatients in critical conditions. Analyses of minerals, enzyme activity, substrate concentrations, cardio-marker levels, amino acids, selected prohormones, vitamins, full range of lipids, drugs and their metabolites, including pharmacokinetic analysis of concentrations measured, are made for all patients. It also provides services for physicians in the covered area (Prague 5 and 6) within material delivery.

Routine operation of the DIURI FUS 2000 analyzer for urinalysis, both for urine chemical testing and urinary sediment testing, started in 2015. Further, the analyzers for acid-base balance testing placed in ICUs were replaced. New analyzers are remotely managed by our Department.

Hematology
Similarly to the clinical biochemistry section, the hematology section provides routine services to clinical departments; it performs specialized examinations of coagulation parameters for hospital departments. Monitoring of the new anticoagulation drug levels (apixaban) was newly introduced in 2015.

Transfusion unit and blood bank
The Center ensures blood supply and blood derivatives to hospital clinical departments. In 2015, the Department gradually introduced electronic requests for transfusion preparations in all hospital departments, including the possibility of feedback control of the number of prepared blood units and the performed immunohematological examination (cross-matching test). It focuses also on improvement of automation antibody screening and blood groups by Innova automatic analyzer (Biovue).

Immunology
The Immunology Laboratory carries out a wide range of examination methods for both humeral and cellular immunity, the autoimmune status of organs and systems, and for allergies. It specializes in the diagnosis of sepsis in patients in a critical condition. The Allergy and Clinical Immunology outpatient unit takes care of patients with allergies, immunodeficiency and immunopathological conditions. The latest innovation in outpatient examinations is used in patients who suffer from bronchial asthma. The examinations are carried out using a non-invasive method where the patient's exhaling function is tested for bronchial hyperactivity. The physicians provide consulting services to the hospital inpatient wards in the field of allergy and clinical immunology.

In 2015, we increased the offer of specific IgE tests performed by means of fluoroimmunoassay which is a gold standard in this diagnostic field. Consultation activities with regard to drug allergies continued to be performed for all regions of the country, as well as cooperation with the Department of Cardiology (within the IGA grant agency of the Czech Ministry of Health), Department of Vascular Surgery (the BATAPPA study under an internal grant), Department of Anesthesiology and Resuscitation of the Thomayer Teaching Hospital (clinical study dealing with sepsis).

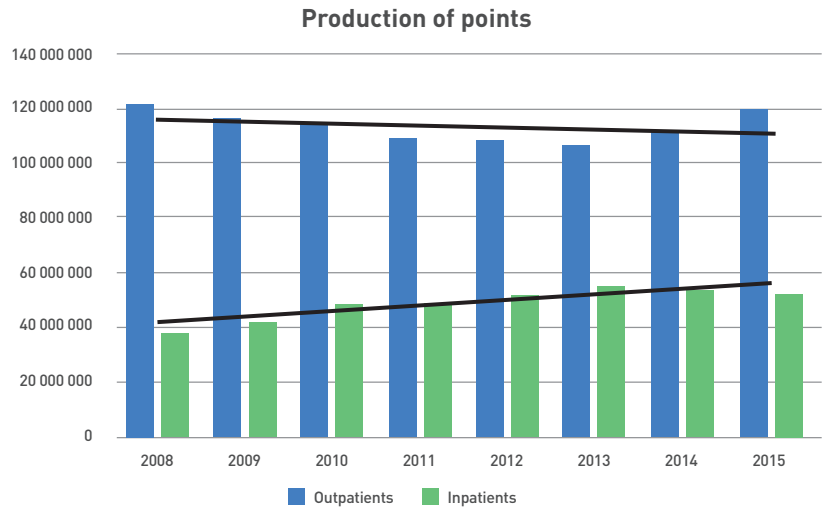
Laboratory of Molecular Diagnostics
The Laboratory of Molecular Diagnostics uses molecular genetics to diagnose hereditary diseases and genetic predispositions to common and serious diseases. Within the hospital, it specializes in issues according to the interest of individual hospital departments and according to the development plan. In addition to routine diagnostics, the laboratory also participates in clinical research projects. In 2015, the laboratory added BDNF rs6265 polymorphism to genetic testing performed as part of the neurological diagnosing of frontotemporal dementia. It also performed laboratory testing of molecular diagnostics of celiac disease, using a selected diagnostic set (BAG).

Outlook for 2016

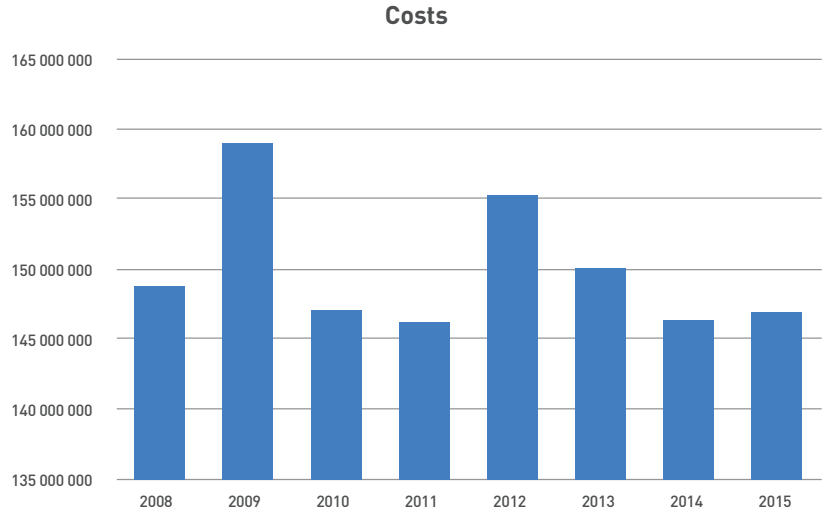
We plan to replace the device used for diagnostics and to introduce molecular genetic testing for celiac disease as a standard method. (DQA1*0501; DQB1*0201).

Economic results in 2015

This year, the Department recorded an increase in both the number of tests and the number of points, as compared to the year 2015. The number of tests/points for inpatients has been decreasing the second year in a row while the number of outpatient points increased. The total number of points increased by 3.99% as compared to the previous year, with an increase in costs of 0.37%. The economic data clearly show that the Department is profitable.



2008	2009	2010	2011	2012	2013	2014	2015
159 853 365	157 930 787	162 671 261	157 969 950	160 290 520	162 277 868	164 727 853	171 305 865



2008	2009	2010	2011	2012	2013	2014	2015
148 752 708	159 065 345	147 052 894	146 283 130	155 182 112	150 094 793	146 306 456	146 850 735

Effectiveness in 2015 (regardless of the fact that inpatient treatment is funded differently)

Point scoring	Costs	Profitability	Effectiveness
171 305 865	146 850 735	12 251 878	8 %

Educational and other specialized activities

- **Nationwide training and reference activities:** Training center of the subdepartment of the Institute for Further Training of Physicians for clinical immunology and allergy; training center of the Department of Clinical Biochemistry of the Institute for Further Training of Physicians for automated urine sediment analysis systems; center for further training in the field of hereditary metabolic disorders and lipid metabolism disorders; PhD training center; participation in the training provided at the Immunology Institute of the 2nd Medical School, Charles University.
- **Membership in professional societies:** Czech Medical Association of J. E. Purkyně, Czech Society of Clinical Biochemistry, Czech Society for Atherosclerosis, Czech Society for Allergy and Clinical Immunology, Czech Society for Immunology, Czech Society of Neurology, Czech Society for Clinical Cytology, Czech Society for Liquorology and Neuroimmunology, Czech Pediatric Society, European Atherosclerotic Society, Immunocompromised Host Society, EFNS Scientific Panel for CSF, European CSF Consensus Group, Society for Study of Inborn Errors of Metabolism, American Association of Clinical Chemistry, American Heart Association, International Federation of Clinical Chemistry, International Society for Newborn Screening, European Society for Newborn Screening

Department of Clinical Microbiology and Antibiotic Center

Head of Department: Václav Vaniš, MD

Clients:

- Na Homolce Hospital
- External clients

Number of external healthcare facilities and practices

2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
187	185	217	177	163	141	132	107	101	103	95	97	89

Laboratory diagnostics

Requests for microbiology examinations for the Na Homolce Hospital

Year	Bacteriology	Serology	Total
2003	45 952	15 194	61 146
2004	54 306	17 238	71 544
2005	51 582	15 506	67 088
2006	54 726	16 511	71 237
2007	65 033	18 485	83 518
2008	68 559	18 014	86 573
2009	58 770	10 884	69 654
2010	55 507	10 507	66 014
2011	55 648	11 835	67 483
2012	68 246	13 973	82 219
2013	71 966	14 169	86 135
2014	57 130	11 474	68 604
2015	**55 921**	**10 949**	**66 870**

Requests for microbiology examinations for external clients

Year	Bacteriology	Serology	Total	Number of practices
2003	47 969	9 989	57 958	187
2004	54 209	11 889	66 098	185
2005	49 001	10 290	59 291	217
2006	35 680	6 460	42 140	177
2007	36 687	6 631	43 318	163
2008	40 086	7 595	47 681	141
2009	33 564	4 705	38 269	132
2010	18 876	3 624	22 500	107
2011	17 804	3 409	21 213	101
2012	25 144	3 381	28 525	103
2013	23 218	3 261	26 479	95
2014	17 353	2 376	19 729	97
2015	**15 738**	**2 447**	**18 185**	**89**

Requests for microbiological tests – total

Year	Bacteriology	Serology	Total
2003	93 921	25 183	119 104
2004	108 517	29 133	137 650
2005	100 583	25 796	126 379
2006	90 406	22 971	113 377
2007	101 722	25 122	126 844
2008	108 646	25 613	134 259
2009	92 341	15 591	107 932
2010	74 387	14 141	88 528
2011	73 453	15 257	88 710
2012	93 396	17 373	110 769
2013	95 189	17 451	112 640
2014	74 502	13 935	88 437
2015	**71 659**	**13 403**	**85 062**

Antibiotic Center

Consultations provided for inpatients of the Na Homolce Hospital

Year	Number of consultations	Number of patients consulted (total)
2003	6 960	1 559
2004	7 291	1 622
2005	8 493	1 833
2006	7 922	1 870
2007	8 122	1 964
2008	7 847	2 006
2009	8 026	1 936
2010	8 049	2 051
2011	8 837	2 266
2012	9 280	2 782
2013	10 021	3 004
2014	10 215	2 478
2015	**10 599**	**2 654**

Public activities and lectures

- The Department staff presented 4 works at domestic workshops, conferences and congresses.
- The Department is part of the group of 45 laboratories monitoring resistance to antibiotics in the Czech Republic.
- The head of the Department is a member of (1) the working group for antimicrobial resistance monitoring, (2) the National Reference Center for Infections associated with Health care and (3) Society for Medical Microbiology of the Czech Medical Association of the J. E. Purkyně.

Comments

- **Laboratory diagnostics:** In 2015, the number of requests for laboratory microbiological examinations decreased, as compared to the previous year. The number of cooperating health care facilities (practices) slightly decreased.
- **Antibiotic Center:** The number of provided consultations and consulted patients increased in 2015 and reached the highest level ever. No basic epidemiological changes in the resistance of infection originators were recorded.
- **Infection prevention and control:** In 2015, the incidence of nosocomial bloodstream infections relatively decreased, namely selectively in certain departments and subgroups. The number of patients colonized or infected by MRSA decreased as compared to the previous year. There was a relative decrease in the number of infections caused by Clostridium difficile.
- **Operational and economic parameters:** The operation and economic parameters of activities of the Department were stable and comparable with 2014.
- **Certification and accreditation:** The Department received accreditation under the requirements of the ČSN EN ISO 15189:2013 standard and holds an accreditation certificate for examinations in the field of clinical microbiology.
- **External activities:** The Department cooperated with the National Reference Center for Infections associated with Healthcare within the National Institute of Public Health. The Department participated in EARS-Net (European Antimicrobial Resistance Surveillance Network) and HAI-Net (Healthcare-Associated Infections Network) programs which are organized by the European Center for Disease Prevention and Control (ECDC, Stockholm). The Department cooperates with the Higher Nursing School in Prague in providing training to laboratory technicians.

Department of Pathology

Head of Department: Martin Syrůček, MD

Activities of the Department

The Department carries out all bioptic and cytological diagnoses within the Na Homolce Hospital and, in cooperation with other laboratories providing complementary services, provides a comprehensive service to selected private and state health care facilities in Prague. Recently, consultations (second reading) of diagnostically difficult neuropathological biopsies for departments of pathology in the entire country have been provided. In addition, the Department is in charge of autopsies, including organizational services when delivering bodies to the funeral service. The Department organizes clinical pathology workshops with analysis of selected autopsies and biopsies for individual clinical departments in order to raise the quality of the medical care provided.

Organizational units of the Department

The Department performs its activities as a whole and is not comprised of individual organizational units or cost centers. Only the newly reconstructed premises are divided into a histology and cytology laboratory and laboratory of special methods (immunohistochemistry).

Basic data

Staff

- 4 physicians working full-time and one physician working part-time (0.5 FTE) based on a contract for work. A physician who passed the basic pathology set of examinations in the second half of 2015 and continues her specialized training joined the Department on 1 October 2014;
- 7 lab technicians working full-time and one member of paramedical staff and one laboratory technician for screening (0.5 FTE) based on a contract for work;
- 1 autopsy technician working full-time and one member of paramedical staff working within an alternative contract for work;
- 2 administrative assistants working full-time and one retired person (0.5 FTE) working based on a contract for work;
- 1 quality manager in charge of the requirements of the Department in connection with JCI accreditation processes and ISO 15189.

Premises

Since 2009, the Department has had newly reconstructed premises at its disposal, the arrangement and equipment of which comply with the standard ISO 15189.

They include:

- Administrative section with 5 offices for physicians, one office for the senior laboratory technician, administrative offices, rooms for employees, changing rooms, storerooms for preparations and workshop rooms;
- The autopsy unit with a dissection room, with preparation rooms and cooling space with 20 boxes for the deceased; these premises are separated by a sanitary filter;
- Laboratory premises, also separated by a sanitary filter, with 6 rooms – histology laboratory, cytology laboratory, laboratory of special methods, laboratory for cutting materials fixed in formol-saline, laboratory for cutting materials using microtomes, and a cytology screener's room.

Performance overview

Bioptic diagnostics

	2005	2009	2011	2012	2014	2015
Number of examinations	19 546	21 831	22 670	21 643	20 817	22 525
Number of slides	49 290	58 429	61 631	65 890	63 972	65 489

Cytological diagnostics

	2005	2009	2011	2012	2014	2015
Number of examinations	5 349	2 738	2 153	2 205	1 993	1 992
Number of slides	11 744	6 214	5 092	4 932	4 365	4 392
BAL (bronchoal-veolar lavage)			187	162	121	107

The number of bioptic examinations significantly increased in 2015 – by 8 (2%). The number of cytological examinations performed yearly remains at the same level as in previous years. In 2014, the laboratory of the Department significantly increased the number of immunohistochemistry examinations which is given by the complicated diagnostics of the tested samples and the necessity to increase the accuracy of classification of tumor lesions.

Autopsy activities

	2005	2009	2011	2012	2014	2015
Number of the diseased	286	270	226	216	225	196
Number of autopsies	248	154	136	122	123	122

Autopsy rate for 2015 amounts to 66.6%!

Workshops

In 2015, the physicians of the Department attended 95 clinical pathological conferences, where 21 autopsy and 753 biopsy cases were discussed.

	2005	2009	2010	2012	2014	2015
Number of workshops	127	85	98	88	102	95
Number of autopsy cases	65	82	27	20	22	21
Number of biopsy cases	377	684	612	843	837	753

Since 2002 the Department has organized, in addition to clinical and pathological workshops, also regular weekly multidisciplinary mammology workshops with the attendance of a surgeon, radiologist and oncologists, focused on analysis of biopsy examinations based on the clinical picture together with analysis of therapeutic and prognostic outlooks. Workshops are also organized once a week or once in two weeks in cooperation with the ENT Department and clinical and pathological workshops with the Center for Pulmonary Endoscopy, according to the need of clinicians. Regularly once a week the staff participate in neuro-oncological workshops with the representatives of neurosciences, oncologists and radiologists, to discuss all biopsy cases from the preceding period. Workshops with other specializations are organized as needed, as a rule twice a year. These workshops are part of the further training program of clinical departments, aimed at increasing the quality under the accreditation standards.

Changes and new events

ČIA – ISO accreditation
The Department of Pathology obtained a repeated accreditation of the Czech Accreditation Institute – ISO 15189:2013 – in May 2015.

JCI accreditation
The Department of Pathology as part of the Na Homolce Hospital participated in successful JCI reaccreditation in June 2014.

External quality assessment
Since 2011, the pathology laboratory has participated in external quality assessment in cooperation with the contractual company SEKK spol. s.r.o. The Department of Pathology obtained the certificate. Further assessment is performed by means of sent consultations.

Development perspectives for 2016

- The examination method of the sentinel lymph node in breast cancer will be introduced (in cooperation with the Department of General Surgery, Department of Oncology, Department of Nuclear Medicine and PET Center).
- Accreditation of medical specialties of the Czech Ministry of Health is expected to be received for the field of pathology.
- We will further improve the standard of diagnostics and clinical and pathological workshops.
- The range of immunohistochemical antibodies according to the needs of individual hospital departments will be extended.
- The Department will, as part of the Center for neuro-oncological section of the Czech Society for Oncology of the Czech Medical Association of J. E. Purkyně, perform so-called biobanking, i.e. keep biological material for research purposes.

Department of Biomedical Engineering

Head of Department: Ing. Ladislav Škarda

The main task of the Department is to ensure operation and service of medical equipment in the hospital including the Spa Resort Mánes in Karlovy Vary. Other activities include monitoring new trends in biomedicine. The department is divided into two sections, i.e. the section of prevention and maintenance and the metrology section.

Prevention and maintenance section

This section carries out preventive checks on medical devices as stipulated by the Act No. 268/2014 Coll. and the JCI standards. It carries out regular maintenance, ensures timely servicing by equipment providers and keeps documentation on all medical devices. This section also ensures the preparation and use of diagnostic, therapeutic and laboratory equipment and provides technical assistance for the implementation of new medical equipment. It maintains equipment for perfusion, cardiology, electrophysiology, navigation systems in neurosurgery and other areas, auto-transfusion for cardiology and vascular surgery and calibration of anesthesia equipment. Additionally, it monitors developments in the technical specifications of medical equipment on the market and prepares technical documentation for public tenders.

Metrology section

This section makes sure that the metrology standards in Na Homolce Hospital comply with the Act No. 505/1990 Coll., on metrology as amended, and the related metrology regulations. The above legislation requirements are an essential part of the directive "Metrology Order" which stipulates the responsibilities, rights and duties of employees in the use of measuring instruments, metrology safety with regard to the accuracy and reliability of the measurements of all measuring instruments in all activities of the hospital.

The metrology section carries out general maintenance and internal calibration of measuring instruments, their temperature and pressure, ensures the external benchmark calibration of working instruments measuring weight, length and time. It also organizes external official verification of the measuring devices of temperature, weight and eye tonometers.

The Authorized Metrology Center is an essential part of the Metrology Section which provides official verification of the measuring devices for indirect measurement of pressure – tonometers, within the scope of the decision of the Office for Standards, Metrology and Testing No. 61/2000.

The Department of Biomedical Engineering in the Na Homolce Hospital is a center accredited by the Czech Ministry of Health for postgraduate teaching in the Institute of Postgraduate Training in Healthcare, including a specialization in biomedical subjects in the Czech Republic. In 2015, it participated in educational activities performed for the Department of Electrical Engineering of the Czech Technical University, School of Biomedical Engineering of the Czech Technical University , 1st Medical School, Charles University and Technical University of Liberec.

Mánes Spa Resort, Karlovy Vary

Manager of Spa Resort: Ing. Aleš Gergel

Activities of the Department

The Mánes Spa Resort provides spa therapeutic and rehabilitation treatment to pediatric, adolescent and adult patients, both insured and paying. Diseases of the digestive tract, metabolic and endocrine diseases and disorders, as well as diseases of the musculoskeletal apparatus are among the accredited indication focus of treatment. In addition to the comprehensive and partially funded spa care for clients of all health insurance companies, the Mánes Spa Resort offers curative, reconditioning, special and wellness stays both to domestic and foreign private clients. A total of 2 306 patients were treated in the spa resort, of which 791 were clients of health insurance companies. The number of pediatric patients with GIT diseases and diabetes treated in the Spa Resort Mánes in 2015 reached more than 50% of the total number of all pediatric patients with the same diagnoses treated in spas in the entire country which only confirms that the spa resort ranks among the most prominent spa facilities providing therapeutic and rehabilitation treatment in the Czech Republic.

Educational activities

As every year, the spa resort organized in the period of November 20–21, together with the Czech Diabetes Society, so-called working days of pediatric diabetology and endocrinology. The guarantor of the event was Prof. Jan Vavřinec, MD, DrSc from the Clinic of Pediatric and Adolescent Medicine of the teaching hospital Královské Vinohrady. The participants were pediatricians and pediatric nurses in the field of pediatric diabetology and endocrinology from the entire country.

Development perspectives for 2016

The plans is to increase the volume of the follow-up medical care provided to patients sent to the spa resort directly from the departments of the Na Homolce Hospital and to cooperate with the Department of Rehabilitation and Physical Medicine. Holistic approach to the care of pediatric patients and their families will be further developed in the pediatric part of the spa resort. Emphasis will be placed on education of newly diagnosed diabetic patients and diabetic patients arriving to the spa resort repeatedly. We will also focus on special education of children with other chronic conditions such as celiac disease, obesity, Crohn´s disease, inflammatory bowel disease (IBD), ulcerative colitis, or liver diseases. We will further participate in the national program "Physical activity and nutrition" in cooperation with the kindergarten and elementary school of the Spa Resort Manes. Relaxing and meditation techniques will be incorporated into the treatment programs and nutrition and diet regime will be further improved. Our pilot study Screening DMT2 in obese children will continue.

AA Club Homolka

The Club of Patients with Allergies and Asthma (AA Club Homolka) as a member of the association providing help and support to children with chronic diseases has continued its activities. At present, the club has more than 100 members (families).

For nineteen years now, it has been bringing together families with children with allergies, organizing educational lectures, excursions for children and Christmas parties, publishing its newsletter "Motýlek" (Butterfly), distributing the journal "Allergy, Asthma, Bronchitis", and improving the quality of care for children with allergies and asthma. In 2015, as in the previous year, it organized and staffed a two-week treatment seaside stay in Greece. As many as 49 children aged 6–16 participated in the treatment seaside stay in August.

Research and Development Activities

Research and Development Department

The new Research and Development Department started its activities in the Na Homolce Hospital on April 1, 2015.

The Department ensures the following activities in the field of clinical studies and grant projects:

- Research project planning;
- Coordination of cooperation of organizational units of the hospital in the field of research and development;
- Administration and supervision of research projects and clinical studies;
- Regular revision of the course of research projects and clinical studies;
- Reporting (output, analysis, statistics) of research projects and clinical studies;
- Central register of research projects and clinical studies and its management;
- Preparation of internal forms and documents for clinical studies

The Section is comprised of:

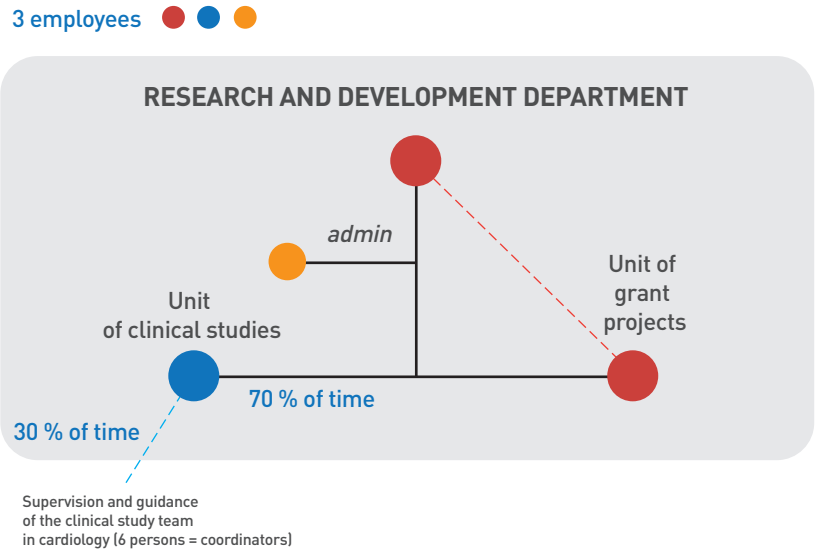
- Unit of clinical studies
- Unit of grant projects

The Section has 3 employees:

- Head of unit (managing the unit of grant projects as well);
- Head of the Unit of clinical studies;
- Administrator

Research grants

A total of 44 research grants were implemented in the Na Homolce Hospital (NHH) in 2015, of which 35 were grants provided from the institutional support of the Czech Ministry of Health and 9 were special purpose grans of the Internal Grant Agency of the Czech Ministry of Health (IGA), the Czech Ministry of Education, Youth and Sports and the Medical Research Agency of the Czech Ministry of Health (AZV).



A) Grants of the Czech Ministry of Health

- In 2015, NHH received a grant for a long-term conceptual development of the research organization for the second time in its history, based on the decision of the Czech Ministry of Health (Decision No. 1 RVO-NNH/2015). The support for 2015 was established as a share of the beneficiary in the value of research, development and innovations results of all research organizations in the Czech Republic reached in the last five years, based on the assessment performed by the Committee for Research, Development and Innovations.

The amount of support provided by the Czech Ministry of Health and its binding breakdown (in CZK)

Year	Grant type	Total	Capital	Current
2015	Grant	15 689 000.00	5 984 000.00	9 705 000.00

- The grant was used and distributed in agreement with a long-term concept of research and development in NHH, based on the approval by the NHH Scientific Committee and the Director.
- The concept is based on three main clinical programs which are the key pillars of the NHH specialized profile: cardiac program, neuroprogram, program of advanced diagnostics and specialized centers.
- The priority of NHH is to use its research potential for epidemiologically most serious diseases (heart arrhythmias, heart failure, coronary heart disease, cerebrovascular diseases, spine diseases, drug allergies), for rare diseases for which no satisfactory treatment exists (brain tumors, drug resistant epilepsy, serious infections of the central nervous system) and for the improvement of some diagnostic procedures in the mentioned nosological fields.
- In line with this concept, 19 research projects (which started in 2014) and 16 new research projects were supported in 2015 by the grant provided by the Czech Ministry of Health.
- All projects were submitted to an internal tender procedure evaluated by the specialized commission of the NHH Scientific Committee comprised of specialized guarantors for individual treatment segments.Its members were: Assoc. Prof. Petr Ošťádal, MD, PhD for cardiology and cardiac surgery, Assoc. Prof. Roman Liščák, CSc. for neurology and neurosurgery, Assoc. Prof. Petr Štádler, PhD for vascular surgery, Assoc. Prof. Petr Čáp, PhD for complementary service departments.
- A greater range of research projects was supported by NHH in 2015 in order to maintain the plan of a broader research base for the future.
- New research projects were initiated in June 2015 and still continue.
- The allocated financial sources were received in accordance with the binding decision of the Czech Ministry of Health on support breakdown for 2015 as follows:

The amount of the grant received from the Czech Ministry of Health in 2015 (in CZK)

Year	Grant type	Total	Capital	Current	Remaining part
2015	Grant	15 688 739.44	5 984 000.00	9 704 739.44	260.56

Grants approved by the NHH Scientific Committee based on institutional support provided by the Czech Ministry of Health in 2015:

Principal investigator	Department	Project code	Project title
Assoc. Prof. MUDr. Petr Neužil, CSc.	Cardiology	IG140501	Cardiac MRI in patients with implanted S-ICD
Prof. Petr Neužil, MD, CSc.	Cardiology	IG140502	Evaluation of the effectiveness of stimulation of absolute refractory period of QRS-complex by OPTIMIZER III system with non-excitatory pulse in patients with LV systolic dysfunction and EF 25–35%
Assoc. Prof. Petr Ošťádal, MD, PhD	Cardiology	IG140503	Catheter thrombectomy in the treatment of thromboembolic disease and infectious endocarditis
Assoc. Prof. Martin Mates, MD, CSc.	Cardiology	IG140504	Detection of instable arteriosclerotic plaques in coronary arteries
Filip Málek, MD, PhD, MBA	Cardiology	IG140505	Importance of the establishment of biomarker concentrations in heart remodeling together with myofibrosis biomarkers in order to evaluate the effects of resynchronization therapy
Assoc. Prof. Jana Popelová, MD, CSc.	Cardiac Surgery	IG140201	Analysis of the results of surgery in adult patients with an inborn heart defect
Assoc. Prof. Jana Popelová, MD, CSc.	Cardiac Surgery	IG140202	Importance of NT-proBNP in mortality prediction in adult patients with an inborn heart defect – database
Ivo Skalský, MD, MBA	Cardiac Surgery	IG140203	Comparison of the patency of aortocoronary bypasses with the use of external mechanical support (nitinol nets)
Ivo Skalský, MD, MBA	Cardiac Surgery	IG140204	Chronic atrial fibrillation – a randomized study to compare surgical treatment Cryo Maze vs RF epicardial and RF endocardial ablation
Assos. Prof. Roman Liščák, MD, CSc.	Stereotactic and Radiation Surgery	IG141201	Stereotactic radiofrequency amygdalohippocampectomy in the treatment of medial temporal lobe epilepsy
Ing. Josef Novotný, PhD	Dept. of Medical Physics	IG141202	Analysis of distortion and detection of geometric inaccuracy in stereotactic MRI, correlation with dosimetry
Dušan Urgošík, MD, CSc.	Stereotactic and Radiation Surgery	IG141203	Structural changes in the trigeminal nerve in MR diffusion tensor imaging after Gamma knife irradiation in patients with trigeminal neuralgia
Jan Šroubek, MD	Neurosurgery	IG141101	Use of flowmeter in neurosurgical treatment of brain aneurysms
František Remeš, MD	Neurosurgery	IG141102	Risk factors of infection in external drainage of CSF pathways
Robert Tomáš, MD, PhD	Neurosurgery	IG141103	Introduction of intraoperative monitoring of corticobulbar MEPs in tumors of the cerebellopontine angle and the brainstem
Petr Vitásek, MD	Vascular Surgery	IG140101	Endoscopic vs open harvesting of venous grafts in peripheral vascular reconstructions
Marek Šlais, MD	Vascular Surgery	IG140102	RF thermal ablation vs modern conventional treatment of varices in lower extremities

Assoc. Prof. Miroslav Průcha, MD, PhD	Immunology	IG144101	Biomarkers in the aortic tissue and plasma in patients with aortic aneurysm
Lenka Sedláčková, MD	Immunology	IG144102	Detection of late hypersensitivity to penicillin and amoxicillin by the *in vitro* ELISPOT method
Assoc. Prof. Petr Ošťádal, MD, PhD	Cardiology	IG150501	Cardiac arrest outside hospital, new possibilities of an early prognosis and affecting the post-reanimation syndrome
Assoc. Prof. Martin Mates, MD, CSc.	Cardiology	IG150502	Evaluation of morphological parameters of the aortic bulb before catheter replacement of the aortic valve; comparison of 3D echocardiography and CT examination
Assoc. Prof. Petr Neužil, Md, CSc., FESC	Cardiology	IG150503	Spinal cord stimulation in heart failure
Assoc. Prof. Petr Neužil, MD, CSc., FESC	Cardiology	IG150504	Puncture radiofrequency and minimally invasive thoracoscopic sympathectomy in patients with ventricular tachycardias (arrhythmic storm) in patients after MI and dilated cardiomyopathy
Assoc. Prof. Filip Málek, MD, Pd.D.	Cardiology	IG150505	Importance of biomarker detection, myocardial inflammation overload and extracellular matrix remodeling in prediction of the risk of heart failure in patients with arterial hypertension
Dušan Urgošík, MD, PhD	Stereotactic and Radiation Surgery	IG151201	Medial thalamotomy in intractable pain by thermolesion and Gamma-lesion – a comparison of both methods
Ing. Josef Novotný, PhD	Medical Physics	IG151202	Detection of geometric inaccuracies in merging different imaging modalities for stereotactic surgeries
Tomáš Procházka, MD	Neurology	IG151501	Effects of the PAP treatment on plasma levels of biomarkers in patients with heart failure and the syndrome of sleeping apnea
Oldřich Šoula. MD	Neurosurgery	IG151101	Dynamic monopolar electrostimulation of the corticospinal pathway in brain tumor resection
František Remeš, MD	Neurosurgery	IG151102	Pharmacokinetics of antibiotics in the CSF after their intrathecal administration in patients with meningitis or ventriculitis
Assoc. Prof. Hana Malíková, MD, PhD	Radiology/ Radiation and Stereotactic Aurgery	IG154301	Memory functions related to morphological and functional changes during MR examination and after epilepsy surgery
Radko Kříž, MD	Radiology	IG154302	Fluoroscope-guided endoscopic epidurolysis
Libor Dvořáček, MD	Vascular Surgery	IG150101	Copeptin in robot-assisted, laparoscopic and open aortic surgery
Petr Šedivý, MD, PhD	Vascular Surgery	IG150102	Endoleak after stent graft implantation into AAA and the necessary treatment of subsequent complications
Václav Maťoška, MD	Molecul diagnostics	IG154101	Effects of genetic polymorphism of rs5911 in the ITGA2B gene and allelic forms of CYP3A4*2,*11.*12,*17 on the effect of Ticagrelor in patients with acute coronary syndrome

B) Special purpose grants of the Grant Agency of the Czech Ministry of Health (IGA MZ ČR), Ministry of Education, Youth and Sports (MŠMT), Medical Research Agency of the Czech Ministry of Health (AZV MZ ČR)

A total of 9 special purpose grant projects were performed in NHH in 2015 of which 6 grants projects were finished and 3 new ones were launched.

Principal Investigator for NHH	Department	Grant project title	Allocated Number	Grant Provider	Note
Assoc. Prof. Petr Ošťádal, MD, PhD	Cardiology	Influencing oxidative stress by endovascular therapeutic hypothermia in patients after cardiac arrest	NT/12153-5	IGA MZ ČR (NHH as the main beneficiary)	Finished
Robert Tomáš, MD, PhD	Neurosurgery	Diagnostic a therapeutic potential of fibroblast activation protein (FAP) in human astrocytic tumors	NT/12237-5/2011	IGA MZ ČR (1st Medical School, Charles University as the main beneficiary)	Finished
Assoc. Prof. Ivana Štětkářová, MD, CSc	Neurology	Pathophysiological mechanisms of neuromodulation treatment in dystonia	NT/12282-5/2011	IGA MZ ČR (1st Medical School, Charles University as the main beneficiary)	Finished
Assoc. Prof. Josef Vymazal, MD, DrSc	Radiology	Multidisciplinary approach in diagnostics of frontotemporal lobar degenerations and tauopathy: comprehensive analysis of pathogenic mechanisms	NT/12094-5/2011	IGA MZ ČR (Thomayer Hospital as the main beneficiary)	Finished
Pavel Fencl, MD, CSc.	PET	Early assessment of efficiency of neoadjuvant chemotherapy for esophageal carcinoma and esophagogastric junction by means of FDG-PET/CT examination	NT/12331-5/2011	IGA MZ ČR (FN v Motole Teaching Hospital in Motol as the main beneficiary)	Finished
Prof. Petr Neužil, MD, CSc, FESC	Cardiology	Verification study on the efficiency of application of high-intensity focused ultrasound (HIFU) in extracorporeal sympathetic renal denervation in patients with resistant arterial hypertension	LH12054	MŠMT (NHH as the main beneficiary)	Finished
MUDr. Robert Tomáš, Ph.D.	Neurosurgery	New concepts of therapeutic focusing on microenvironment of human glioblastomas	15-31379A	AZV MZ ČR (Central Military Hospital in Prague as the main beneficiary)	Started
Prof. Petr Neužil, MD, CSc, FESC	Cardiology	Catheter left atrial appendage closure vs treatment with new oral anticoagulation drugs in high-risk patients with atrial fibrillation (study PRAGUE-17)	15-29565A	AZV MZ ČR (3. (3rd Medical School, Charles University as the main beneficiary)	Started
Assoc. Prof. Petr Ošťádal, MD, PhD	Cardiology	Extracorporeal membrane oxygenation for the treatment of cardiogenic shock (study ECMO-CS)	15-27994A	AZV MZ ČR (NHH as the main beneficiary)	Started

Clinical studies

- The record-keeping and monitoring of all clinical studies was the responsibility of individual specialized NHH departments until April 1, 2015.
- The only NHH department with a clinical study unit was the Cardiac Center whose team of coordinators dealt with all the administrative tasks and documents related to clinical studies.
- At present, the team continues to coordinate all clinical studies performed in the Cardiac Center (cardiology + cardiac surgery) and its activities are supervised by the Head of the Unit for Clinical Studies of the Research and Development Department.
- A new central Clinical Study Database was established during the period of April-June 2015 which is maintained and regularly updated by the Research and Development Department. At present, the database contains data of all the clinical studies performed in NHH which are/have been active since 2012.
- In 2015, a total of 86 active clinical studies were recorded of which 28 clinical studies were finished during 2015.

Number of studies performed in 2015 – by the subject

Clinical studies	Number	%
Medical devices	56	65%
Medicines	18	21%
Partial healthcare services	12	14%
Total	**86**	100%

Number of studies performed in 2015 – by the department

Clinical studies	Number	%
Internal medicine	1	1%
Cardiology	52	60%
Cardiac surgery	8	9%
Neurosurgery	2	2%
Neurology	1	1%
Oncology	8	9%
Radiology	2	2%
Nuclear medicine / PET	12	14%
Total	**86**	**100%**

Number of studies performed in 2015 – by the subject and the department

Clinical studies	Medical devices	Medicines	Partial healthcare services
Internal medicine	0	1	0
Cardiology	48	4	0
Cardiac surgery	5	3	0
Neurosurgery	1	1	0
Neurology	1	0	0
Oncology	0	8	0
Radiology	1	1	0
Nuclear medicine / PET	0	0	12
Total	**56**	**18**	**12**

Performed audits of clinical studies

In 2015, two audits of clinical studies were performed by regulatory authorities (State Institute for Drug Control – SÚKL) in the Research and Development Department:

- MAR 2015 — SÚKL audit
  Clinical study Bioventrix — No irregularities found
- SEP 2015 — SÚKL audit
  Clinical study VytronUS — No irregularities found

Workshops and trainings related to clinical studies

In 2015, the Research and Development Department organized a workshop for the entire hospital and one specialized training concerning clinical studies:

- NOV 2015 – Good clinical practice training for 19 employees of Cardiac Center
- NOV 2015 – Research and Development in NHH for 58 employees of the entire hospital

Basic breakdown of research projects in NHH in 2015:

Scientific project type	Subject	Number
Clinical studies	Medical devices	56
	Medicines	18
	Partial healthcare services for an external investigator	12
Research grants	Institutional support (internal grants)	35
	Special purpose support (external grants)	9
Research projects – total		130

Publications in 2015

Publications co-authored by the Na Homolce Hospital staff

Foreign

Chapters in books

LIŠČÁK, R. – ŠIMONOVÁ, G. Stereotactic radiosurgery for Ocular Disorders. In *Intracranial Stereotactic Radiosurgery*. New York: Thieme, 2015, s. 202–209. ISBN 978-1-62623-032-3.

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2) HANUŠKA, J. – BONNET, C. – RUZS, J. – SIEGER, T. – JECH, R. – RIVAUD-PECHOUX, S. – VIDAILHET , M. – GAYMARD, B. – RŮŽIČKA, E. Fast vergence eye movements are disrupted in Parkinson's disease: A video-oculography study. *Parkinsonism and Related Disorders*, 2015, vol. 21, no. 7, s. 797–799. ISSN 1353-8020.

3) HAVRÁNEK, S. – NEUŽIL PETR, P. – LINHART, A. Electromuscular incapacitating devices discharge and risk of severe bradycardia. *The American Journal of Forensic Medicine and Pathology*, 2015, vol. 36, no. 2, s. 94–98. ISSN 0195-7910.

4) HOLIGA, Š. – MUELLER, K. – MÖLLER, H. E. – URGOŠÍK, D. – RŮŽIČKA, E. – SCHROETER, M. L. – JECH, R. Resting-state functional magnetic resonance imaging of the subthalamic microlesion and stimulation effects in Parkinson's disease: Indications of a principal role of the brainstem. *NeuroImage: Clinical*, 2015, vol. 21, no. 9, s. 264–274. ISSN 2213-1582.

5) HROMÁDKOVÁ, L. – HEERDINK, E. R. – PHILBERT, D. – BOUVY, M. L. Association between concomitant psychiatric drug use, and patients' beliefs about and persistence with chronic cardiovascular medication. *International Journal of Clinical Practice*, 2015, vol. 69, no. 3, s. 328–335. ISSN 1742-1241.

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7) CHYTKA, T. – LIŠČÁK, R. – KOZUBÍKOVÁ, P. – VYMAZAL JOSEF, P. Radiosurgery for Large Arteriovenous Malformations as a Single-Session or Staged Treatment. *Stereotactic and Functional Neurosurgery*, 2015, vol. 93, no. 5, s. 342–347. ISSN 1011-6125.

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QUALITY AND SAFETY

International JCI accreditation

The long-term quality of healthcare, the safety of patients and the staff working at Na Homolce Hospital are the main pillars of its stability. Endeavoring to provide quality health care in compliance with clearly defined standards, Na Homolce Hospital was encouraged to apply for Joint Commission International (JCI).

The Na Homolce Hospital has had the status of "world quality"– the Joint Commission International (JCI) international accreditation since 2005, when it passed the first accreditation audit and successfully defended this international accreditation in May 2014. The fact that the NHH hospital obtained and defended the JCI certificate documents the excellent treatment care provided to our patients and the high quality of other processes carried out within the entire hospital. Both the results of the audit and primarily the outstanding results of everyday work with patients are a credit to all employees of the hospital.

The Na Homolce Hospital is the only hospital in the Czech Republic that has received JCI accreditation for the fourth time and the first to obtain accreditation pursuant to the updated JCI standards (5th edition). Accreditation is granted for the period of three years. In order to retain the certificate, the hospital will have to defend it again in three years and document improvement and optimization of procedures, particularly in the field of risk management, HR management, drug policy or continuous development of professional standards.

The Joint Commission International is a worldwide organization with a more than one-hundred year tradition of accrediting healthcare facilities. The accreditation it provides is a guarantee of safety for patients and demonstrates that the hospital continuously analyses and improves qualitative indicators in all its operations. The JCI accreditation system is based on a set of accreditation standards that cover all important activities of a healthcare facility and cover both the immediate care of patients (accessibility and continuity of care, patients and their family rights, diagnostic and therapeutic care, storing and administration of drugs, education of patients and their families, quality of care and safety of patients, prevention and checks on hospital infections) and also the management of the hospital (as regards management effectiveness, ensuring the safety of the hospital environment, qualification and education of staff, information management and communication). Each standard is further divided into individual indicators that describe what the hospital must do to comply with the given standards. There are more than 1 000 indicators in the JCI system the adherence to which is assessed by an international team of auditors during their one-week audit. Final decision on the provision or non-provision of accreditation is made by an international accreditation committee of the JCI headquarters in Chicago, based on the report of the team of auditors.

Organization Accredited
by Joint Commission International

Quality system in the Na Homolce Hospital

ISO 15189

The following laboratories: Department of Clinical Biochemistry, Hematology and Immunology, Immunoanalytical Laboratory, Biopsy Laboratory and Department of Pathology and Clinical Microbiology and Antibiotic Center have had the system of quality management in place since 2011 that was accredited in accordance with ISO 15189 of the Czech Institute for Accreditation. Standard ISO 15189 "Medical laboratories – special requirements for quality and competence" focuses on the professional management of laboratories such as the process flow of sample examination, conditions for blood taking, collection of biological material, interpretation and provision of results and also the safety and ethics of laboratory work. The accreditation quality management system in laboratories in accordance with ISO 15189 implies an increased confidence in compliance with the required level of services provided.

ISO 9001

Since 2004, the system of quality management in accordance with ISO 9001 has been in place the Department of Nuclear Medicine for the provision of diagnostic services by laboratory methods of immunoanalysis and imaging methods such as scintigraphy, computing, single photon and positron emission tomography (CT, SPECT, and PET/CT), including the preparation of radiopharmaceutical drugs. All services are provided according to an approved quality policy. This type of certification covers organization of the work, including process management, management of resources, monitoring, and assessment of efficiency of procedures.

ISO 13485

In 2014, the system management of the Department of Central Sterilization was certified in accordance with ISO 13485. The Department of Central Sterilization is a workplace that ensures disinfection, preparation before sterilization and material sterilization for all workplaces in the Na Homolce Hospital, as well as providing contractual services for offices of general and specialist practitioners.

Quality management system in the Spa Resort Mánes – ISO 9001

In 2006, the Spa Resort Mánes received the quality certificate ISO 9001 for the first time which demonstrates that a quality management system was introduced, as well as a level of management and services in accordance with European standards in the field of spa services, i.t. physiotherapy, balneology, medical rehabilitation and accommodation and boarding services. Both patients and clients are guaranteed that the Spa Resort complies with healthcare regulations and sanitary standards, ensures health and safety at work and environmental protection, purchases from checked suppliers and that it has introduced a Metrology Code and ensures continuous training and professional development of its employees. In March 2015, the Spa Resort passed a recertification audit of the quality management system and complied with the requirements of ISO 9001 for the activity of a Comprehensive Spa Treatment – Accommodation, Board and Spa Treatment.

Risk management – Stop pressure ulcers campaign

The Na Homolce Hospital joined the Word Day Stop pressure ulcers. On 19 November 2015, it organized an awareness-raising event for its employees, patients and visitors of the hospital focused on the presentation of means for the prevention and treatment of pressure sores. The event was held on the publically accessible premises of the hospital.

What do we do to prevent pressure ulcers

- Comprehensive treatment of the underlying disease;
- Pain monitoring, assessment and management;
- Physiotherapy and early mobilization of patients with the use of physiotherapeutic devices;
- Individual assessment of the risk of pressure ulcer in each patient.

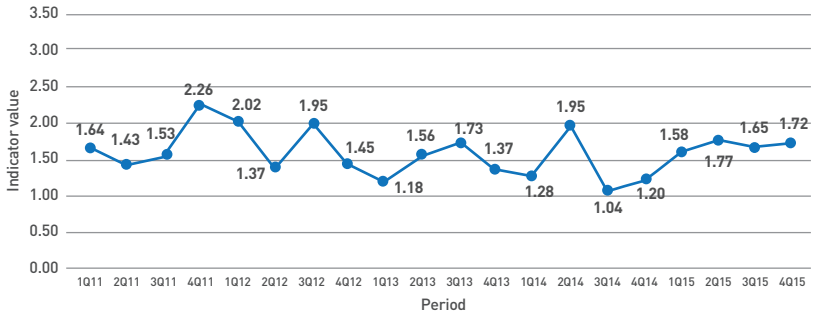
Preventive measures taken in all patients at risk

- Elimination of any source of pressure on tissues;
- Careful treatment and regular positioning of immobile patients;
- Careful treatment and regular positioning of immobile patients;
- Emphasis on clean and dry sheets and clothing;
- The use of the best anti-decubitus mattresses, positioning devices and beds with special equipment (bars, side rails etc.);
- Skin treatment using special protective cosmetic products;
- Application of film dressings on the sites at risk;
- Providing nutritionally balanced diet, cooperation with a nutritional therapist s nutričním terapeutem.

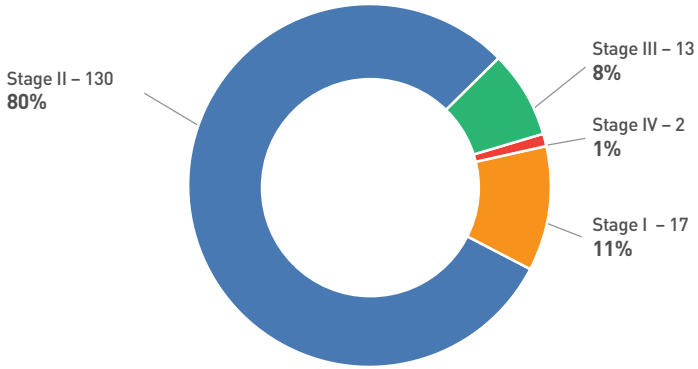
Our results

We have been monitoring the results of our work in this field since 2003 and our achievements are excellent in the long run. The Na Homolce Hospital treats annually a total of 20 000 inpatients, including patients in critical condition and after long and complicated surgical interventions. The incidence of pressure ulcers (mostly first and second degree) is less than 1%. All these cases are examined in detail and properly treated.

The number of pressure ulcers per the number of treatment days (2011-2015)



Degree of tissue damage in pressure ulcers in 2015



Monitoring of patient satisfaction

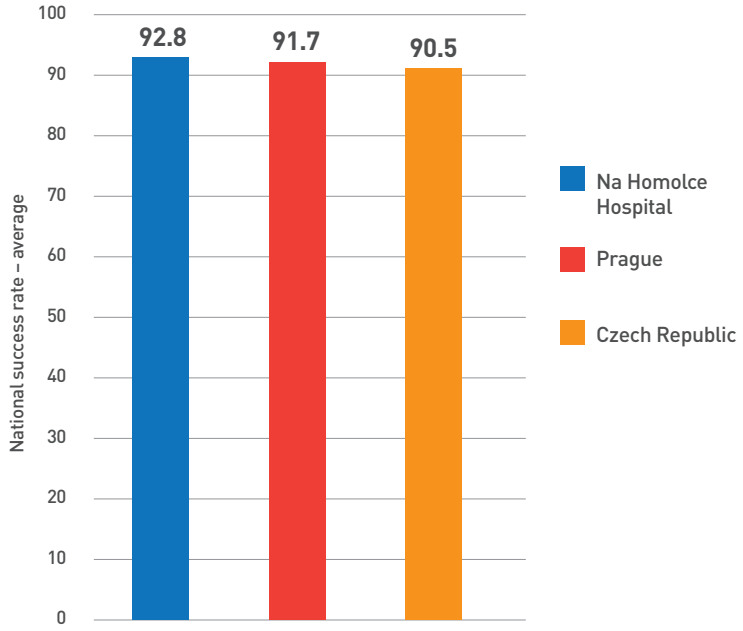
Satisfaction survey as part of the project Hospitals in the Czech Republic

The Na Homolce Hospital participated in the national survey of satisfaction of outpatients, inpatients and employees called Hospitals in the Czech Republic 2015. The aim of the project was to make a ranking of hospitals in the country in accordance with satisfaction with the quality of provided services. A total of 156 Czech hospitals were enrolled into the project. It was possible to vote by means of an electronic questionnaire or a printed questionnaire distributed directly in hospitals. The project was implemented in the period of 1 February through 31 August 2015. A comprehensive assessment of the hospitals was performed in 4 key areas: (1) satisfaction of inpatients, (2) satisfaction of outpatients, (3) satisfaction of hospital employees, and (4) financial soundness of hospitals.

Results:

- A significantly higher number of questionnaires was collected this year as compared to the previous years (5 times more than the last year), namely 2 786 for outpatient units and 1 804 for inpatient wards of the hospital.
- In the winner category (all 4 areas were evaluated), the Na Homolce Hospital scored best of all Prague hospitals ranking 4th after the hospitals in České Budějovice, Prachatice and Olomouc.
- In addition, it scored 2nd in the Central Bohemian Region in the category of employee satisfaction.
- In the category of patient satisfaction, the Na Homolce Hospital was above the regional and national average.
- The hospital may be classified as highly above average (rating A).

Satisfaction of inpatients



Satisfaction survey performed by means of the NHH form

Patients also have the possibility to express their satisfaction or dissatisfaction with our services by means of the NHH form. Special boxes have been installed in all the stories of the hospital for this purpose. It is also possible to provide comments electronically, using the Internet site of the hospital. Approximately 150 patients a year choose this possibility to express their views, mostly a positive feed-back related to the provided care.

Electronica Data Storage

The Quality Management Department introduced Electronic Data Storage in 2015 – an Internet application designed for hospital management which provides an overview of all adverse events, as well as the results of survey activities, i.e. internal audits and checks of (closed) medical records. The application will also facilitate presenting of the results during JCI audit.

The implementation of the Electronic Data Storage will ensure centralization of data collected in the entire hospital such as the results of internal audits, adverse events, falls, pressure sores, checklists of closed medical records, etc. This data will always be available on the Intranet and will enable department management and NHH top management to produce online reports for any given time period. It will be used to present hospital results in a transparent and structured way, the collection of paper data will be eliminated, the number of errors resulting from data copying will be reduced and there will be no need to prepare quarterly or yearly analyses manually (transfer of paper data to Excel tables and graphs).

The Data Storage contains structured and detailed data in the following categories: (1) Extraordinary events, (2) falls, (3) pressure sores, (4) medication errors, (5) internal audits, (6) checklists, and (7) comments of patients.

Managed documentation

In 2015, the Quality Management Department was involved in the work on a project aimed at setting and implementing rules for managed documentation in the Na Homolce Hospital. All documents are gradually transferred into a new format and they are newly classified into nine basic processes (based on the process map of the Na Homolce Hospital). As this is a demanding project in terms of time and administration, transfer of documents into the form of managed documentation will continue also in 2016.

ECONOMIC STABILITY

Costs and Revenues

Healthcare costs

	2015	2014	Increase	%
Medicines	82 401 663	94 186 642	-11 784 979	87%
Separately accounted medicines	66 114 360	54 437 106	11 677 254	121%
Blood and blood derivatives	40 380 019	38 653 611	1 726 409	104%
Special medical materials	187 351 419	184 156 890	3 194 529	102%
Separately accounted materials	737 440 519	726 792 194	10 648 324	101%

Personnel costs

	2015	2014	Increase	%
Wages	954 121 895	878 382 020	75 739 875	109%
Obligatory payments	319 557 106	293 881 638	25 675 468	109%

Other items

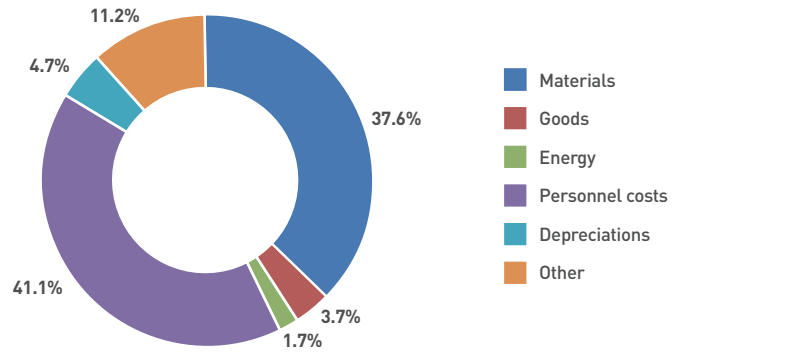
	2015	2014	Increase	%
Other consumables	72 136 058	73 344 041	-1 207 983	98%
Energy	51 152 621	51 972 166	-819 545	98%
Sale of goods	115 174 936	107 221 646	7 953 290	107%
Repair and maintenance	27 164 394	18 923 299	8 241 095	144%
Travel expenses and education	7 375 793	5 823 507	1 552 286	127%
Services	143 921 698	175 305 772	-31 384 074	82%
Other costs	150 656 526	175 168 824	-24 512 298	86%
Depreciation	144 853 960	152 789 815	-7 935 855	95%

Revenues

	2015	2014	Increase	%
Own goods and services	2 813 558 994	2 744 740 578	68 818 416	103%
- of which revenues from health insurance companies	2 752 711 137	2 671 111 941	81 599 196	103%
Sale of goods	156 671 810	143 654 581	13 017 228	109%
Financial and other revenues	151 349 320	200 424 287	-49 074 967	76%
Costs (less the income tax)	3 099 802 967	3 031 039 171	68 763 797	102%
Financial and other revenues	3 121 580 124	3 088 819 447	32 760 677	101%
Profit (loss) before taxes	**21 777 157**	**57 780 276**	**-36 003 119**	**38%**

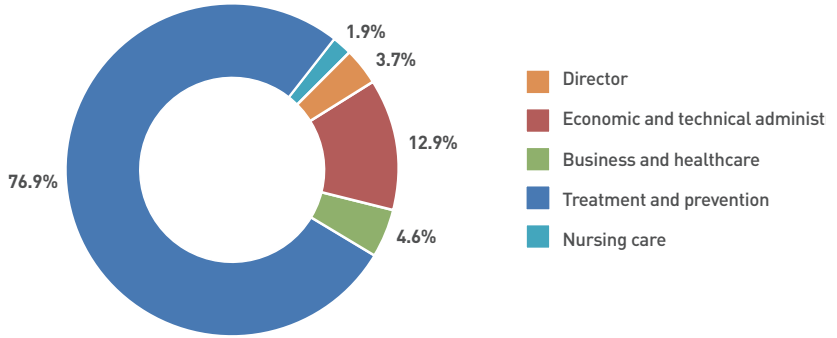
Cost structure by type

Materials	37.6%
Goods	3.7%
Energy	1.7%
Personnel costs	41.1%
Depreciations	4.7%
Other	11.2%
Total	**100%**



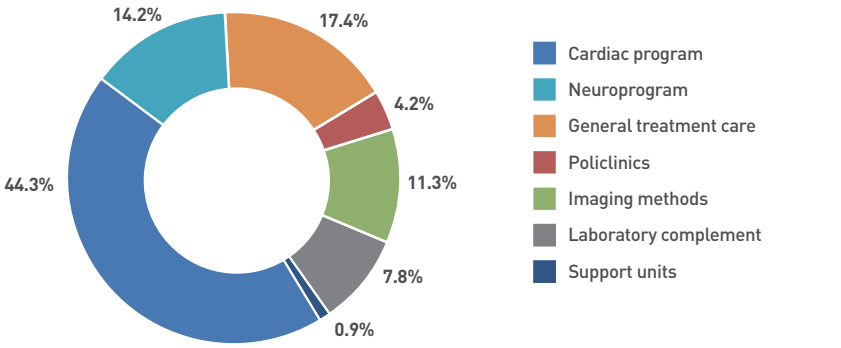
Cost structure by sections

	2014	2015	2015 v %
Director	175	113	3.7%
Economic and technical administration	382	401	12.9%
Business and healthcare	114	143	4.6%
Treatment and prevention	2 299	2 383	76.9%
Nursing care	61	60	1.9%
NNH total	**3 031**	**3 100**	**100%**



Structure of healthcare costs by programs

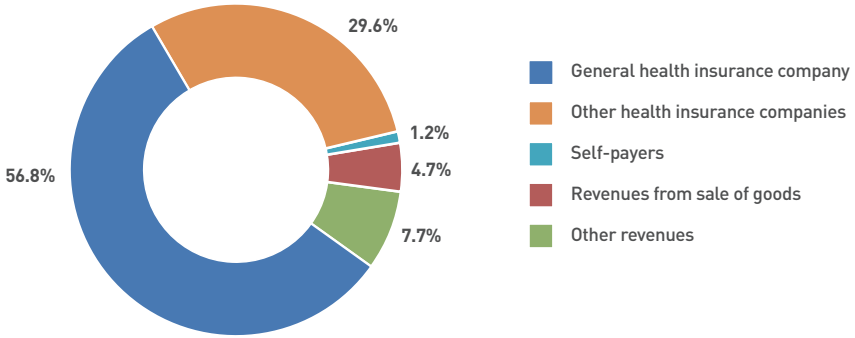
	2014	2015	2015 v %
Cardiac program	1 028	1 056	44.3%
Neuroprogram	309	338	14.2%
General treatment care	403	415	17.4%
Policlinics	93	100	4.2%
Imaging methods	260	269	11.3%
Laboratory complement	184	186	7.8%
Support units	22	21	0.9%
Treatment and prevention	**2 299**	**2 383**	**100%**



Structure of revenues

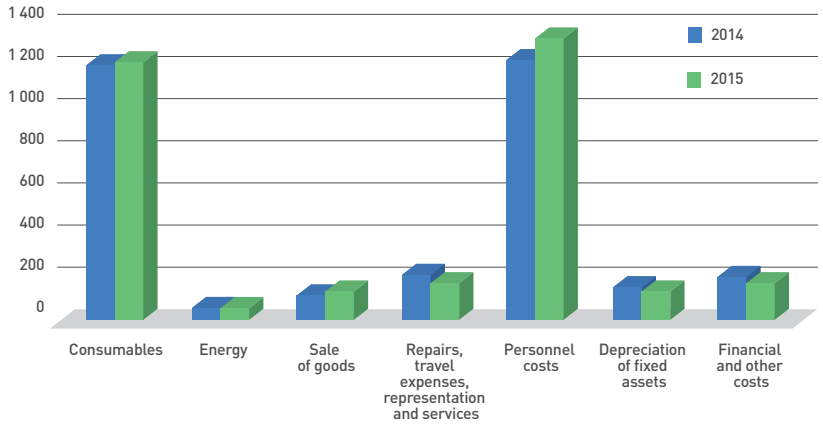
General health insurance company	56.8%
Other health insurance companies	29.6%
Self-payers	1.2%
Revenues from sale of goods	4.7%
Other revenues	7.7%
Total	**100%**

Number of points per physician	6 355 709
Number of outpatient points per physician	2 304 953

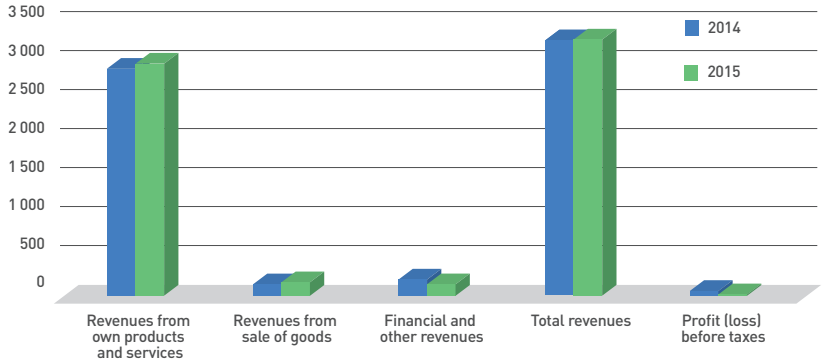


Total costs and revenues

COSTS	2013	2014	2015
Consumables	1 240	1 153	1 166
Energy	60	52	51
Sale of goods	103	107	115
Repairs, travel expenses, representation and services	196	200	171
Personnel costs	1 142	1 172	1 274
Depreciation of fixed assets	158	153	145
Financial and other costs	156	194	178
Náklady celkem bez daně z příjmů	3 055	3 031	3 100

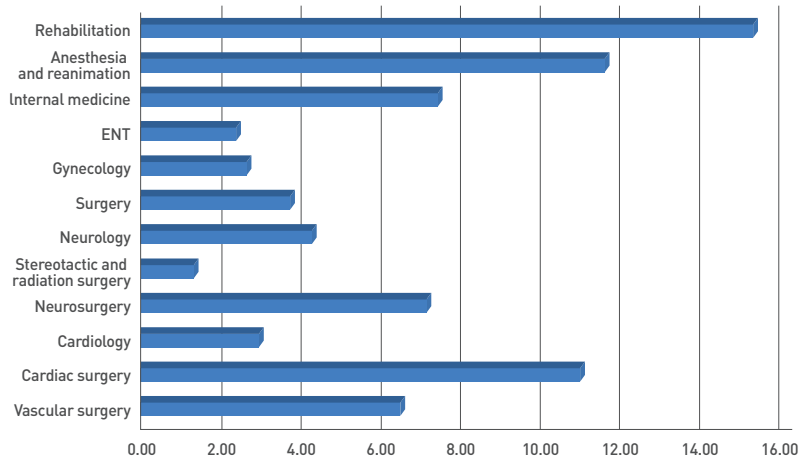


REVENUES	2013	2014	2015
Revenues from own products and services	2 673	2 745	2 814
Revenues from sale of goods	140	144	157
Financial and other revenues	276	200	151
Total revenues	3 089	3 089	3 122
Profit (loss) before taxes	34	58	22

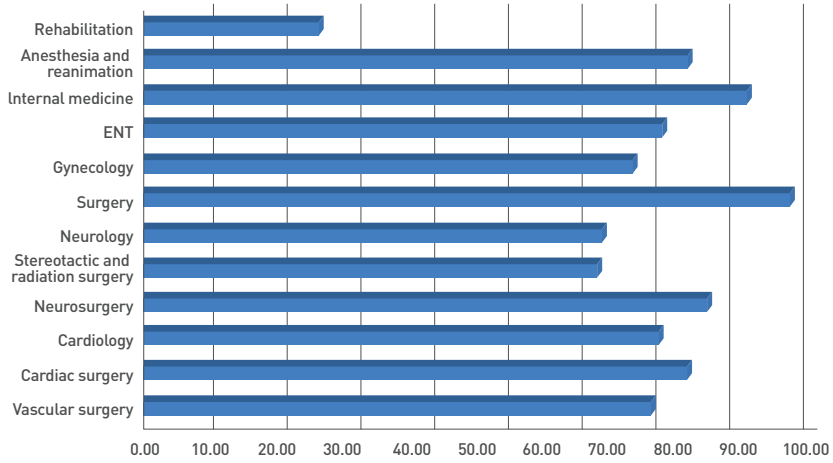


			2015			
Number	Title	Abbreviation	Mortality	Average treatment time	Treatment days	Ocupancy rate %
01	Vascular surgery	VASC	1.2%	6.4	15 381	76.21
02	Cardiac surgery	CARS	1.6%	10.9	10 026	81.3
05	Cardiology	CARD	0.9%	2.84	14 349	77.3
11	Neurosurgery	NEUS	0.7%	7.05	18 406	84.66
12	Stereotactic and radiation surgery	STRS	0.0%	1.24	1 149	68.03
15	Neurology	NEUR	1.3%	4.26	6 346	68.75
21	Surgery	SURG	0.1%	3.62	9 284	97.26
22	Gynecology	GYNE	0.1%	2.51	4 619	73.36
23	ENT	ENT	0.0%	2.32	2 947	77.78
25	Internal medicine	INT	1.9%	7.33	9 472	90.5
26	Anesthesia and reanimation	AREAN	18.7%	11.52	2 339	81.67
31	Rehabilitation	REHA	0.0%	15.25	122	25.96
NHH	**NHH**	**NHH**	**1.0%**	**4.78**	**94 440**	**80.6**

Average treatment time



Ocupancy rate %



STATUTORY AUDIT OF THE ANNUAL FINANCIAL REPORT FOR 2015

FIZA

EKONOMIKA · PORADENSTVÍ · AUDIT · DAŇOVÉ PORADENSTVÍ

Report of an independent auditor on an assessment of economic management of the state contributory organization Na Homolce Hospital for 2015

February 7, 2016

Auditors

FIZA, a.s., with its registered seat at Hrozňatova 3, 615 00 Brno, Id. No. 26252325, license No. 377

Auditor

Ing. Jiří Ficbauer, CSc.. MBA, license No. 0431

Name, seat and Id. No. of the contributory organization

Name:	Na Homolce Hospital
Registered seat:	Roentgenova 2, 150 30 Prague 5
Id. No.:	00023884

Assessment period

The assessed period is the year 2015. Said accounting period ended on December 31, 2015.

Definition of liability

The managing director of the state contributory organization is liable for the keeping of books and their completeness, conclusiveness and accuracy. Our task is to draft a report on the basis of the verification conducted, and to express our opinion on the financial statements and economic operations of the state contributory organization.

Scope of assessment

The assessment concerned the financial statements of the state contributory organization for 2015. The assessment of economic operations included the verification of data:

- in the financial statements for 2015;
- on compliance with principles of economic operations of a state contributory organization in 2015;

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- on compliance with budgetary income and expenses;
- on other monetary operations;
- on the creation and application of monetary funds, and
- on costs of and income from the core and economic activities.

The assessment further focused on disposals with assets owned by the state contributory organization. The assessment further covered public procurement and execution of public contracts, receivables and disposals with receivables, guarantees for the obligations of natural persons and legal entities, pledging and mortgaging of movable assets and real properties for the benefit of third parties, and creation of liens over assets.

The assessment of economic operations was planned and conducted selectively, with a view to the importance of individual facts, so as to enable the auditor to gain reasonable certainty for its statement.

The assessment was conducted in accordance with Act No. 93/2009 Coll., on Auditors and Amendments to Certain Other Acts (the Act on Auditors). It was further conducted in accordance with ISAE 3000 standard, "Engagements Other Than Audits or Reviews of Historical Financial. Information"; provisions of other ISA standards were applied as appropriate.

The audit was further conducted with a view to the following regulations in particular:

- Act No. 563/1991 Coll., on Accounting, as amended,
- Act No. 218/2000 Coll., on Budgetary Rules and Amendments to Certain Related Acts (Budgetary Rules), as amended;
- Decree No. 410/2009 Coll., implementing certain provisions of Act No. 563/1991 Coll., on Accounting, as amended, for certain accounting units ("Decree No. 410/2009 Coll.");
- Czech Accounting Standards for certain selected accounting units keeping books pursuant to Decree No. 410/2009 Coll. (in force as of January 1, 2010);
- Act No. 137/2006 Coll., on Public Procurement, as amended; and
- other related standard, regulations, statutory provisions and customary practice.

The scope of work performed in the assessment of the economic operations of the state contributory organization does not meet the requirements for the issuance of an auditor's opinion, and thus report is thus not an auditor's report but a verification report.

Auditor's Opinion

The assessment of economic operations of the state contributory organization included the assessment of the status of accounting books and records and other facts required to verify whether economic operations were correct, and no significant flaws were found.

The auditor is of the opinion that the economic operations and the financial statements of the state contributory organization provide a true and fair picture of assets, liabilities, own sources for the financing of fixed and current assets, debt financing and financial situation of the state contributory organization as of December 31, 2015 and the result of operations for 2015 in all material respects in accordance with the Act on Accounting and applicable regulations of the Czech Republic.

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The assessment of the economic operations of the state contributory organization revealed less significant conflict with applicable legal regulations, which does not significantly impact the financial position and performance reported, and the auditor thus issues on the outcome of assessment of the economic operations of the state contributory organization,

an unqualified opinion, with caution

concerning inadequately drafted and applied internal regulations.

Other information

Other information is deemed to mean information provided in the annual report outside the financial statements and our auditor's report. The company management is liable for such other information.

Our opinion on financial statements does not apply to other information, and we do not issue any separate opinion on such other information. However, out duties relating to the assessment of the financial statements include our familiarization with the other information in order to determine whether other information provided in the annual report might be in material conflict with the financial statements or our knowledge concerning the accounting unit, obtained during the assessment of the financial statements, whether the annual report was compiled in accordance with the law, or whether such information appears to be otherwise materially incorrect. If the work conducted by us indicates to the contrary, we are obliged to report such fact in our report.

Having conducted the above processes, we have not discovered anything of the sort in the other information received by us.

Ing. Jiří Ficbauer, CSc., MBA
auditor
license No. 0431

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Auditors
License No. 377

AUDITORSKÁ SPOLEČNOST FIZA a.s.
Č. OPRÁVNĚNÍ 377

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INFORMATION DISCLOSURE

Pursuant to the Act No.106/1999 Coll

Information Disclosure Pursuant to Act No. 106/1999 Coll., on Free Access to Information

Pursuant to the provision of Article 18 of Act No. 106/1999 Coll., on Free Access to Information ("Act"), the Na Homolce Hospital ("NHH") presents the following annual report for 2015, related to its activity in the field of information disclosure:

a) Number of submitted requests for information and the number of decisions issued on the denial of the request: NHH received a total of 10 requests for information and 1 decision on partial denial of the request was issued.

b) Number of appeals filed against the decision: None.

c) Copy of substantial parts of every court judgment on the review of the legitimacy of the decision by a legally bound person to deny information and the list of all the expenses of the legally bound person´s employees and legal representation: There was no litigation concerning review of a NHH decision to deny information.

d) List of exclusive licenses granted, including the justification of the necessity to grant the exclusive license: No exclusive licenses were granted.

e) Number of complaints filed under Article 16a, reasons for filing and a brief description of the manner of their settlement: A total of 1 complaint was filed.

Date of filing the complaint	Grounds for filing the complaint	Brief description of the manner of settlement
20. June 2014	Art. 16a(1)(b) of the Act	The complaint was accepted by NHH

f) Other information related to the implementation of this Act: None.

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