

# ANNUAL REPORT 2016



Organization Accredited  
by Joint Commission International

**HI** NA HOMOLCE  
HOSPITAL

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About us

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## A Word from the Director

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We present a yearly report of the Na Homolce Hospital, which provides comprehensive information on the hospital's economic results achieved in 2016. It also contains a brief introduction into the activities of individual departments of the hospital. In 2016, the hospital went through a major restructuring related to the winding-up of two subsidiaries: Holte, s. r. o. and Holte Medical, a. s. and entered into a standard operation regime of a public hospital. In July, the Czech government agreed to the winding up of these companies and on August 1, 2016, the activities of the subsidiary Holte, s. r. o., which had performed economic activities and accounting for the hospital in the past, were terminated. As of January 1, 2017 the activities of the second subsidiary Holte Medical, a. s., which dealt with purchasing, were terminated. The companies Holte Mateřská škola (Kindergarten) and Homolka Premium Care, a. s. were also part of the wound-up corporate structures. The kindergarten Bambinárium recommenced its activities under a new operator selected under a tendering procedure and provides its services to the employees of the hospital, in particular to their children. During the winding-up of Homolka Premium Care, the liquidator of the subsidiaries announced a tender on September 15, 2016 to sell 100% of its shares in 2017.

Despite the major and significant restructuring that took place in the whole year of 2016 and a number of fines paid for the previous economic management, the hospital succeeded in fulfilling the plan and reaching a profit of CZK 18.7 million. I am glad to be able to appreciate the work of our employees and

to highlight several major projects carried out in 2016. The main project was the putting into operation of a hybrid multidisciplinary facility, including a new robotic device, with a new mini-invasive urology facility. Another project focused on increasing the number of ICU beds in the Department of Neurology, establishing an inpatient rehabilitation unit, and floor refurbishment in ORs in the Department of Vascular Surgery or in the anti-arrhythmic unit. Until a new plan for the replacement of medical devices in the Na Homolce Hospital is prepared, which is envisaged for the year 2017, a yearly budget for emergency investments and repair was in operation in 2016 that was approved by the Investment Committee. The members of the committee were representatives of various departments of the entire hospital.

I would like to extend my thanks to all those who are involved in outstanding and demanding activities for our hospital and our patients. I would also like to thank, as every year, the Homolka Endowment Fund which has contributed to the upgrade of hospital instrumentation and to further education of young medical professionals during their internships abroad.

This year, in 2017, we will be going through the fifth international JCI accreditation audit. So far, the Na Homolce Hospital has been able to comply with the requirements of JCI accreditation standards and has maintained the international quality label. I believe that I will be able to announce the 5th successful passing of the JCI accreditation audit in the annual report of 2017.

Dr. Ing. Ivan Oliva

# Hospital management in 2016

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Dr. Ing. Ivan Oliva  
Director of the Hospital



Ing. Martin Dařílek  
Deputy Director for Economic  
and Technical Administration



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

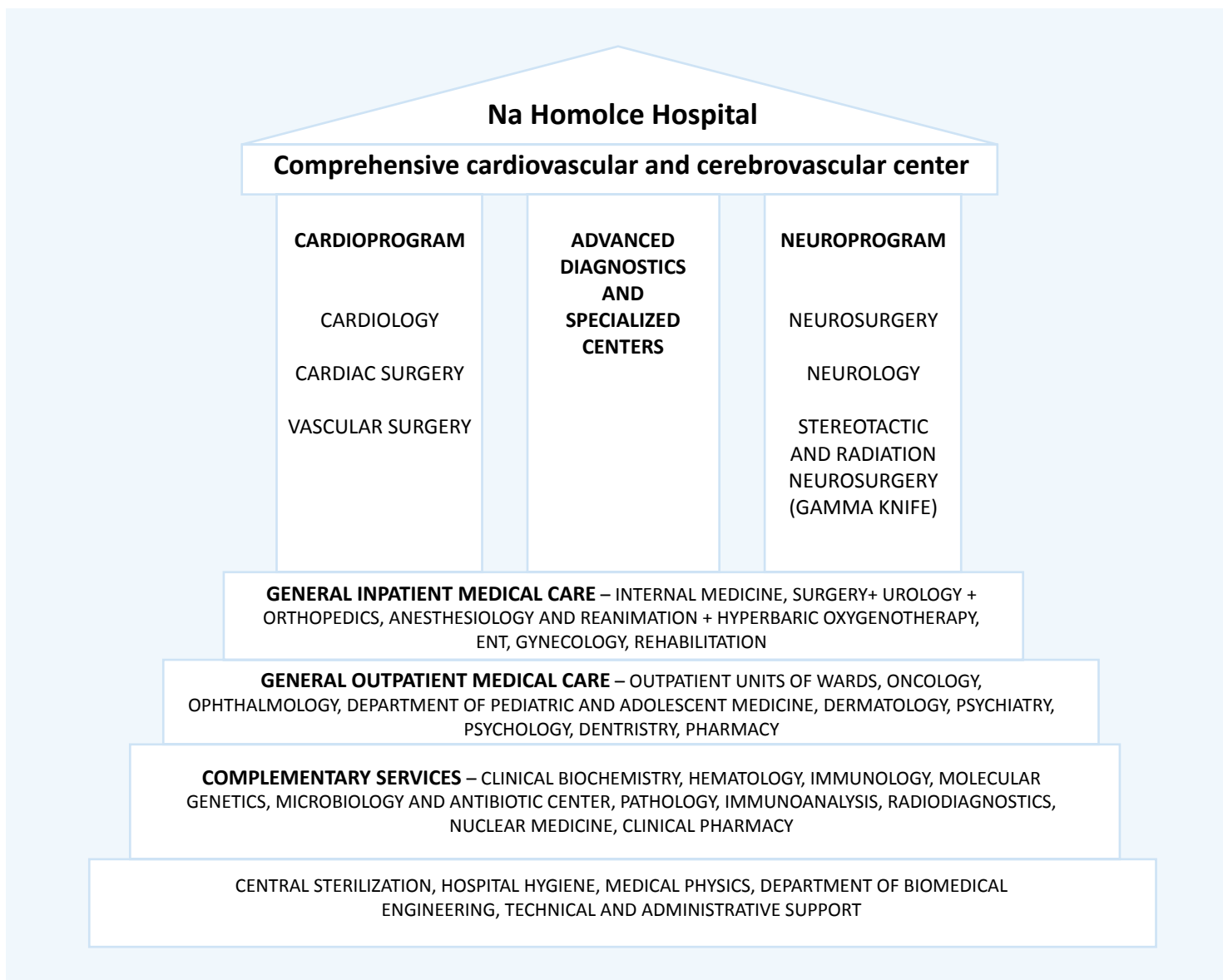


Zbyněk Fuksa, M.D.  
Deputy Director for Treatment  
and Preventive Care



Eva Kuříková  
Deputy Director  
for Nursing Care

# Hospital profile



# Basic, staff and wage data

## Basic data

Number of employees	Number of beds	Number of admissions	Number of surgeries	Number of outpatient interventions
<b>1 865</b>	<b>357</b>	<b>20 620</b>	<b>14 455</b>	<b>1 210 704</b>

## Data about staff and wages for 2016

	Physicians	Pharmacists	General nursing staff	Other non-medical professionals	Medical staff having professional qualifications	Other medical staff having professional and specialized qualifications	Technical staff	Manual workers	Total
Wages paid, total (CZK)	296 311 838	10 346 929	342 470 285	50 939 711	30 015 930	68 560 438	119 634 564	42 898 030	<b>961 177 725</b>
Average FTE	282.06	15.88	745.88	113.04	61.39	219.14	268.64	158.49	<b>1864.52</b>
Average salary (CZK)	87 544	54 297	38 262	37 553	40 745	26 072	37 111	22 556	<b>42 959</b>



Our activities

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# Neurological – Neurosurgical program



# 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 Kateřina Seltenreichová, MD, Ph.D., 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 unit 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 of 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 (in %)	85.8
Bed occupancy rate - ICU (in %)	90.6
Average treatment period (in days)	5.0
Average treatment period - standard care (in days)	4.1
Average treatment period - intensive care (in days)	9.8
Number of admissions	1 693 (122% of year 2015)
Total number of outpatient examinations	18 426 (105% of year 2015)

### Performance overview

#### Inpatient admissions

The EMU admitted 182 patients, of which 13 patients were monitored by surgically implanted electrodes while 40 patients were indicated for epilepsy surgery, i.e. an open surgery or implantation of a vagal stimulator (14 implantations) or for stereotactic thermal lesion.

# Neurological – Neurosurgical program

Other complicated cases continued to be treated in ICU. A total of 44 mechanical removals of endovascular thrombi and intra-arterial thrombolysis procedures, as well as 72 intravenous thrombolysis procedures were carried out – an increase as compared to 2015. The ICU capacity, in particular for patients with acute ischemic stroke, increased significantly; however, it is still limited by an inadequate number of beds for chronic respiratory and follow-up care, which results in long-term hospitalization in the ICU. In total, 86% of patients were admitted from Prague or Central Bohemian region and 14% from other regions of the county.

## Outpatient examinations

The year-on-year comparison shows a significant increase in the number of outpatient examinations (105% as compared to 2015). 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 ultrasonography 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 (3 fellows + training of a specialized epileptologist), electroencephalography (training courses, 3 fellows) and electromyography (2 fellows). In 2016, specialized undergraduate training in neurology of students of the 3rd 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. A total of 40 patients were operated on. Long-term results of epilepsy surgery exceed the world standard in certain parameters. The Department closely cooperates with the Department of Cardiology in diagnosing unclear disorders of consciousness.

- The Department continues to be perceived and used 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. The Center treated 216 patients, of which 62 were indicated for therapy by permanent overpressure in the airways (CPAP or BiPAP).
- The concept of a Comprehensive Cerebrovascular Center still managed by M. Kalina, MD, has been successfully implemented. There are only three such centers in Prague and the Central Bohemian region. Two graduates were hired to fill in two vacant medical positions in order to deal with a significant increase in provided care.

## Perspectives for the next year

The basic goal is to achieve a slight increase in overall production in admissions (CaseMix). In 2017, the Department plans to use its higher capacity to further 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 Training in Healthcare, organization of the course in acute neurology (Dr. Kalina), study stays in the field of neurointensive care, active participation in congresses abroad, a number of presentations at domestic national events, teaching activities at the 1st and 3rd Medical Schools, Charles University (Dr. Vojtěch), EMG study stays.

# Neurological – Neurosurgical program

## Department of Neurosurgery

| Head of Department: Jan Klener, MD

The Department of Neurosurgery continued to deal with comprehensive diagnostics, surgical treatment and follow-up care of patients suffering from diseases of the central and peripheral nervous system in 2016 in order to provide comprehensive and safe services that improve life quality of patients.

### Department's activities

These activities mainly involve 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 has been put on the high quality of surgical and postoperative care, using modern methods and technology, minimizing stress and risks for patients, good communication with them, and observance of JCI accreditation standards.

Patient care was traditionally provided in four key areas - as part of the neuro-oncological, neurovascular, functional neurosurgical and spinal programs. In 2016, a total of 2 723 surgeries were performed, 2 568 patients were admitted and 14 110 patients were seen in the out-patient unit.

The Department of Neurosurgery is a superregional, national or even international center for a number of treated diagnoses. Morbidity of planned surgeries corresponds with national and global data. These are mainly patients with serious diseases which can only be treated in a small number of centers in the country.

In 2016, surgical treatment was performed in a multifunctional complex of operating rooms equipped with state-of-the-art technology, including intraoperative magnetic resonance imaging (MRI) and surgical navigation 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.

### Neuro-Oncological Program

Within the Neuro-Oncological Program, operations of a wide range of brain tumors, including both intra-axial and extra-axial 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, a "keyhole" craniotomy and "non-retraction" neurosurgery, minimizing trauma to the brain, are preferred. The Department of Neurosurgery of 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 and perioperative duplex ultrasonography. The safety and accuracy of surgical operations are increased by using functional neuronavigation, intraoperative fluorescent visualization of tumors or intraoperative electrophysiology monitoring. In the field of electrophysiological monitoring, we promote the use of subcortical stimulation integrated in the suction device that is permanently placed in the surgical field, leading to increased safety of the procedure. Resections of speech centers are routinely performed by means of a so-called "awake craniotomy" which means that part of the procedure is performed on the patient who is awake. Neuroendoscopic treatment has been further developed and used in selected cases of pituitary adenoma. In 2016, endoscopic endonasal approach was increasingly used also to resect tumors located intradurally.

# Neurological – Neurosurgical program

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In addition to its own surgical program, the Department of Neurosurgery also promoted other treatment methods for patients with brain tumors, 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).

## **Neurovascular Program**

With regard to neurovascular program, the Department of Neurosurgery is part of the Comprehensive Cerebrovascular Center which was established in the Na Homolce Hospital in April 2010.

The main task is to provide comprehensive care to patients with subarachnoid hemorrhage which includes both treatment of the most frequent cause of bleeding, i.e. cerebral aneurysm rupture, as well as neurocritical and other types of care. A wide range of microsurgical and endovascular treatment techniques are available. In 2016, microsurgical treatment included a broad range of currently used methods - plain clipping, clip reconstruction, temporary clipping and remodeling, trapping and indirect methods using vascular occlusion and revascularization bypass techniques. Neurosurgeons have applied a mini-invasive approach to surgery and cerebral retraction, routinely used electrophysiological imaging, state-of-the-art intraoperative video-angiography and the selectively useful method of flowmetry. In individual cases, circulation was stopped by means of adenosine during cerebral aneurysm surgeries. In the field of endovascular treatment, interventional radiologists have at their disposal all currently available endovascular methods for aneurysm treatment. Microsurgery and endovascular treatments are available around the clock.

The year 2016 saw large numbers of operations on unruptured aneurysms, arteriovenous malformations and cavernomas, as well as numerous operations to stop spontaneous intracerebral hemorrhage. In cooperation with the Department of Neurology, procedures were performed in accordance with

prepared indication criteria for decompression (pressure relief) craniotomy for some types of ischemic cerebral strokes, as well as bypass procedures between extra- and intracranial blood flow.

The safety of surgical procedures to treat vascular lesions can be increased by using microscope fluorescence mode which shows patency of critical vessels and obstruction of pathological vessels after the application of a special fluorescent agent. Procedure safety is also increased by a flowmeter measuring blood flow in individual arteries. Monitoring of blood flow allows for a prompt response to hemodynamic changes and prevents critical lack of blood supply to individual parts of the cerebral tissue.

## **Functional Neurosurgery Program**

The Functional Neurosurgery Program mainly includes epilepsy surgery and neurosurgery aimed at reducing pain. The Department of Neurosurgery in the Na Homolce Hospital is one of the largest centers in the county for epilepsy surgery. In cooperation with the Neurology Department, Leksell Gamma Knife Center, Department of Radiodiagnostics, and PET Centre, approximately 30-40 patients are operated on each year.

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 MRI 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 thermal lesion.

The main procedures aimed at alleviating pain include a 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.

# Neurological – Neurosurgical program

## 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 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 stabilizers at its disposal. Minimally invasive character is preferred also for major fixation surgeries which can be performed by means of novel, safe techniques. Further, minimally invasive percutaneous vertebroplasty or kyphoplasty are used which are most commonly performed to treat osteoporotic fractures of the vertebral column, in cooperation with intervention radiology.

The range of spinal tumor operations included in 2016 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	18
Number of general nursing staff	88
Number of outpatient examinations	14 110
Number of admissions	2 568
Bed occupancy rate (in %)	83
Average treatment period (in days)	7.0

## Breakdown of interventions

Cerebral tumors	225
Vascular diseases	223
Functional procedures	63
Spinal diseases, including tumors	1 671
Cranio-cerebral injuries	81
Other	460
Total	2 723

## Educational, research and other specialized activities

- The Department of Neurosurgery of 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) in the Czech Republic and the Eastern European region.
- In 2016, neurosurgeons of 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 2016, 5 internal grant projects were carried out in the Department of Neurosurgery. The physicians took an active part in international and national congresses and had 10 presentations in 2016. Further, 2 articles were published in an international impacted journal and 3 physicians took part in long-term fellowship in first class facilities in the US.

# Neurological – Neurosurgical program

## 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 care provided to our neurosurgical patients, our outpatient unit provides also specialized ophthalmic and neurosurgical consulting care.

### Organizational units of the Department

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

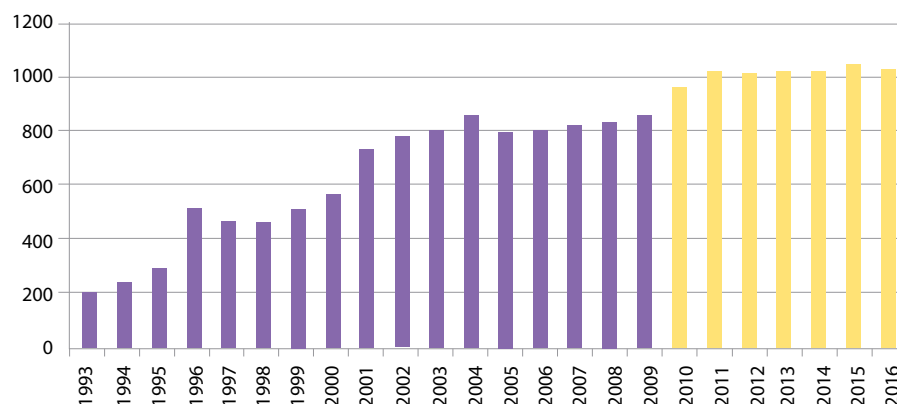
**Inpatient clinic:** 1 operating room for stereotactic and functional neurosurgery, Leksell gamma knife treatment unit

### Operational data

Number of physicians:	4 + 2 external ophthalmologists, 2 neurologists 2 systemized posts (vacant at present)
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)
Number of operations performed using Leksell gamma knife:	1 025
– Of which 100 were foreigners (9.8%) – Poland 23, Slovakia 71, Lithuania 4, Latvia 1, Ukraine 1	
– Form E 112:	62
– Self-payers from EU:	37

– Contractual price:	1
Number of other OR surgeries:	147
– Of which deep brain stimulation 34 (16 primary implantations, 18 reimplantations), 4 implantations for self-payers from Serbia	
Number of admissions:	997
Average treatment period:	1.18 dne
Bed turn-out:	223.45
Outpatient examinations:	2 519
Consultations sent by mail:	4 200

### Number of patients treated by the gamma knife in individual years (yellow - following installation of the Perflexion model)



### Changes / new events in 2016

- In 2016, a total of 1 025 patients were treated by the gamma knife. Thus, the number of treated patients remained high despite a 3-week planned lay-off on the turn of July and August due to an exchange of radioactive sources. The treatment was speeded up by more than 50% after new cobalt sources were installed. A large percentage was still made up by foreigners (10.8%). Only one foreign patient outside EU paid a contractual price for gamma knife treatment.



# Neurological – Neurosurgical program

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- Consultations were continuously provided to patients with extrapyramidal disorders by Prof. Evžen Růžička, MD, DrSc. and Prof. Robert Jech, MD, PhD in the outpatient unit for musculoskeletal disorders within the department. 4 Serbian patients paid contractual prices for deep brain stimulation for motoric disorders.
- The number of ophthalmology indications was similar as in the previous year - 23 patients with ophthalmological disorders.
- In 2016, we offered further international radiosurgical courses, together with the Department of Medical Physics. 4 courses were organized with the participation of 22 healthcare professionals from USA, Japan, Australia, Singapore, Netherlands, Greece, Serbia, Turkey, Malaysia, Indonesia, and Iraq.
- We participated in further multicenter studies within the “International gamma knife research group” and our first two co-authored articles were published in impacted journals.

## Outlook for the next year

- In 2017, it is imperative that the vacant positions are filled in before summer holidays; otherwise, the operation of the department would have to be reduced.
- We will continue in organizing 4-day training courses for foreign participants. A total of 5 dates have been announced.

## Educational and other specialized activities

- One neurosurgeon took part in a one-week compulsory postgraduate internship in neurosurgery within the Institute of Postgraduate Healthcare Education in our department.
- In the course of 2015, the gamma knife was visited by 210 registered visitors in the controlled area.
- 3 grant projects supported by the institution and 1 project supported by the Czech Grant Agency are carried out.
- Dušan Urgošik, M.D., CSc., was awarded the “Prize of the Minister of Health for research and development in healthcare for 2016” for his extraordinary results of the project of applied research and development in healthcare: Pathophysiological mechanisms of neuromodulation treatment of dystonia.

# Cardiovascular Program

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# 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 2016.

### Multifunctional Catheterization Unit

**The number of catheterization ablation procedures has been steadily increasing over the last years which was confirmed also in 2016 when the number totaled 1 146 to reach the highest number in the Czech Republic.**

The so-called comprehensive interventions (ablations 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 2016 and reached 674 interventions in total. Patients with paroxysmal atrial fibrillation account for almost half of all ablations of atrial fibrillation while the second half is comprised of patients with persistent or long-term persistent atrial fibrillation, which means that the number of ablations for persistent atrial fibrillation is also increasing! The number of catheterization ablation procedures for ventricular tachycardia is rising as well; in 2016, 119 of these interventions were performed.

The Department still routinely uses the method of remote magnetic navigation Niobe II (Stereotaxis) for ablation. There were 180 of these procedures. **In 2015, our laboratory was newly equipped with a state-of-the-art mapping system Rhythmia** which is used for a more precise ablation procedure for reentry and focal atrial arrhythmias. New technologies contribute to the increased quality of care provided to our patients. Paroxysmal forms of atrial fibrillation continue to be ablated by means of balloon-based ablation methods (cryoablation, laser and newly radiofrequency ablation) which are advantageous in reducing the time needed for the procedure.

In 2016, we were involved in the clinical development and efficacy and efficiency verification of new mapping and ablation technologies, such as dipole density mapping (ACUTUS Medical), new generation of laser balloon (Cardiofocus, Heart Light), ablation using a catheter with a diamond tip (ACT), balloon method using radiofrequency current (Biosense Webster, Apama), robotic ultrasound non-contact navigation and ablation (VytronUS), etc.

**In terms of the number of implanted pacemakers and defibrillators (ICD - implantable cardioverter defibrillator), the Department has been one of the largest centers in Czech Republic and Europe in the long run. A total of 1 126 implantation procedures were performed in 2016.** The focus is primarily on implantation of defibrillators (486 procedures) and cardiac resynchronization therapy (224 procedures). The Department continues to use the method of implantation of subcutaneous ICDs and implanted 25 of these devices in 2016. As far as removal of stimulation or defibrillation electrodes is concerned, 79 of them were performed in 2016, with the success rate of 98%.

**Since 2012, the Department has been the world-leading center for implantation of leadless pacemakers.** Since 2012, when the first implantation of a leadless pacemaker was performed in our Department, more than 150 of these new types of pacemakers were implanted in the 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. Minimally invasive remodeling surgery of the left ventricle (BioVetrix) has been developed in cooperation with cardiac surgeons.

# Cardiovascular Program

Implementation of the project of experimental laboratory went on in the Institute of Physiology of the 1st Medical School, Charles University. Experiments with different types of cardiac support, new ablation technologies and device treatment have been performed.

## Intervention cardiology

A total of 3 376 catheterization interventions (approximately the same number as in 2015), 3 020 diagnostic coronary angiographies and 905 percutaneous coronary interventions were performed. **The program of structural cardiac interventions** is being further developed, including for 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 performing the highest number of these interventions.**

**The transcatheter aortic valve implantation (TAVI) program went on also in 2016, with a total number of 25 interventions, including 2 transapical procedures.** This program is highly complex both with regard to the scope of diagnostic preoperative examinations and interventions and to demanding multidisciplinary cooperation.

**After the first catheterization implantation of the pulmonary valve was newly performed in 2015 in a patient with a complex congenital heart defect, we performed this procedure in 4 more patients in 2016. This has led to further development of the program for these interventions which will be an integral part of care for patients with complex congenital heart defects who have been systematically treated on a long-term basis in our Cardiac Center.**

The development of percutaneous coronary interventions 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, including a workshop attended by more than 40 physicians from the country.

## Non-invasive cardiology

**The highest number of examinations (a total of 47 280) was reached in the field of non-invasive cardiology.** The number of transthoracic echocardiography examinations again exceeded 7 000 and the number of **esophageal echocardiography procedures totaled 1 138, which is the highest number of these procedures ever performed in the Department.**

## Multifunctional Catheterization Unit

<b>Total</b>	<b>1 146</b>
Ablations according to arrhythmias:	
Atrial fibrillation	674
Atrial flutter and ventricular tachycardia	180
Atrioventricular nodal reentry tachycardia (AVNRT)	129
Wolff-Parkinson-White syndrome (WPW syndrome)	42
Radiofrequency AV node ablation	36
Structural ventricular tachycardia	69
Idiopathic ventricular tachycardia	50
Left atrial appendage occlusion	34
Renal denervation	10
<b>ICD (implantable cardioverter-defibrillators) - total</b>	<b>520</b>
ICD: implantation	329
ICD: exchange	191
Biventricular ICD - total:	236
VI ICD - total:	144
DDD ICD - total:	115
Subcutaneous ICD - total:	25
<b>Pacemakers - total</b>	<b>644</b>

# Cardiovascular Program

VVI pacemaker	408
DDD pacemaker	236
Biventricular pacemaker	171
Stimulation electrode extraction - total:	463
Subcutaneous recorded implantation (Reveal) - total:	10
Stimulation electrode extraction - total:	79
Subcutaneous recorded implantation (Reveal) - total:	55

## Intervention cardiology

Diagnostic catheterization	3 025
Ventriculography	500
Bilateral cardiac catheterization	205
Percutaneous coronary intervention (PCI)	905
Primary PCI (in patients with acute MI)	223
Number of stents	1 257
Fraction flow reserve (FFR)	306
Intravascular ultrasound	55
Catheterization occlusion of atrial septum defect / patent foramen ovale (PFO)	59
Transcatheter aortic valve implantation (TAVI)	25
Percutaneous pulmonary valve implant (PPVI)	4

## Non-invasive cardiology

General outpatient unit	14 272
Angiology outpatient unit	6 727
Stimulation outpatient unit	7 319
Anticoagulation outpatient unit	3 264
Transthoracic echocardiography	7 642
Esophageal echocardiography	1 138

Outpatient monitoring: Holter ECG + Loop monitor + Omron EKG + BP monitor + ECG card	3 575
ECG stress test (ergometry)	636
Tilt test	80
Outpatient electric cardioversion: Antiarrhythmic unit	171
Outpatient electric cardioversion: Coronary unit	494
Outpatient electric cardioversion - total	665

## Coronary unit

Acute coronary syndrome	415
Extracorporeal membrane oxygenation (ECMO)	20
Artificial pulmonary ventilation (APV)	107
Length of stay (median)	3
Total mortality (in %)	8,00

## 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	38
General nursing staff	127
Number of outpatient examinations	45 840
Number of admissions	5 008
Number of treatment days	14 057
Bed occupancy rate (in %)	74,99
Average treatment period (in days)	2.81

# Cardiovascular Program

## Department of Vascular Surgery

| Head of Department: Prof. Petr Štádl, 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 coronary arteries, the ascending aorta and 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 a radiofrequency method that reduces postoperative pain and facilitates early return to daily routine activities;
- Referential 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, 1 hybrid interdisciplinary OR and 1 OR for robot-assisted operations to be used once 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	109
Number of auxiliary nursing staff	23
Number of paramedic staff	1
Number technical and administrative staff	6
Number of standard beds	34
Number of semi-intensive beds	13
Number of intensive beds	12
Number of admissions	2 531
Number of hospitalized patients	1 835
Bed occupancy rate (in %)	76
Average treatment period (in days)	7.52
Number of treatment days	18 756
Mortality (in %)	1.15%

### Number of interventions

<b>Surgical interventions - total</b>	<b>1 515</b>
Thoracic aneurysm - classical	23
Thoracic aneurysm - stent graft	30
Abdominal aneurysm - classical	58
Abdominal aneurysm - stent graft	53
Aneurysm of pelvic arteries	2
Aneurysm of popliteal artery	13
Aortofemoral reconstructions	50
Pelvic reconstructions	39
Extra-anatomic reconstructions	47
Treatment of infections of vascular prostheses	14
Operations on branches of the aortic arch	154
Of which: Carotids - endarterectomy	143
Glomus tumor	0
Carotid aneurysm	0
Bypass or implantation of carotid/subclavian	8
Bypass from ascending aorta (sternotomy)	0

# Cardiovascular Program

Femoropopliteal proximal reconstruction	69
Reconstruction of arteries in the groin area	60
Crural reconstructions - total	130
Varicose veins	390
Of which: Classical	326
Radiofrequency	64
AV shunts	36
Transplantation of vascular allografts	15
Robot-assisted surgeries - total	23
Of which: Abdominal aortic aneurysm	9
Aortobifemoral bypass	5
Aortofemoral unilateral bypass	6
Endoleak	0
Deliberation of the celiac artery	2
Splenic artery aneurysm	1
Laparoscopy surgeries:	10
Of which: Iliofemoral	4
Aortobifemoral	3
Aortofemoral	3
Thoracoscopic thoracic sympathectomy	6
Lumbar sympathectomy by laparoscopic method	3
Endoscopic harvesting of great saphenous vein for vascular reconstructions	9
Vascular intervention in collaboration with radiologists	362
<b>Number of outpatient examinations / number of examined patients</b>	<b>13 697 / 7 932</b>

## Department operation in 2016

Since January 2008, the Department of Vascular Surgery has been managed by Prof. Petr Štádl, MD, PhD, who is also a member of the external educational staff of the 1st School of Medicine, Charles University, with which the Department actively cooperates. 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 2016, 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 coronary arteries, the ascending aorta and 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 sympathectomy procedures, 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 in particular 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 thoraco-abdominal aortic surgery. The number of these types of procedures increased in 2016. Since January 2014, Prof. P. Štádl acts as Vice-Chairman of the Czech Society for Cardiovascular Surgery.

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 of the Na Homolce Hospital. A specialized team of vascular surgeons and radiologists (P. Šedivý, M.D., PhD, K. El Samman, M.D., H. Přindišová, M.D., A. Šnajdrová, M.D.) has been established for this purpose and successfully continues in performing these activities.



# Cardiovascular Program

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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 General Teaching Hospital in Prague and the Tissue Bank of the General 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.

In 2016, a new hybrid multidisciplinary OR was opened to which planned stent graft implantations and hybrid procedures were moved.

## Outlook for 2017

The Department will provide comprehensive diagnostics and the complete range of surgical treatment of arterial and venous diseases focused on new trends also in 2017. 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. Successful 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. The focus of the Department on the latest trends in the field of minimally invasive approaches in arteriovenous surgery is also of great importance.

According to latest information, international training activities in the area of robot-assisted vascular surgery will continue in 2017, this time in cooperation with Germany. At the same time, the vascular surgery unit will be involved in providing training in laparoscopic vascular surgery to physicians as part of the Aesculap Academy program.

## 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 a 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 the 1st School of Medicine, Charles University in Prague. He also works as a lecturer for robot-assisted vascular surgery at the European Institute of Telesurgery in Strasbourg and as a lecturer of Intuitive Surgical in the 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 the 3rd School of Medicine, Charles University in Prague, in the specialization "general nurse".
- The Department will most probably continue to organize courses in robot-assisted surgery, vascular surgery and surgery of varicose veins for both domestic and foreign physicians.



# Cardiovascular Program

## 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 rooms
Standard inpatient unit	14 beds
Intermediary Care Unit	10 beds
Postoperative and reanimation care unit	10 beds

Two classical surgical operating rooms are available 5 days a week, of which 1 OR is available 24 hours for emergency interventions, and a hybrid OR and an OR for robot-assisted surgeries once a week each.

### Basic data

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	11
Number of reanimation beds	9

Total number of beds	34
Number of hospitalized patients	902
Bed occupancy rate (in %)	87.33
Average treatment period (in days)	11.21
Total number of treatment days	10 114

### Number of interventions and mortality

Surgical interventions - total	811
Isolated aortocoronary reconstructions	182
Combined procedures (valve, bypass, aorta)	298
Cardiac valve replacement/valvuloplasty	534
Isolated operations on ascending aorta and aortic arch	8
Others (myxoma, pericardiectomy, pacemaker extraction)	18
Epicardial stimulation lead implants	7
MAZE operations (combined with ACB and valvular surgery)	129
Thoracic aorta operations - total (combined with other interventions)	90
Robot-assisted interventions	6
Acute and emergency interventions	143
Planned surgeries	668
<b>30-day mortality (in %)</b>	<b>2.34 (19/811)</b>
Acute interventions	1.47
Elective interventions	0.87
<b>Number of outpatient examinations (visits)</b>	<b>10 159</b>

### Changes / new events in 2016

- In 2016, the Department performed as many as 811 cardiac surgeries. The lower number of these procedures compared with the planned number and with previous years is related to the necessary floor refurbishing necessitating the reduction of Department operation.

# Cardiovascular Program

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- The most important event of the last year is the opening of a multidisciplinary hybrid and robot-assisted OR. The Department of Cardiac Surgery has one planned surgery day in each of these OR a week.
- In 2016, there was a high number of heart valve procedures, as compared with coronary revascularization procedures, comprising 65.8% of all surgeries. There were both isolated procedures involving one valve, as well as combined procedures involving several valves or other procedures. The percentage of these combined procedures was 36.7%.
- Acute and emergency procedures comprised almost 20% of all procedures. There were procedures which are necessary for the patient; on the other hand, they carry a high risk and are very expensive having direct implications for overall surgical results.
- The total annual mortality of 2.34% is significantly lower as compared to the predicted mortality of 7.45% calculated on the basis of the international scoring system Euroscore II. Acute surgery accounted for 2/3 of cases of the total mortality.
- The trend of valve salvation instead of valve replacement was confirmed in heart valve surgery. These salvation surgeries, in particular on the mitral valve, accounted for approximately 70% of operations. Thanks to these results, the Department is one of the leading facilities in the Czech cardiac surgery. It can be emphasized that more than 2/3 of isolated mitral valve surgeries were performed by means of a minimally invasive approach.
- 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.
- Our facility was involved in several clinical studies performed in cooperation with international institutions. In particular, the results obtained so far offer a very good perspective for our patients.
- The Department continued to cooperate with other centers. Their patients are offered our first class cardiosurgical facility both for elective and acute procedures. These are mostly patients from hospital in Karlovy Vary (Carlsbad), Liberec, Příbram and Kladno.
- Multidisciplinary cooperation within the hospital, in particular, with the Department of Cardiology and Vascular Surgery continued to our great satisfaction also last year and we hope to be able to continue in this trend also in the future.

## Outlook for 2017

- In 2017, we plan to perform over 800 surgeries again. We suppose that the range of procedures will be similar to that in the previous year.
- 3 systemic programs that represent the core activities of the Department will be further developed. These programs are as follows: aortic disease treatment program (in cooperation with vascular surgery and radiology), program for surgical treatment of valvular heart diseases and program 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 opening of the hybrid OR and the OR for robot-assisted surgeries will allow the development of new surgical techniques and procedures enabling us to enhance the range of cardiac surgeries and offer our patients better quality care.

# Cardiovascular Program

## Department of Cardiac Anesthesiology

| Head of Department: Pavel Jehlička, MD, MBA

### Activities of the Department

The Department covers two basic areas, namely anesthesia care for cardiac surgery and cardiology and also intensive care for the cardiac surgery post-operative unit.

#### Anesthesia 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 for 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 multi-disciplinary OR started 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.

### Basic data

Number of physicians:	9
Number of nursing staff:	8

#### Administered anesthesia for:

Cardiac surgeries	1 078
Cardiological interventions	897
Interventions exceeding 2 hours	1 050
Interventions exceeding 6 hours	201

# Program of General Medical Care

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# Program of General Medical Care

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## Department of Internal Medicine

| Head of the Department: Milan Čech, M.D.

### 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, both to the inpatient ward and to the polyclinics, Department of Gastroenterology and 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 any related complications. 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 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 standard inpatient unit provides comprehensive internal medical care to a large spectrum of patients, both patients with acute internal diseases referred

by the acute internal medicine outpatient unit, and patients with planned diagnostic and therapeutic treatments. Patients with internal diseases from other departments of the hospital (all departments, in particular acute complications of cancer treatment and chronic hemodialysis program) and patients followed-up after invasive surgery (gastroenterology, Center of pulmonary endoscopy, interventional radiology) are referred to the Department for treatment.

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.

The number of admissions to the inpatient unit is steadily increasing. In combination with an increased length of an average hospitalization, it limits the availability of free beds and ensures the full use of the capacity of the Department. Bed occupancy is the highest in the entire hospital.

### 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, obesity, consultancy for quitting smoking), as well as a preoperative internal medicine unit.

### Acute internal medicine outpatient unit

In particular, the Department provides treatment and examinations to 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 offered to cover the needs of the Internal Medicine Department.

# Program of General Medical Care

The acute internal medicine outpatient unit is the most fully used outpatient unit of the Department; the number of treated patients has been continuously growing. 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 accessibility 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.

## Gastroenterology Unit

The unit is the show-case of the Internal Medicine Department of the hospital 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 achieved 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 is still inadequate in terms of its importance for the hospital and its position within the municipal and even national healthcare system. Therefore, it is vital to continue investing into the spatial arrangement and technical equipment.

## Center for Pulmonary Endoscopy

The Center for Pulmonary Endoscopy and related specialized outpatient units offer 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, inter alia 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 Schools 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 has organized postgraduate courses for physicians preparing for general medicine specialty examinations, in cooperation with the Institute of Postgraduate Healthcare Education

## 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 inpatient unit (comparison with 2015):

Bed occupancy rate	87.48%
Average treatment period for the entire department	7.03 days / decrease 0.3
Total number of treatment days	9 043 / last year 9 472
Admissions	1 287 / last year 1 292

# Program of General Medical Care

## 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. Gastroenterology program:

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

#### II. Breast 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	3
Number of general nursing staff	5
Number of newly admitted patients	614
Number of outpatient examinations	14 878
Number of chemotherapies	9 152

# Program of General Medical Care

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## Department of General Surgery

| Head of Department: Stanislav Černožský, MD

### Activities of the Department

The Department carries out a clinical program for general medical care of the hospital, including both outpatient and inpatient diagnostic and therapeutic activities (including ICU) in the field of general surgery, orthopedic surgery and urology. The Department of General Surgery treats both domestic and foreign patients, as well as clients of the Homolka Premium Care preventive program, provides consulting services for the hospital and organizes undergraduate and postgraduate courses for physicians.

#### General surgery program:

- Abdominal and thoracic surgery (gastrointestinal tract surgery), lung surgery, thyroid surgery, hernia surgery, varicose vein surgery, breast surgery, and other surgical procedures;
- Minimally invasive surgery in almost all fields of laparoscopic interventions (including common hernia, appendectomy, cholecystectomy, diaphragmatic hernia, laparoscopic surgery of the large intestine);
- Bariatric surgery (surgical treatment of morbid obesity), mainly gastric bypass, gastric sleeve resection;
- Oncological surgery in cooperation with the gastroenterology unit of the Department of Internal Medicine and oncologist, particularly oncological surgery of the gastrointestinal tract and mammology;
- Extensive outpatient surgical activities for both on-duty and specialized consultancy units;
- Minor outpatient interventions;
- Ostomy consultancy - care of ostomy patients

#### Orthopedic program:

- Total replacement of hip and knee joints, including reimplantations, replacement of the shoulder, ankle and the first metatarsophalangeal joints (using the Swanson endoprosthesis);
- Osteotomy with the Stoffel method of metal-plate fixation in surgery of the foot - hallux rigidus; extended range of orthopedic and minimally invasive surgical interventions;
- Extensive outpatient orthopedic treatment;
- Arthroscopy (mainly of knee and shoulder joints)

#### Urology program:

- Open, endoscopic and robot-assisted urinary tract surgery;
- Urology surgical oncology;
- Kidney surgery;
- Minimally invasive laparoscopic, cystoscopic and ureterorenoscopic surgical procedures;
- Ultrasound-guided puncture of the retroperitoneum;
- Comprehensive diagnostics and treatment of erectile dysfunctions;
- A wide range of outpatient orthopedic treatments;
- Radiological procedures

### Organizational units of the Department

#### Inpatient unit:

- Diagnostic, preoperative and postoperative care in all specializations;
- Care of patients admitted to intensive, semi-intensive and standard beds;
- Two other units in addition to surgery;
- Intensive care unit - A + B units



# Program of General Medical Care

## Outpatient unit:

- **Outpatient surgery:** It provides daily acute surgical care to unscheduled patients, including wound dressing changes in patients from other departments of the hospital and 24-hour acute surgical care;
- **Surgical consulting clinic:** Consulting clinic for surgical diseases focuses on abdominal and thoracic surgery, coloprocto-surgery, surgical oncology, diagnostics, postoperative monitoring, follow-up, assessment and ordering of planned operations;
- **Phlebology consulting clinic:** It provides treatment, preoperative assessment and follow-up care for patients with venous diseases;
- **Thoracic surgical consulting clinic:** In cooperation with the respiratory consulting clinic, it provides treatment, surgical procedures and follow-up of cancer treatment in patients with respiratory and thoracic diseases;
- **Mammology consulting clinic:** It provides examinations, comprehensive diagnostic services, preoperative evaluation and follow-up care to patients with breast disease, in close cooperation with radiologists, oncologists and pathologists;
- **Bariatric consulting clinic:** It provides preoperative assessment and postoperative follow-up in cooperation with the Obesity Center of the Na Homolce Hospital;
- **Orthopedic outpatient unit:** It provides diagnosing, treatment and preoperative assessment of trauma patients with musculoskeletal diseases, as well as consultancy services to other departments of the hospital;
- **Urology outpatient unit:** It provides care to urological patients, diagnostics (including ultrasound) and outpatient treatment, preoperative assessment, postoperative monitoring, as well as comprehensive diagnostics and treatment of erectile dysfunction and a number of outpatient diagnostic and therapeutic procedures (cystoscopy, ureter probing also for other departments, etc.);
- **Internal medicine outpatient unit:** It provides internal preoperative assessment and monitoring of seriously ill surgical patients before surgical procedures, and follow-up of certain selected diseases;

- **Outpatient unit for minor surgical procedures:** It performs minor outpatient surgical procedures under local anesthesia at the request of general practitioners and hospital dermatologists, and in indicated patients from the surgical consulting clinic and on-duty surgery;
- **Ostomy unit (under separate management):** It provides comprehensive care (theoretic, pre-admission, preoperative, postoperative and follow-up) and education to ostomy patients. Identification and management of ostomy complications, peristomal skin and drainage. Management and drainage of all type of ostomies and complications, knowledge of all types of ostomy devices and their application.

## Operating rooms:

- 1 "super-sterile" OR for orthopedic surgery;
- 2 operating rooms for other surgeries, both open and laparoscopic;
- Robotic operating room with Da Vinci Surgical System (used twice a week)

## Operational data

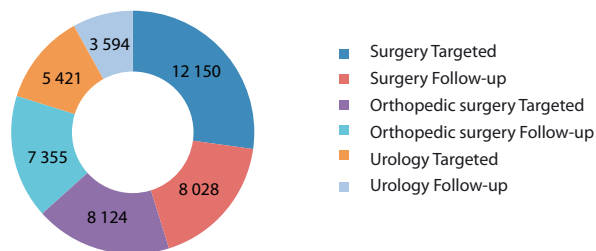
Total number of physicians	24
Number of surgeons	15
Number of urologists	4
Number of orthopedic surgeons	4
Number of internal medicine / intensive care specialists	1
Number of general nursing staff	62
Number of auxiliary nursing staff	12
Number of assistants	2
Total number of beds	26
Number of standard beds	16
Number of intensive beds	5
Number of semi-intensive beds	5
Bed occupancy rate	104.49%
Average treatment period	3.35 days

# Program of General Medical Care

Number of treatment days	9 340
Number of hospitalized patients	2 788
Mortality	4

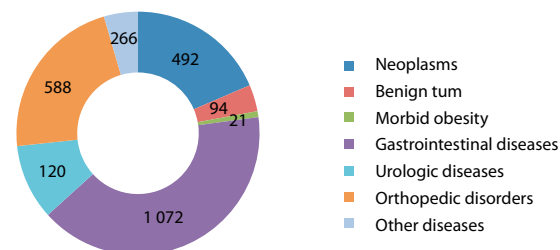
## Number of outpatient examinations:

Surgery	Targeted	12 150	of which excisions 533
	Follow-up	8 028	
Orthopedic surgery	Targeted	8 124	
	Follow-up	7 355	
Urology	Targeted	5 421	
	Follow-up	3 594	
<b>Total:</b>		<b>44 672</b>	

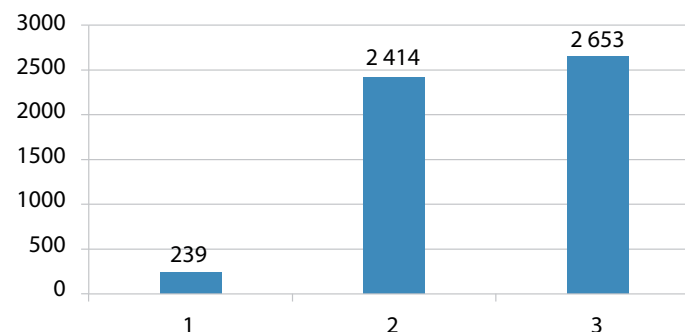


## Inpatient admissions by DGR

Neoplasms	492
Benign tumors	94
Morbid obesity	21
Gastrointestinal diseases	1 072
Urologic diseases	266
Orthopedic disorders	588
Other diseases	120



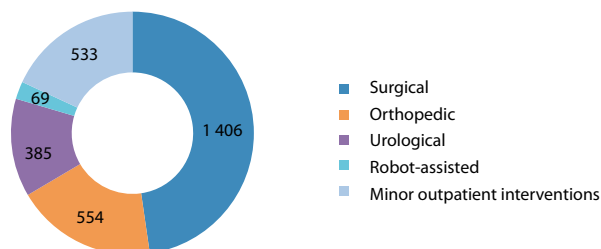
Emergency admissions	239
Planned admissions	2 414
<b>Total</b>	<b>2 653</b>



## Number of interventions:

Surgical	1 406
Orthopedic	554
Urological	385
Robot-assisted	69
Minor outpatient interventions	533
<b>Total</b>	<b>2 947</b>

# Program of General Medical Care



## Changes / new events in the previous year

- **Technical equipment:** Hardware upgrade and fine-tuning of the software of the computer network in order to improve the quality of patients' medical records, organization of admissions and discharges, keeping of surgical records and the operation of out-patient units; electronic scheduling of patients in outpatient units have been improved; electronic request forms for separately calculated material for health insurance companies are in place; computers of the ostomy consultancy unit and examination room has been upgraded. Floor renewal in the outpatient unit and restroom and bathroom refurbishing in the inpatient unit and ICU were finished. A new ultrasound device was acquired by the urology unit, as well as air-conditioning for the outpatient unit and nurse room.
- **Orthopedics:** Osteotomy with the Stoffel method for hallux valgus as a routine surgery, Swanson endoprosthesis Neuflex for hallux rigidus as a routine surgery, routine use of the orthopedic navigation system in the surgery of large joints and arthroscopic surgery (in particular, knee joints and cruciate ligament-plasty).
- **Surgery:** Great focus on development of thoracic surgery and thoracoscopic interventions, ongoing cooperation with the hospital in Liberec and the General Teaching Hospital Prague (1st Surgical Clinic) in the field of lung surgery; routinely performed laparoscopic bariatric surgery for morbid obesity in the whole range of interventions. Change in the obesity treatment team (department of internal medicine, gastroenterology, psychologist). Routinely performed procedures for anal prolapses and

hemorrhoids using the Long method (PPH). Further development of laparoscopic colorectal and gastrointestinal surgery; robot-assisted interventions were permitted by health insurance companies only for urological interventions; bariatric robot-assisted procedures were eliminated.

- **Urology:** Endoscopic ureterotomy used as a routine method, introduction of the laparoscopic method in renal surgeries (pyeloplasty), routine ureterorenoscopy, routinely performed robot-assisted surgeries, in particular radical prostatectomy, pyeloplasty, kidney resection.

## Evaluation of clinical activities

- The Department concentrates on comprehensive development of general surgery, orthopedics and urology, with a focus on elective interventions, and plans further development of laparoscopic procedures in colorectal surgery and thoracoscopic interventions in thoracic surgery;
- Increased cooperation is being developed with the Department of Internal Medicine, Radiology and Oncology, as well as with other departments of the hospital;
- Operating rooms are used for surgical treatment of the most severe surgical conditions (including acute interventions);
- The Department was actively involved in the development of recommended accreditation standards and optimization of postoperative pain treatment;
- Patient satisfaction was continuously assessed by the Department and the outputs were used for further improvements; high hygiene standards have been continuously monitored in all premises in cooperation with the microbiological department and the team responsible for infection control; no increase was recorded in the incidence of complications or nosocomial infections.

## Outlook for 2017

- Due to a significant increase in the number of oncological patients in the Czech Republic, particularly in the colorectal field, activities of the Department will focus within the comprehensive therapy on the latest surgical procedures using minimally invasive, laparoscopic approach and ro-

# Program of General Medical Care

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bot-assisted methods, as well as on radiofrequency ablation to treat liver metastases and methods of radical lymphadenectomy. Patients indicated for liver resection will continue to be referred to specialized centers.

- Lung surgery will be further developed in cooperation with the hospital in Liberec.
- In the field of thoracic surgery, the Department will continue to cooperate with the 1st Surgical Clinic of the General Teaching Hospital, Charles University.
- Increased efforts will concentrate on publishing and lecturing activities.
- The information system of the Department will be further developed in coordination with the hospital information system.
- Cooperation with the Rehabilitation Department in orthopedic patients is planned.

## Educational and research activities

### Educational and teaching activities

- The department organized an undergraduate study stay for 14 medical students (4th and 5th year of study) from the 1st, 2nd and 3rd Medical School, Charles University).
- Within postgraduate studies, 3 physicians from our hospital and other hospitals completed study stays for Postgraduate Certificate.
- We organized seminars for physicians and nurses, participated in hospital seminars, regular common indication seminars together with oncologists and common clinical-pathological seminars with pathologists.
- The general nursing staff from the entire Department participated actively and passively in a number of trainings and lectures necessary to improve their professional knowledge and skills. 2 nurses finished their ARIP studies, 2 nurses continue the studies, 2 nurses study at the Nursing School (pregraduate).

- We focused on providing training to nursing staff in the area of ostomy to ensure ostomy care for our patients. Ostomy consulting center was opened; two trained nurses were included into the ostomy team. Thus, we have 3 ostomy nurses in total who provide consulting in the area of ostomy patient care for the entire hospital.

### Specialized activities and membership in professional societies

Physicians of the Department participated actively in several domestic and international congresses and workshops. Emphasis was put on minimally invasive surgical approaches and robot-assisted methods in surgery and urology. Our physicians are also members of a number of professional societies:

- The Czech Medical Association of J. E. Purkyně
- The Czech Society of Hepatobiliary Surgery
- The Czech Surgical Society
- The Czech Society for Endoscopy
- The Section of Endoscopic and Minimally Invasive Surgery of the Czech Surgical Society
- The Section of Bariatric Surgery of The Czech Society for Obesity
- The Czech Society for Obesity
- The Czech Society of Coloproctology
- The Czech Society of Gastroenterology
- The Czech Orthopedic Society
- The Section of Thoracic Surgery of the Czech Society for Pneumology
- The Czech Transplant Society
- The Society of Cardiology
- The Czech Association of Urology
- The European Association of Urology
- The Czech Society for Robot-Assisted Surgery of the Czech Medical Association of J. E. Purkyně

# Program of General Medical Care

## Department of Gynecology and Minimally Invasive Therapy

| Head of Department: Petr Popelka, MD

The activity of the Department focuses on diagnosing and surgical treatment of gynecological diseases, with emphasis on minimally invasive approaches. The complete range of pelvic surgery concentrated in four clinical programs in 2016: urogynecological programs, comprehensive treatment of endometriosis, general gynecological surgery and robot-assisted surgery. The Department has a specialized center for each program.

**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, 385 female patients with the above problems were operated, of which 60 interventions were performed with the use of implants.

**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 of the Na Homolce Hospital is one of the most experienced centers in the country in performing radical operations of retroperitoneal endometriosis. In 2016, the Department carried out 138 interventions, of which 17 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 deve-

lopment disorders. Hysteroscopy operations include diagnostic and surgical endoscopy of the uterine cavity.

**Robotic program:** In 2016, surgical activities based on the use of a new robot-assisted Da Vinci Xi system were initiated following necessary preparation and certification of a specialized team, focusing on the management of malignant uterine tumors. 4 surgical procedures were performed at the end of 2016. A clinical study was arranged in 2016 to verify the feasibility of a newly developed robot-assisted system of the Israeli company Memic for vaginal surgeries. The study will be performed in 2017.

In 2016, a total of 1 462 female patients were admitted for treatment to the Department.

The total number of surgical interventions in 2016 amounted to 1 445 surgeries, of which 95%, including oncological interventions, were performed by minimally invasive methods.

### Basic data

Number of beds	14
– Standard beds	10
– Intensive beds	4
Number of physicians	8
Number of nursing staff	24
Number of outpatient examinations	18 120
Number of admissions	1 462
Number of treatment days	3 525
Number of surgical interventions	1 445
Bed occupancy rate (in %)	83.89
Average treatment period (in days)	2.41

# Program of General Medical Care

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## Department of ENT / Head and Neck Surgery

| Head of Department Petr Jirák, MD

### Activities of the Department

The Department of ENT / Head and Neck Surgery specializes in diagnostics and conservative and surgical treatment of the ear, nose and throat.

**Similarly as in previous years, surgical procedures carried out in 2016 covered a whole range of head and neck surgery**, i.e. surgery of the nose and paranasal cavities (mostly as endoscopic interventions), comprehensive surgery of the thyroid and parathyroid glands, microsurgery of the vocal folds and larynx, cophosurgical interventions (ear surgeries), interventions to treat sleep apnea syndrome and rhonchopathy, 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 ENT surgical oncology. Skull base surgery was intensively developed in collaboration with the Department of Neurosurgery.

Within the Na Homolce Hospital, the Department cooperates with neurologists in the treatment of balance disorders and has at its disposal the state-of-the-art equipment - 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. We cooperate inter alia 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 follow-up care, in collaboration with oncologists.

The program of temporomandibular joint treatment continued also last year. In 2016, 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 of the Na Homolce Hospital to treat patients with sleep breathing disorders.

In the field of thyroid surgery, the Harmonic scalpel has been increasingly used which significantly reduces the length of surgical procedures. In indicated cases, minimally invasive procedures to remove thyroid tissue by the MIVAT method (minimally invasive video-assisted thyroidectomy) are used. At the same time, the Department carries out a whole range of operations, ranging from partial up to extensive interventions, including removal of the entire gland and surrounding lymph nodes, 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 cancer.

Close cooperation with dental surgery has continued. Together, we indicate and operate on patients for whom the combination procedure is an advantage.

**In 2016, the outpatient unit of the Department of ENT / Head and Neck Surgery provided comprehensive services**, including specialized consultancy services in oncology, otoneurology, cophosurgery and otoprosthesis, outpatient interventions for rhonchopathy, outpatient unit for corrective head and neck surgery, phoniatriy, temporomandibular joint outpatient unit, and a specialized outpatient unit for the treatment of salivary glands using endoscopic technique for diagnosis and treatment of salivary gland ducts.

# Program of General Medical Care

The outpatient center for sleep and snoring disorders (rhonchopathy) accounts for a large part of our outpatient care and cooperates 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 successfully develop an esthetic program of corrective surgery of the head and neck which primarily included procedures on auricles, eyelids, external nose, and laser operations.

We standardly use an NBI method (narrow band imaging) which allows us, 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 disorders of the vocal folds and larynx.

Since 2015, we have been using a FEES (fiber-optic endoscopic evaluation of swallowing) assessment method of swallowing which has been 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, 2016)	11
Number of general nursing staff	22
Number of outpatient examinations	1 338
Number of consultations	1 564
Number of admissions	1 291
Number of treatment days	
Standard care	2.5
Intensive care	1.0
Bed occupancy rate (in %)	95
Average treatment period (in days)	
Standard care	2.5
Intensive care	1.0

## Number of surgical interventions

Surgeries under local anesthesia	525
Surgeries under general anesthesia	879
FESS surgeries	177
Thyroid gland surgeries	136
MLS (microlaryngoscopy)	91
Oncological diagnoses	59
NBI	165
TMJ (temporomandibular joint) surgeries	45

## Outlook for the year 2017

- The Department will continue to provide comprehensive diagnostics and treatment. The aim is to further improve the professional standard and quality of provided health care, with focus on interventions necessitating shorter hospital stays.
- The program of functional corrective surgery and rhonchopathy has an increasing trend.
- We will focus on further development of thyroid surgery.
- We will continue our close cooperation with dental surgery in performing combined ENT/dental surgical procedures.
- Within the neuroprogram, close 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 plans to organize workshops on thyroid disorders, with a focus on operative techniques and thyroid surgery, also in 2017.



# Program of General Medical Care

## 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 services
- 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 reanimation nurses (bed-side)	32
Number of paramedical staff	6
Number of administrative staff	1

### Basic data:

Number of emergency admissions	194
Number of anesthetics per year	9 257
Number of anesthetics exceeding 2 hours	2 385
Number of anesthetics when on duty	819
Number of patients of the anesthesia outpatient unit	8 804
Number of patients of pain treatment center	652

### 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 8 events in the Czech Republic and 2 events in USA in 2016.
- In particular, I. Vrba, MD has been actively involved in publication activities comprising a total of 10 publications and lectures, including in high-impact journals.



# Program of General Medical Care

## Department of Rehabilitation and Physical Medicine

| Head of Department: Ivan Hadraba, MD

### Activities of the Department

The department provides comprehensive diagnostic and therapeutic care to restore maximum 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 ward with 10 beds. These are provided to the Department by other departments - Neurosurgery, Vascular Surgery, Neurology and Gynecology. The outpatient unit consists of surgeries of rehab physicians, hydrotherapy room, rooms for physiotherapy and physical therapy.

### Staff (in terms of FTEs)

Physicians	6
Head physiotherapist	1
Physiotherapists	30
Occupational therapists	2
Nursing staff	4
Paramedic staff	1
Massagists	4
Administrative staff	2

### Performance overview

Number of outpatient interventions	29 128
Number of other staff interventions	210 334 (outpatient + inpatient)
Total	239 462

### Changes / new events in the previous year

- In the course of 2016, the premises provided within the Department of Gynecology were refurbished resulting in 4 beds, medical surgery and a room for physiotherapists and occupational therapists. Facilities for the secretariat of the Department, physiotherapy exercise room and occupational therapy room were created on the premises of the 1st floor. The Investment Committee discussed the project of a single inpatient unit of the Department. The inpatient unit was retrofitted with necessary aids.
- The Department made a successful bid for concluding a contract for the provision and reimbursement of reimbursed services with health insurance companies in the field of occupational therapy.
- We filed a request to prolong accreditation for specialized education or focus of additional specialized practice in the field of physical medicine and rehabilitation. A request for level 2 was filed with regard to creating an inpatient unit in the Department.

# Program of General Medical Care

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- Physicians and physiotherapists of the Department 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 rehabilitation treatment of voice disorders – voice rehabilitation 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 fold disorders.

The results of 10 years of work on the treatment of urinary incontinence were presented at a rehabilitation conference held in Beroun and also at the 25th conference of Czech Urogynecology.

- Physiotherapy and prosthetic treatment continued to be provided to patients of the Department of Vascular Surgery after amputations. The activities of a specialized interdisciplinary team providing care to patients after lower limb amputations were coordinated. A gait school for patients with prostheses was opened.
- A new principle of physical therapy provided to patients with vascular diseases was introduced.

- The 7th conference for physicians of rehabilitation and physical medicine, as well as other specialties, and for physiotherapists was organized in December. In cooperation with external lecturers, expert seminars for physiotherapists and physicians were organized.

## Development perspectives for 2017

The main perspective is that of integrating all inpatient capacities into one facility and establishing a single inpatient unit with its own nursing staff.

Further plans include:

- Hiring new physicians to fill in vacant positions in accordance with the staff guideline;
- Providing a course of professional training focused on conditions after stroke to further physiotherapists;
- Organization of the 8th conference of physicians and physiotherapists specialized in rehabilitation and physical medicine and other disciplines;
- Organization of further specialized workshops for physiotherapists and physicians in cooperation with external lecturers;
- Equipping the exercise room with a suspension system Redcord to facilitate physiotherapy of patients with disabilities

# Program of General Medical Care

## Department of Clinical Pharmacy

| Head of Department: Milada Halačová, PharmD, PhD

### Activities of the Department

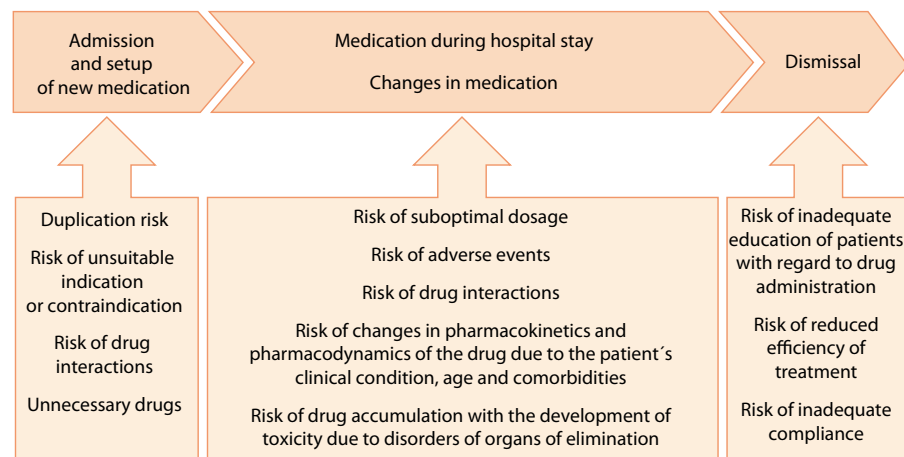
The Department of Clinical Pharmacy was established in the Na Homolce Hospital in August 2010 to ensure the safety of pharmacotherapy which is one of the major priorities of the hospital management. In terms of its organizational structure, it falls within the competence of the Deputy Director for Therapeutic and Preventive Care. The working team consists of pharmacists specialized in clinical pharmacy or those who will be included in training for this specialization. The work of the clinical pharmacist is governed by the needs of the Na Homolce Hospital, safety standards set by JCI and by staff availability within the Department. The activities in which the 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 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 everyday work in the assigned clinical department** and close cooperation with treating physicians and nurses. The clinical pharmacist monitors patient medications in detail and assesses any causal relationships between specific patient problems and their changes during illnesses, laboratory examinations and current medications, 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 **(4) the development of best practice**, reports adverse events to the State Institute or Drug Control and is responsible for preparing reports on dealing with exceptional events in the hospital related to medications. The Department of Clinical Pharmacy 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

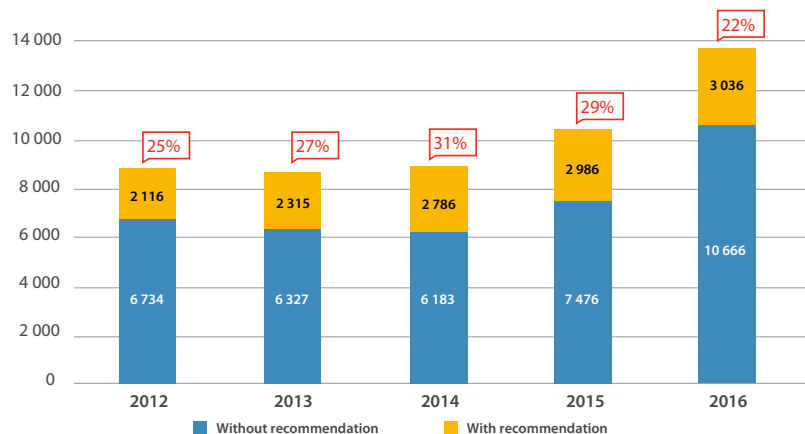
# Program of General Medical Care

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 clinical pharmacist intervention in about 3,000 patients annually (30%). The highest percentage of interventions includes adjustments 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.

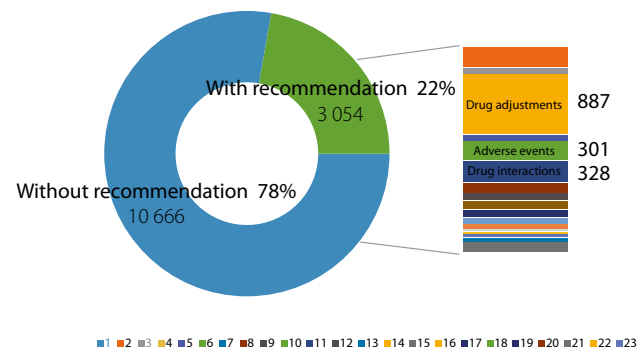
## Numbers of inpatients revised by the clinical pharmacist and consultations requested by outpatient departments in 2016:

Number of revised inpatients	13 702
Number of inpatients with recommendation of the clinical pharmacist	3 036 (22%)
Number of patients with severe adverse events	301 (2.8%)
Number of consultations required by a physician in outpatient department	986

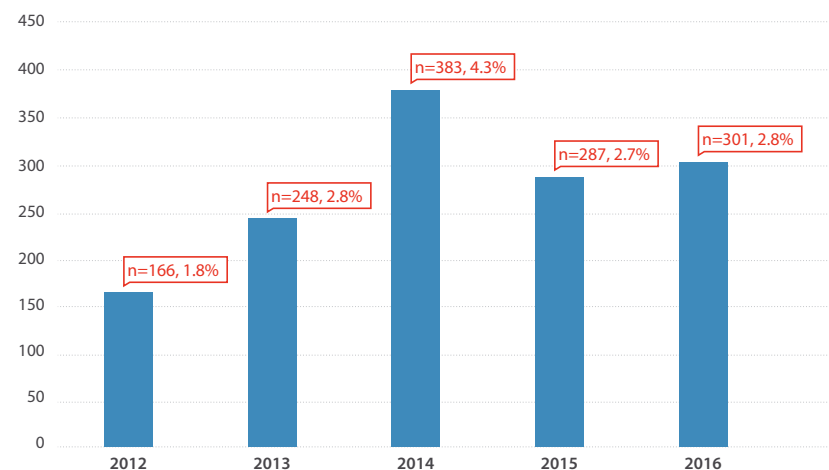
Graph 1: A year-to-year comparison of the number of reviewed medications in the Na Homolce Hospital in 2012-2016



Graph 2: A detailed structure of identified drug related problems in 2016 (n=13702)



Graph 3: A year-to-year detection of adverse events expressed as percentage of the total number of reviewed medications (n=13702)



# Program of General Medical Care

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## Accreditation and specialist activities:

- The Department is an accredited facility of the Czech Ministry of Health in the field of clinical pharmacy (in 2016, the Department trained 20 post-graduate 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 (the head of the Department is at the same time the chairperson of the Society);
- Educational activities in the field of pharmacology at schools of medicine and pharmacology in Prague and Brno;
- Membership in the Scientific Council of the Institute for Medical Drug Guide
- Professional partnership of the national pilot program “Medication in retirement homes” implemented by the Institute for Medical Drug Guide and the State Institute for Drug Control;
- The Department has been granted two projects.

## Staff data

Number of clinical pharmacists	5.5 FTE
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## Conclusion

A high standard of clinical pharmaceutical care was confirmed by the JCI international audit of the 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 the winner of the national competition “A Safe Hospital”.

Outpatient units

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# 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 2016, the Department performed comprehensive diagnostic and treatment procedures, including preventive and consulting care, to both children and adults patients with allergies, asthma and other immuno-pathological conditions (immunodeficiency and autoimmune conditions).

### Basic data

**Outpatient units:** 4 surgeries, 3 prep rooms and 1 functional diagnostics laboratory

**Number of physicians:** 5 (3.2 FTE + 2 external 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)

#### Outpatient unit:

Number of patients	5 786
Number of examinations	10 513
Number of skin tests	31 678
Number of spirometries	7 348
Number of bronchomotor tests	1 093
Number of rhinomanometries	204
Number of allergen-containing vaccine administrations (treatment initiation)	270

### Educational and other specialized activities:

- **Postgraduate training courses** provided to physicians and nurses in the field of allergy and clinical immunology for which official 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 learning on the national basis, a number of specialized conferences and symposiums: Conference of the Czech Society for Allergy and Clinical Immunology, interdisciplinary meeting in February 2016;
- **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 the editorial board of "Allergies"** - a journal for post-graduate training;
- **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), European Academy of Allergy and Clinical Immunology (Assoc. Prof. Čáp, Assoc. Prof. Petrů, M. Herknerová, MD), European Respiratory Society (Assoc. Prof. Čáp); **active participation in workshops, conferences and foreign congresses** in the field of allergy and clinical immunology;
- **Research activities** - (Assoc. Prof. Čáp) - participation in the OLA EX AIR project - *Determination of breathing profiles of inflammatory parameters in patients with severe asthma* (Pulmonary Department of Hradec Králové Hospital, Department of Occupational Medicine of the 1st School of Medicine, Charles University, Prague, University of Chemistry and Technology, Prague and the Na Homolce Hospital)

### Changes in the year 2016 and comments

On April 1, 2016, the contract of Assoc. Prof. V. Petrů was terminated.

# Outpatient units

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## 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 its patients and indirectly also to their family members and supports the 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 outpatient 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 reanimation 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 aged 0-19 years (i.e. also for patients outside the Pediatric Department);
- Hygienic facilities for all polyclinic units on the 1st floor;
- A room for collecting used laundry

### Staff of the Department

#### Physicians:

- 2 full-time physicians
- 2 part-time physicians (0.5 FTE)
- 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 of the hospital, emergency service and substituting other physicians during holidays or sick leave

#### General nursing staff:

- 5 pediatric nurses

#### Pediatric reception desk:

- 3 employees



# Outpatient units

## Basic data

<b>Total number of registered patients</b>	<b>3 947</b>
Number of children receiving permanent care	1 531
Number of children registered in consulting unit	177
Number of children in specialized outpatient units	979
Number of children in outpatient speech therapy unit	285
Number of registered foreign nationals	216
Number of paying foreign nationals	74
Number of the commercial program clients	154
Number of registered newborns	51

<b>Total number of examinations</b>	<b>20 937</b>
Number of pediatric procedures	13 963
Number of procedures performed by consultants	2 005
Number of procedures performed by speech therapists	2 907
Number of procedures performed by external staff	2 062

### Average number of patients treated daily in the office:

Pediatricians	18
Consultancy	8
Speech therapy	15
Emergency service on working days	4
Emergency service on holidays	13
The number of children treated daily in the department	56
<b>Total number of treated foreign nationals</b>	<b>1 117</b>

## Economic results for 2016

Costs	9 151 072
Wages	8 188 483
Materials	657 244
Total revenues	1 582 149

## Points

Total number of points	3 984 871
Pediatricians	2 062 580
Consultancy	492 093
Speech therapy	1 081 401
External workers	347 756

## Changes and events in 2016

- The CRP OPRION examination continued to be used for rapid diagnosis of inflammatory diseases in order to provide effective pharmacological treatment of these conditions. In total, 833 of these examinations were performed. STREPTTEST examinations for rapid diagnosis of Streptococcal infections were used extensively. In total, 1 031 of these examinations were performed.
- The outpatient units of neurology and orthopedics pursued the established program of neuro-orthopedic screening focused on observation of patients, aimed at active 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 diagnosed intrauterine growth retardation (their further follow-up is ensured by the Institute of Endocrinology) and juvenile thyreopathy.

# Outpatient units

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- The psychology consulting unit provided diagnostic services of 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.
- A new physician – V. Cirmanová, MD was hired to cover for a colleague on maternity leave, as well as a new physician for emergency duty – T. Savel, MD.
- Courses providing continuous training of physicians were organized.

## Outlook for 2017

- 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 of 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 continue to be offered 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.
- A new half-time pediatrician N. Dodovová, MD will be hired to start working on February 1, 2017.

# Outpatient units

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## Department of Dermatology

| Senior physician: Richard Šuraň, MD

### Activities of the Department

The Department provides outpatient therapeutic and preventive care of clients of commercial services (Homolka Premium Care, Comfort Care and paying foreign nationals), the staff of embassies in the Czech Republic, the staff of the Na Homolce Hospital, and consulting services for 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 gonorrhoea, syphilis or chlamydia infection are referred to the respective specialists in dermatovenerology.

The Department performs 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 dermato-oncology 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, dermatosurgical and aesthetic dermatology interventions.

### Organization of the Department

The staff of the Department include 1 senior physician (1.0 FTE), 1 independent physician (0.5 FTE) and 2 nurses (1.0 and 0.8 FTE).

### Development perspectives for 2017

Physicians and nurses of the Department are involved in postgraduate training courses and regularly read professional journals. The task of the Department for 2017 is to maintain the quality of the provided therapeutic and preventive care, strengthening of epicutaneous testing and increasing the range of aesthetic dermatology interventions.

# Outpatient units

## Department of Ophthalmology

| Senior physician: Petr Novák, MD

### Activities of the Department:

- Out-patient therapeutic and preventive ophthalmological care of patients of H+ and Homolka Premium Care programs, foreign nationals, 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 eye 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 are performed for 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 the 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 independently working physicians in a total of four medical offices.

### Examinations

Number of outpatient examinations	14 360
Number of patients treated in outpatient units	5 830
Total number of surgeries	1 378
Cataract surgeries	1 195
Commercial refraction interventions	99
Corneal transplantations	29
Surgical correction of astigmatism	35

### Staff data

Number of physicians	6
Number of physician FTEs	4.3
Contract for work (FTE)	0.2
Number of general nursing staff	7
Number of general nursing staff (FTE)	6.0
Number of auxiliary nursing staff	1
Number of auxiliary nursing staff (FTE)	1.0
Number technical staff members	1
Technical staff FTE	1.0
Total number of employees	14
Total number of FTEs	12.5

### Changes in 2016

In 2016, the trend of a long-term stabilization of cataract surgery and corneal transplantation numbers was maintained despite any investments into the medical instruments in the OR and technical equipment of the Department. Commercial refractive surgeries – lens extraction and implantation of a monofocal or multifocal implants – are on the decrease. Patients were still interested in the possibility to pay an additional fee for the implantation of an above-stan-

# Outpatient units

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standard lens within the “economically more demanding treatment option” (implantation of toric and multifocal lenses within cataract surgery covered by health insurance companies) that was cancelled in August 2013.

## Educational and specialized activities

Physicians of the Department are members of the Ophthalmological Society and the Czech Society of Refractive and Cataract Surgery and participate both actively and passively in workshops, congresses and other events of the Societies. In 2016, 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 2017:

- Provision of information to specialists on treatment possibilities in the Department of Ophthalmology, either covered by health insurance companies or provided in the form of commercial care;
- Coping with competitive conditions in the medical market within a so-called economically more demanding options of healthcare;

- Raising awareness about procedures performed in our Department and strengthening its position among other ophthalmology facilities;
- A further gradual upgrade the technical equipment of the Department, such as purchase of a laser device for secondary cataract treatment or an optical coherence tomography (OCT) device for early diagnosis of macular lesions (not carried out in 2013-2016 due to a significant investment reduction; transferred into the plan for 2017-2020);
- Further extension of the range and increase in the overall number of commercial intraocular interventions;
- The Department has complied so far with the highest standards of surgical treatment of the anterior eye segment; however, it is imperative that medical equipment be replaced and a new OCT device be purchased;
- Continued cooperation with clinical ophthalmological facilities in Prague;
- 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.

# Outpatient units

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## Department of Psychiatry

| Senior physician: Jaroslava Skopová, MD

### Activities of the Department

The Department provides diagnostic, therapeutic and preventive psychiatric care to polyclinic patients, patients of the department for foreign nationals, patients using other hospital programs, and consulting services in the hospital. The Department cooperates with physicians in all fields, inter alia within the program of comprehensive pain management (assessment before a planned neuromodulation procedure); in cooperation with the Department of Stereotactic and Radiation Surgery and the Department of Clinical Psychology, it participates in a research program on the stereotactic treatment of severe forms of obsessive-compulsive disorder.

### Basic data:

- 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 – 2 931 of which 120 were new patients for whom initial examinations were performed;
- 64 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 who cannot be admitted for treatment due to the lack of capacity are referred to other departments of psychiatry. The 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 Society of Neuropsychopharmacology and the Society of Biological Psychiatry. She is also a member of the specialization committee of the Scientific Council of the Czech Medical Chamber for psychiatry. She also presents lectures at workshops of hospital departments, workshops of the Department of Psychiatry of the General Teaching Hospital and the 1st School of Medicine, Charles University, Association of General Practitioners, etc.

### Development perspectives for 2017

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, as one of the basic fields of current medicine, is only a complementary discipline ensuring a comprehensive range of provided healthcare services, no further development is possible under the current staff situation.

# Outpatient units

## Department of Clinical Psychology

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

### Activities of the Department

The Department of Clinical Psychology has no inpatient ward. The psychologists work in three outpatient units where they examine patients and provide psychotherapy in compliance with the respective specialization of a given program and in cooperation with individual departments (in particular, with 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 serious diseases, and neuropsychological diagnostics aimed at 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 or neuropsychological assessment is required by health insurance companies.

At the end of the year, preparations for repeated accreditation awarded by the Czech Ministry of Health were made since the original accreditation (received in 2012) is only valid until June 30, 2017.

### 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, 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 interventions);

- 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 care in the field of obesitology and bariatrics, diabetology, endocrinology, oncology, pneumology and gastroenterology; other activities include psychosomatic and obesity 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 disease, diabetes, various functional disorders, etc.) requiring a professional psychological intervention;
- Psychodiagnostics and psychotherapy in children with various psychosomatic and educational problems within comprehensive care provided to pediatric patients;
- Psychological examination of patients required by different 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.)

# Outpatient units

## Complementary services:

- Psychological examination of drivers pursuant to the 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 Departments of Neurology, Neurosurgery and Vascular Surgery;
- Cooperation with the Department of Radiodiagnostics in developing medical examination paradigm by means of functional MRI 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 Testcentrum;
- Development of research cooperation with the Prague Psychiatric Center and the 1st School of Medicine, Charles University – differential diagnosis and methodology research issues

## Basic data

### Number of psychologists:

With postgraduate certificate	3 (of which 1 works part-time)
Without postgraduate certificate	1 (0.6 FTE since September 2016)

### Number of psychological interventions performed in inpatients:

Individual systemic psychotherapy (30 min.)	16
Specific psychological intervention (30 min.)	3 296
Targeted psychological assessment (60 min.)	552
Follow-up psychological assessment (30 min.)	394
Psychodiagnostics with a complicated psychotherapeutic intervention (90 min.)	24

### Number of outpatient interventions:

Individual systemic psychotherapy (30 min.)	330
Comprehensive pediatric psychological assessment (60 min.)	134
Targeted pediatric psychological assessment (60 min.)	221
Targeted psychological assessment (60 min.)	583
Follow-up psychological assessment (30 min.)	167
Specific psychological intervention (30 min.)	186
Psychodiagnostics with a complicated psychotherapeutic intervention (90 min.)	99
Crisis intervention (30 minutes)	233

### Total number of points achieved:

Total	2 308 914
Of which outpatient points	943 638

## Educational activities and membership in professional societies

- Dr. L. Krámská, PhD habilitated on January 1, 2016 in front of the Scientific Council of the School of Liberal Arts, Charles University in the field of clinical psychology and was appointed Associated Professor for the field of clinical psychology on September 22, 2016.



# Outpatient units

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- We organize specialized study stays as part of undergraduate study programs (for the Liberal Arts School and Teaching School, Charles University - a total of 10 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 and 3 PhD students and 1 fellow of the Erasmus program).
- Assoc. Prof. L. Krámská, MD, PhD has established the Czech Neuropsychological Society and has developed its activities. She obtained accreditation by the Czech Ministry of Health for a certified course in clinical neuropsychology. She is a member of the Specialization Council of the postgraduate study program in the field of clinical psychology at the Liberal Arts School, Charles University, Prague. She has developed long-term cooperation with the Psychiatric Center Prague and is a lecturer 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 committee of the European Neuropsychological Society for the Czech Republic and prepares, in cooperation with INS, an international congress to be held in Prague in 2018. Since October 2015, Assoc. Prof. L. Krámská MD is 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 committee of the Czech Union of Psychological Societies. M. Kořán, MD, PhD is a lecturer for 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 workshops within specialized education in clinical psychology in the Na Homolce Hospital. In 2016, he cooperated in postgraduate training activities for psychologists. He also provided training to 2 new psychologists of the Department.
- J. Procházková, MD was involved in organization of 18th international workshop The child in crisis in Zlín in June 2016, 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 2016, employees of the Department presented a total of 5 presentations at international congresses, 4 presentation at domestic conferences, as well as 6 presentations at specialist workshops of the Department of Clinical Psychology.

## Development perspectives for 2017

Assoc. Prof. Lenka Krámská, PhD., was appointed head of the Department of Clinical Psychology on January 1, 2017; the current head of the department M. Kořán, MD, will act as deputy head of the Department. As in previous years, the Department will continue to provide 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 School of Liberal Arts and Teaching School of Charles University and the University of New York in Prague 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 of the Department of Clinical Psychology is valid until June 30, 2017, preparatory measures were taken in the fall of 2016 to ensure that all requirements necessary to continue in the specialized educational program in the field of clinical psychology are fulfilled. In 2017, we will cooperate with the accreditation committee of the Czech Ministry of Health in order to comply with the requirements for successful repeated accreditation. We will continue to participate in standardization of neuropsychological methods and procedures for the Neuroprogram of the Na Homolce Hospital and to develop psychotherapy care and cognitive rehabilitation of patients with neurocognitive deficits.

# Outpatient units

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## 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 on duty;
- Provision of consulting services to patients from other departments of the hospital

### Organization of the Department

- The above-given range of outpatient dental care was provided by one dentist in 2016. The care was provided to outpatients and inpatients of policlinics, foreign nationals, contractual partners of the Na Homolce Hospital, and to hospitalized patients.
- In 2016, the Department had two dental offices. One dental office is used by the dentist and a nurse, the other one was rented out to the Department of Dental Surgery on August 1, 2016.
- In 2016, a total of 5 532 patients were examined and treated.

### Evaluation of clinical activities

The number of examined and treated patients was similar as in the year 2015. However, the number of interventions is still rather high which was achieved particularly due to highly efficient organization of work, immediate phone contracts with patients and filling of time slots vacated by absent or late patients and, in particular, extension of working hours, e.g. by treatment of painful conditions before and after the official working hours.

### Changes and events in 2016

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 replacements, so called Maryland bridge. The number of patient treated with a system of ZX – 27 glass abutment technology was increasing, as well as the number of patients treated with conditionally removable replacements and all-ceramic restorations. In 2016, the office was equipped with another PC and a printer in order to ensure the operation of an intraoral X-ray device. P. Kolčava, MD renewed his certificate for practical dental medicine for another 3 years.

### Development perspectives for 2017

The priority in 2017 will be to fill in the vacant position of dentist and dental hygienist. The Department will continue to cooperate with the Department of Dental Surgery in treatment of patients with new types of dental bone implants. 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 introduced into practice in selected patients, as well as dental guards to prevent bruxism (teeth grinding) Indications will be extended for all-ceramic replacements of veneer-type and the capacity will be increased for the production of full artificial dentures using locators in order to increase their retention. The preparation of removable partial dentures made of flexible base resin will be increased. An automatic dental amalgam dosing and mixing device will be purchased. Although dental care is a complementary service in the system of the Na Homolce Hospital, the Department of Dentistry 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

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# Summary of Activities of Departments Providing Complementary Services

## Department of Radiodiagnostics

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

### Activities of the Department

Similarly as in previous years, the Department provided services both to hospital and to other healthcare facilities, including 24-hour support, in 2016. The activities included the whole range of radiodiagnostic examinations, with special focus on diseases of the nervous, locomotor and cardiovascular systems, as well as on vascular and non-vascular interventions.

#### Vascular methods

In the field of vascular methods, the Department further developed the program of stent graft implantation in aneurysms of the abdominal and thoracic aorta and pelvic vascular system, in cooperation with vascular surgeons and cardiac surgeons.

Non-invasive treatment of brain aneurysms by means of detachable spirals, with a possible use of remodeling techniques by means of stents, continued in the comprehensive cerebrovascular center. The decision made on this or an alternative treatment – in particular, open neurosurgical procedure – is made during common workshops organized between the Departments of Neurosurgery, Neurology and Radiodiagnostics.

A new, two-component adhesive Onyx continued to be used on a regular basis that provides further possibilities of the 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 throm-

bus using various types of extraction equipment, mostly combining mechanical destruction and evacuation of the thrombus. Further development in recanalization methods has been achieved by a special fully-retractable stent used for cerebral arteries to withdraw a thrombus from the artery which means that it can be retracted also after it fully uncoiled. The Na Homolce Hospital continues to be a fully active accredited comprehensive cerebrovascular center where CT, MRI and endovascular interventions are available around the clock.

Our Department follows the latest technological trends in this field and chooses new technologies and materials for own application.

#### Non-vascular methods

The area of non-vascular methods 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.

A new technique in the entire country – a so-called epiduroscopy – was introduced in our hospital in 2016 which will be used also in 2017.

Since December 2010, a two-source Somatom Flash CT equipment has been used to ensure diagnostic advances. In 2012, the device was retrofitted with an interactive reconstruction system (SAPHIRE) which has contributed to a further considerable reduction of radiation exposure during CT examinations, since CT scans are still among the most significant sources of radiation in humans. In agreement with global trends, we tend to replace a CT scan with MRI in indicated cases where there is no radiation exposure at all.

In the previous 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 entire brain was carried out on a regular basis in acute stroke patients.

# Summary of Activities of Departments Providing Complementary Services

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The system of dual energy scanning allows a better separation of the skeleton and iodine-containing contrast agent 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 (MRI)**

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 Czech Republic which are able to perform such examinations. The Department continues to routinely carry out advanced MRI methods, i.e. 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 2016, the functional MRI BOLD imaging method was further developed, in particular, after the introduction of new examination methods. Post-processing of functional BOLD sequences was considerably simplified and accelerated.

The program of MRI heart examinations has continued, including, as a standard, phase contrast sequences for imaging and quantifying blood flow, which is important mainly for the assessment of valvular and short-circuit defects of the heart. The total number of CT and MRI examinations of congenital heart defects increased in 2016, in particular, in adult patients who had been operated on in childhood.

Since 2012, the Department has used MRI angiography of renal arteries with no contrast agent, which was made possible by retrofitting the Magnetom Avanto MRI scanner with a more accurate technology of specific sequences (NATIVE). In addition to saving financial means, this examination is important also for patients with impaired renal functions when contrast agent administration could be dangerous.

## **Mammography**

The mammography unit of 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 referred for an MRI breast examination in indicated cases performed also in the Department. The second reading of images continues to be a matter of routine.

The mammography unit of the Ne Homolce Hospital was again among the five best clinics out of the 60 centers in the Czech Republic that were assessed for the quality of mammography screening.

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

Since 2011, the Department has been using only 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.

SOPs of the Department of Radiodiagnostics are available on its website.

# Summary of Activities of Departments Providing Complementary Services

## Basic data

### 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 1.5T, 1x Magnetom Symphony 1.5T, 1x Siemens Skyra 3T, 1x GE Signa HDx (neurosurgery operating rooms) 1.5T
- Ultrasound unit: 2x Toshiba Aplio, 1x Toshiba Eccocee, 1x GE Logiq 9, 1x GE Logiq E9
- Mammography: 1x Planmed Nuance Excel
- Basic equipment: 1 fluoroscopic and fluorographic unit, mobile X-ray equipment, PACS workstations, scanners, printers, data archives

For 2017, 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 and the intervention CT scanner, as well as the purchase of a new mobile X-ray system are also planned.

### Basic staff data

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

## Specialized intervention and treatment procedures

PTA (with or without stent implantation)	507 PTA, 200 stents
Endovascular treatment of cerebral aneurysms (coils, stents)	32
Recanalization of cerebral arteries in acute stroke	47
PTA/stent of extracranial arteries	34
PTA/stent of intracranial arteries	6
Embolization in a neurological area (cerebral, spinal AVM)	13
Tumor embolization	14
CT guided interventions - total	2 830
Of which: targeted CT-guided nerve root and facet injections	2 444
CT-guided vertebroplasty + kyphoplasty	231
CT-guided radiofrequency ablation	13
CT-guided biopsies and drainages	142

## Overview of selected radiodiagnostic examinations

Computed tomography	16 080
Magnetic resonance imaging	19 212
Angiography	2 839
Ultrasound examinations	14 832
Mammography - total	17 441
Of which: screening	12 101
Ultrasound examination within mamma diagnostics	3 105
Breast node biopsy	234
Fluorography, fluoroscopy, dental X-ray	31 724
Total number of radiodiagnostic examinations	10 2128

# Summary of Activities of Departments Providing Complementary Services

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## Plans for 2017

- Our 3T MRI scanner will be used to develop new state-of-the-art techniques such as functional MRI BOLD imaging, MR tractography and diffusion tensor imaging, and MR spectrography. This equipment should be retrofitted by software that will enable to reach a higher quality of imaging in the area of functional MRI, as well as by software which will enable better quantitative evaluation of MRI parameters.
- Examination sequences will be further optimized in order to ensure a maximum use of the device potential. 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 further used for non-vascular interventions in our hospital which is the only facility in the country to use it. This technique should help patients who had undergone repeated lumbar spine surgeries and suffer from postoperative adhesions. Basic experience in using this method was gained in 2016 already.
- 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 the Department of Nuclear Medicine and Department of Radiodiagnostics; data from the archives of the Department of Cardiology are already fully available.

# Summary of Activities of Departments Providing Complementary Services

## Department of Nuclear Medicine – PET Center

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

### Activities of the Department:

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

### Organizational units of the Department:

- Nuclear Medicine outpatient unit
- Immunoanalytical laboratory
- Radiopharmaceutical laboratory

### Basic data

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

### Personnel (as of December 31)

Position	No. of persons	No of FTEs
Assistant (technical-economic employee)	1	1.0
Pharmaceutical lab technician	1	1.0
Physician	9	8.1
Professional lab technician, preparation of medicines	2	2.0
Medical radiation technologist	6	6.0

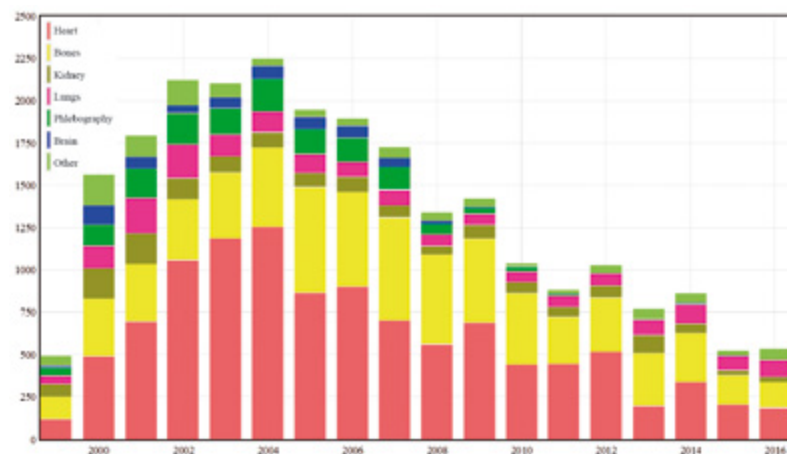
Paramedical staff	1	1.0
General nurse	6	6.0
Medical technologist	5	5.0

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

### Performance overview

#### Scintigraphy

Number of examinations: 527 (an increase of 4.8% as compared to the preceding year). All examinations are performed using a dual-detector camera Siemens E.CAM.

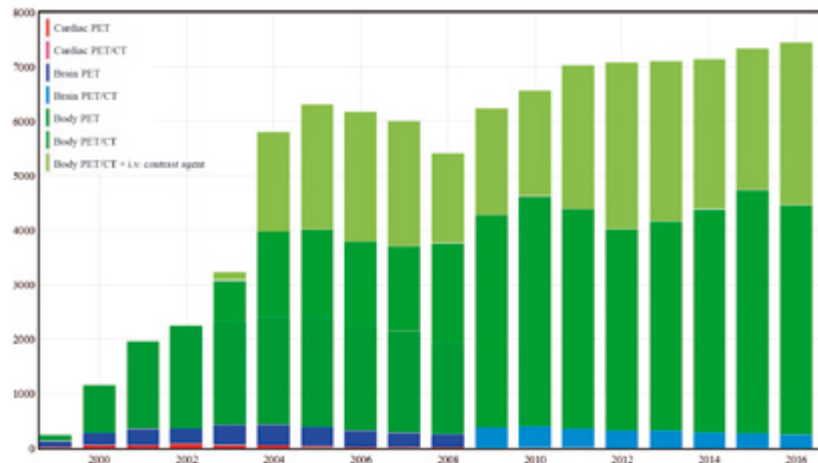


#### Positron emission tomography

Number of examinations: 7 474 (an increase of 1.4% as compared to the previous year). All examinations were performed using two hybrid Siemens Biograph PET/CT scanners.

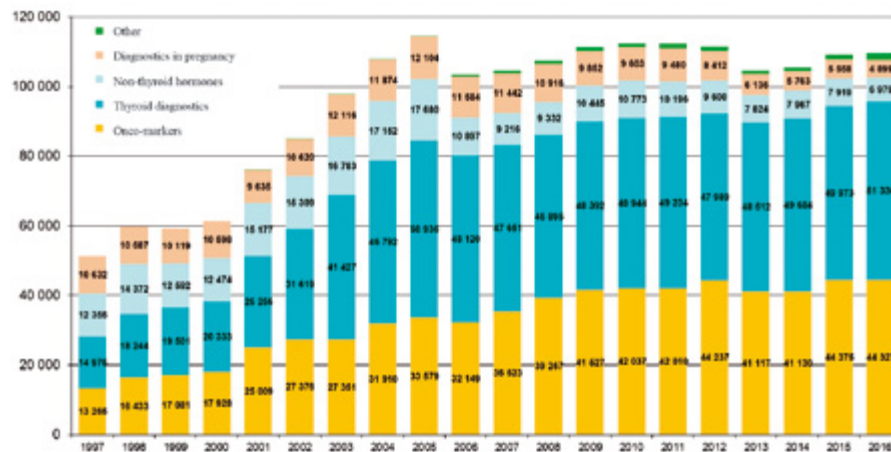


# Summary of Activities of Departments Providing Complementary Services



## Laboratory testing methods

Number of tests: 143 881 (an increase of 0.2% as compared to the previous year). Number of detections: 109 532 (an increase of 0.3% as compared to the previous year). Tests are performed by means of RIA (5%), IRMA (35%) and chemoluminescence (60%) methods.



## Activity evaluation

In 2016, the work productivity in the field of PET diagnostics was again quite high as compared to other domestic and foreign centers, reaching almost 7 500 examinations annually. The Department uses two hybrid Biograph PET/CT scanners (Siemens). The interest of clinicians in PET/CT examination was again enormous in 2016 and slightly exceeded the historical maximum of the previous year. The waiting time for patients outside the Na Homolce Hospital was around 3 weeks and was reduced at the end of the year, due to the opening of new PET facilities. A new examination method for dementia patients was introduced when new radiopharmacological agents became available for brain beta-amyloid imaging.

Conventional scintigraphy diagnostics has 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 introduction of perioperative radionavigation in the Department of Surgery made it possible to start using sentinel gland scintigraphy in practice. This prevented further decrease in scintigraphic evaluations compares to the previous year.

Immunology evaluations remained the same while the proportion between individual segments changed. 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 partial destabilization of staff situation at the Department caused by the fact that 2 radiological lab technicians were transferred to PTC Prague continued in the first half of 2016. Two newly hired employees were trained in the second half of the year and the staff was thus completed. A reduced work-time of one of the physicians was compensated for by a newly hired physician working part-time.

# Summary of Activities of Departments Providing Complementary Services

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Tender procedures for supply of  $^{99}\text{Mo}/^{99\text{m}}\text{Tc}$  generators and NaF, FLT, FBB, FCH radiopharmaceuticals were completed. Normal operation of the Department was complicated by the introduction of new purchase approval and contract publishing rules, concerning also orders.

The Department as a whole has an established certified system of quality management pursuant to the standard ISO 9001. A recertification audit in accordance with the new standard version of 2015 was successfully completed in the middle of the year, as well as an external clinical audit pursuant to the Act No. 373/2011 Coll. The Department, as part of the hospital, follows international JCI accreditation standards. An in-depth review of all documents of the Department and their transfer into the hospital document management system were performed.

## Teaching and other specialized activities

Study stays for a number of experts are organized at the Department and consultation services as part of the model project of the International Atomic Energy Agency (AIEA) are provided.

## Development perspectives for 2017

The plan is to 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. A new tender procedure for replacing an older PET/CTI scanner was announced to be carried out in the second half of the year. It is expected that due to installation works one scanner will be out of operation.

The waiting time for patients outside the hospital will be reduced from the usual 3 weeks to 1 week as a result of increased operation of newly opened PET/CT facilities (in České Budějovice, Ústí nad Labem, Jihlava) and a significant increase in the number of examinations in the Proton Therapy Center which concluded a contract with health insurance companies for PET/CTI diagnostics.

A new tender for supply of material for immunoanalysis is planned and the tender for supply of  $^{99}\text{Mo}/^{99\text{m}}\text{Tc}$  generators should be repeated. Should the tender for supply of material for immunoanalysis be successfully completed, 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.

A reduction in working time of one of the physicians related to her retirement age will slightly increase the burden on physicians of the Department; however, in the last quarter of the year, it is expected that another physician will return after maternity leave and complete the staff numbers. It is expected that one sectional lab technician will retire, which will be compensated for by another lab technician coming back from maternity leave.

A supervised ISO 15189:2013 audit of the immunoanalytical laboratory, as well as of the entire Department in accordance with the standard ISO 9001:2015 is planned for mid-2017.

# Summary of Activities of Departments Providing Complementary Services

## 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	8
Number of other graduate staff	10
Number of general nursing staff	37
Number of auxiliary nursing staff	7
Number of technical and administrative staff	6
Total number of physicians	68

### Activities

- Routine measuring and consultation activities within the Na Homolce Hospital and the catchment area of Prague 5, 6 and 7 in the following specializations: clinical biochemistry, clinical hematology, clinical immunology and allergology, 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.

Between January and April 2016, 3 internal audits were performed resulting in 1 non-compliance card (N1/IAK/2016). Acid-base balance analyzers located in the ICU were replaced. The Department of Clinical Biochemistry, Hematology and Immunology adhered to the planned budget for this year in economic terms.

### Clinical Biochemistry

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

A regular internal audit was performed by the Czech Accreditation Institute on June 6, 2016. Other acid-base analyzers were replaced which are located in the ICU. Also these new analyzers RapidPoint 1200 (Siemens) are remotely managed by the laboratory using RapidComm software.

### 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. The laboratory was involved in tender procedures and their implementation into the current work system in 2016.

# Summary of Activities of Departments Providing Complementary Services

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## **Transfusion unit and blood bank**

The unit ensures supply of blood and blood derivatives to hospital clinical departments. The unit was involved in calls for tender, tender procedures and their implementation into the current work system in 2016.

## **Immunology**

The immunology laboratory carries out a wide range of examination methods for both humoral and cellular immunity, autoimmune status of organs and systems, and for allergies. It specializes in the diagnosis of sepsis in patients in critical conditions. The Allergy and Clinical Immunology outpatient unit takes care of patients with allergies, immunodeficiencies 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 hospital inpatient wards in the field of allergy and clinical immunology.

Based on public tender results, a part of medical device equipment of the laboratory was replaced. The offer of specific IgEs was streamlined and its major part was transferred to be performed by means of a more precise automated method (fluoroimmunoassay).

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), Clinic of Anesthesiology and Resuscitation of the 1st Medical School (clinical study on sepsis), participation in educational activities of the Institute of the 2nd Medical School, Charles University. Assoc. Prof Průcha became a member of Laboratory Immunology Section of the Czech Society of Allergology and Clinical Immunology. Lecturing activities and scientific publications are recorded in the database of publication activities of the Na Homolce Hospital.

## **Laboratory of molecular diagnostics**

The Laboratory of Molecular Diagnostics uses molecular genetics to diagnose hereditary diseases and genetic predisposition 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. The laboratory introduced laboratory testing of molecular diagnostics of celiac disease, using a selected diagnostic set (BAG). Successful external quality audits of molecular diagnostics of selected diseases was performed in the laboratory. A diagnostic method for the detection of IDH1 and IDH2 gene mutations for tumors of the central nervous system was developed in 2016. This method should be implemented as a routine examination method used by the laboratory in the next year.

## **Perspectives for 2017**

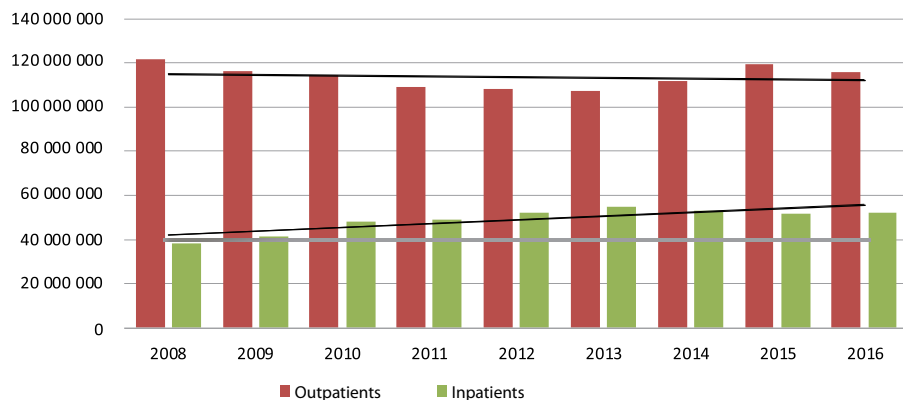
We plan to replace the device used for diagnostics and introduce molecular genetic testing of IDH1 and IDH2 for tumors of the central nervous system as a standard method (R132, R172).

## **Economic data for 2016**

In 2016, the Department recorded an increase in the number of tests which, however, was not followed by an increase in the number of points compared to 2015. The number of tests/points for inpatients was stable and the number of outpatient points decreased. This is an undesirable development in terms of hospital economy. Should this trend be confirmed also in the next year, it is advisable to take structural and organizational measures. However, economic overviews clearly show that the Department of Clinical Biochemistry, Hematology and Immunology continues to be profitable.

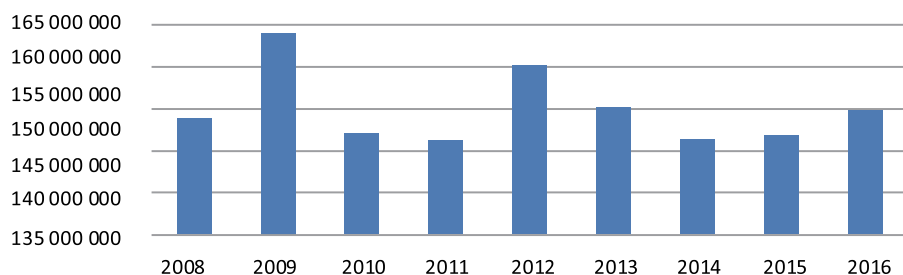
# Summary of Activities of Departments Providing Complementary Services

## Production of points



2008	2009	2010	2011	2012	2013	2014	2015	2016
159 853 365	157 930 787	162 671 261	157 969 950	160 290 520	162 277 868	164 727 853	171 305 865	168 126 647

## Costs



2008	2009	2010	2011	2012	2013	2014	2015	2016
148 752 708	159 065 345	147 052 894	146 283 130	155 182 112	150 094 793	146 306 456	146 850 735	149 856 368

## Educational and other specialized activities

- Nationwide training and reference activities:** Training center of the subdepartment of the Institute for Further Training in Healthcare for clinical immunology and allergy; training center of the Department of Clinical Biochemistry of the Institute for Further Training in Healthcare 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 of Allergology and Clinical Immunology, Czech Immunological Society, Czech Neurological Society, 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.

# Summary of Activities of Departments Providing Complementary Services

## 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
<b>Number of facilities</b>	187	185	217	177	163	141	132
	2010	2011	2012	2013	2014	2015	2016
<b>Number of facilities</b>	107	101	103	95	97	89	76

### Laboratory diagnostics

#### Requests for microbiology examinations for 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
<b>2016</b>	<b>57 478</b>	<b>10 368</b>	<b>67 846</b>

#### 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
<b>2016</b>	<b>15 509</b>	<b>2 391</b>	<b>17 900</b>	<b>76</b>

# Summary of Activities of Departments Providing Complementary Services

## 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
<b>2016</b>	<b>72 994</b>	<b>12 770</b>	<b>85 764</b>

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
<b>2016</b>	<b>11 388</b>	<b>2 798</b>

## Public activities, lectures and publications

- The Department staff had 3 presentations at domestic workshops, conferences and congresses. The Department was involved in one work published in an international high-impact journal.
- Working group for antibiotic resistance monitoring: The Department is part of the group of laboratories monitoring resistance to antibiotics in the Czech Republic, the head of the Department is a member of the working group for antimicrobial resistance monitoring.
- The National Reference Center for Infections Associated with Healthcare: The head of the Department is a member of the National Reference Center for Infections Associated with Healthcare.
- Society for Medical Microbiology of the Czech Medical Association of the J. E. Purkyně: The head of the Department is a member of the committee of the Society for Medical Microbiology of the Czech Medical Association of the J. E. Purkyně.

## Antibiotic Center

### Consultations provided to inpatients of the Na Homolce Hospital

Year	Number of consultations	Number of patients consulted
2003	6 960	1 559
2004	7 291	1 622
2005	8 493	1 833
2006	7 922	1 870



# Summary of Activities of Departments Providing Complementary Services

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## Comments

- **Laboratory diagnostics:** In 2016, the number of requests for laboratory microbiological examinations slightly increased, as compared to the previous year. There was a decrease in the number of cooperating health care facilities (practices), the number of examinations performed for external clients remained unchanged.
- **Antibiotic Center:** The number of provided consultations and consulted patients increased in 2016 and reached the highest level ever. No basic epidemiological changes in the resistance of infection originators were recorded.
- **Infection prevention and control:** In 2016, there was a slight increase in the incidence of nosocomial bloodstream infections, selectively in certain departments and patient subgroups. The number of patients colonized or infected by MRSA increased as compared to the previous year, the number of MRSA transmissions during hospitalization in the Na Homolce Hospital decreased. There was an increase 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 2015.
- **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 is involved in teaching nurses and physicians in the field of infection control organized by the National Reference Center for Infections Associated with Healthcare which is part of the State Healthcare Institute. 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 started participating in Euro-GASP program, as well as in the surveillance program for *Gonococcus* antimicrobial resistance organized by the European Center for Disease Prevention and Control (ECDC, Stockholm). The Department cooperates with the Higher Nursing School in Prague (Alšovo nábřeží) in providing training to laboratory technicians.



# Summary of Activities of Departments Providing Complementary Services

## 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 comprehensive services 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 increase 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 a special methods laboratory (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 in 2014;
- 7 lab technicians working full-time, 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 secretaries (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 and quality manager, administrative offices, rooms for employees, changing rooms, storerooms for preparations and workshop rooms;
- The autopsy unit with a dissection room, 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, special methods laboratory, laboratory for cutting materials fixed in formol-saline, laboratory for cutting materials using microtomes, and a cytology screener's room.

# Summary of Activities of Departments Providing Complementary Services

## Performance overview

### Biopsy diagnostics

	2005	2009	2011	2012	2014	2015	2016
Number of examinations	19 546	21 831	22 670	21 643	20 817	22 525	<b>20 970</b>
Number of slides	49 290	58 429	61 631	65 890	63 972	65 489	<b>61 401</b>

### Cytological diagnostics

	2005	2009	2011	2012	2014	2015	2016
Number of examinations	5 349	2 738	2 153	2 205	1 993	1 992	<b>2 249</b>
Number of slides	11 744	6 214	5 092	4 932	4 365	4 392	<b>5 191</b>
BAL (bronchoalveolar lavage)			187	162	121	107	<b>114</b>

There was a slight decrease in the number of biopsy examinations in 2016 compared to 2015, while the number of cytological examinations increased. In 2016, the laboratory of the Department increased the number of immunohistochemistry examinations by 0.6%, which is given by the complicated diagnostics of the tested samples and the necessity to increase the accuracy of tumor lesions classification.

### Autopsy activities

	2005	2009	2011	2012	2014	2015	2016
Number of the diseased	286	270	226	216	225	196	<b>233</b>
Number of autopsies	248	154	136	122	123	122	<b>136</b>

Autopsy rate for 2016 amounts to 60.1%!

## Workshops

In 2016, the physicians of the Department attended 94 clinical pathological conferences, where 19 autopsies and 701 biopsy cases were discussed.

	2005	2009	2010	2012	2014	2015	2016
Number of workshops	127	85	98	88	102	95	<b>94</b>
Number of autopsy cases	65	82	27	20	22	21	<b>19</b>
Number of biopsy cases	377	684	612	843	837	753	<b>701</b>

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 oncologist, focused on the 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 of the Teaching Hospital in Motol 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, clinical pathological workshops together with the Department of Cardiac Surgery are organized once a month. These workshops are part of the further training program of clinical departments, aimed at increasing the quality required under the accreditation standards.

# Summary of Activities of Departments Providing Complementary Services

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## Changes and new events

### ČIA – ISO accreditation

The Department of Pathology obtained a repeated accreditation of the Czech Accreditation Institute (ČIA) - ISO 15189:2013 - in May 2015. A supervision procedure is successfully performed every year.

### 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.

- As part of the Center for neuro-oncological section of the Czech Society for Oncology of the Czech Medical Association of J. E. Purkyně, the Department performs biobanking of brain tumors for research purposes.
- Since 2016, examinations of the sentinel lymph node in selected patients with breast cancer are performed (in cooperation with the Department of General Surgery, Department of Nuclear Medicine and PET Center).

## Development perspectives for 2017

- Accreditation of medical specialties of the Czech Ministry of Health is expected to be received for the field of pathology.
- We will maintain and further improve the standard of diagnostics and clinical and pathological workshops.
- The range of immunohistochemical antibodies will be extended according to the needs of individual hospital departments.
- The Department will introduce immunohistochemical devices in order to improve and speed up diagnostics using immunohistochemical methods.
- In cooperation with the molecular diagnostics laboratory of the Na Homolce Hospital, the classification of brain tumors according to the new histological and molecular WHO classification will be introduced.

# Summary of Activities of Departments Providing Complementary Services

## Department of Biomedical Engineering

| Head of Department: Ing. Miroslav Halíř

The main task of the Department is to ensure operation and service of medical equipment and measuring instruments in the Na Homolce Hospital, including in the Spa Resort Mánes in Karlovy Vary. Other activities include monitoring of new trends in biomedicine and preparation of technical documents for tenders for new medical device equipment. 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 inspections of medical devices as stipulated by the Act No. 268/2014 Coll., on Medical Devices, as amended, as well as by JCI standards. It carries out regular internal maintenance, ensures timely prevention and servicing by external 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 help for the implementation of new medical equipment. It follows new developments in the field of medical equipment and devices, ensures navigation systems in neurosurgery, auto-transfusion for cardiac and vascular surgery, as well as calibration of anesthesia equipment. In addition, it cooperates with clinical departments in preparing technical specifications for public tenders.

### Metrology Section

This section makes sure that the metrology standards in the 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 obligations 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 instruments measuring 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 instruments for indirect measurement of pressure – tonometers, within the scope of the decision No. 61/2000 of the Office for Standards, Metrology and Testing.

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 for specializations in biomedical subjects in the Czech Republic. In 2016, it participated in undergraduate educational activities performed for the School of Electrical Engineering of the Czech Technical University, School of Biomedical Engineering of the Czech Technical University and Technical University of Liberec.

# Summary of Activities of Departments Providing Complementary Services

## Mánes Spa Resort, Karlovy Vary

| Manager of Spa Resort: Alena Pelikánová

### 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. It also uses free accommodation capacities for the provision of hotel services to a lesser extent. A total of 2 372 patients were treated in the Spa Resort in 2016 (of which 584 were pediatric patients); clients of health insurance companies comprised 863 patients (of which 488 were pediatric patients).

The total number of pediatric patients with GIT diseases and diabetes treated in the Spa Resort Mánes in 2016 reached more than 50% of the total number of all pediatric patients with the same diagnoses treated in spas in the entire country. It only confirms that the Spa Resort Mánes 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 25–26, 2016, together with the Czech Diabetes Society, specialized conference “Nursing working days in diabetology” and concurrently the Forum of members of the diabetes section of the Czech Nursing Association. The guarantor of the event

was Jaroslav Škvor, MD, CSc. from the Pediatric Clinic of Masaryk Hospital in Ústí nad Labem. The conference was attended by pediatricians, pediatric and general nurses, nutritional therapists, nurses working in balneology or in the field of pediatric diabetology, endocrinology and internal medicine.

### Development perspectives for 2017

The volume of the follow-up medical care provided to patients sent to the Spa Resort directly from the departments or specialized outpatient units of the Na Homolce Hospital will be increased. Cooperation with the Department of Rehabilitation and Physical Medicine in the framework of early rehabilitation care will continue.

Holistic approach to the care of pediatric patients and their families will be further developed in the pediatric part of the Spa Resort in the coming period. Further trained healthcare workers will be involved in education of newly diagnosed diabetic patients and diabetic patients arriving to the Spa Resort repeatedly. Special nutritional education provided to children with other chronic conditions (and their parents) treated here for celiac disease, obesity, Crohn’s disease, inflammatory bowel disease (IBD), ulcerative colitis, or liver diseases will be updated, using a new nutrition software.

In cooperation with the kindergarten and elementary school of the Spa Resort Mánes, we are involved in the nationwide project “Moving Czechia” by implementing the program “Children at the Starting Gate” in the framework of which general physical activity of preschool and young school children will be ensured during their stay in the Spa Resort. We will further participate in the nation-wide partnership program “Physical activity and nutrition”. Our pilot study Screening DMT2 in obese children will continue for the third year.

# Research and Development Activities

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# Research and Development Activities

In the Na Homolce Hospital, research and development are supported by means of combined financing – institutional support and special purpose grants which are provided to projects carried out both by individual departments of the hospital and in cooperation with a number of excellent research facilities in the entire country. Research and development carried out in the Na Homolce Hospital has been supported also by signing a memorandum on mutual cooperation with the Czech Academy of Sciences which is complementary to the current Cooperation Agreement with the 1st Medical School, Charles University, Prague. The majority of research teams have been involved also in clinical studies over a long period of time with the Cardiac Center having the largest share in these studies.

## Research and Development Department

- The Department has 3 workers (2.6 FTE) and comprises: (a) Clinical Trials Unit and (b) Grant Projects Unit.
- In the field of clinical trials, it ensures:
  - Administration and supervision of clinical studies;
  - Recording, register management and reporting;
  - Preparation of internal forms and documents for clinical studies;
  - Coordination of work performed for selected studies (in particular, data entering);
  - Communication with supervision bodies (SÚKL, ethics committees, etc.);
  - Organization of training in GCP for healthcare professionals of the Na Homolce Hospital;
- In the field of grant projects, it ensures:
  - Administration and supervision of R&D institutional and special purpose projects;
  - Use of grants and their eligibility;
  - Planning of research projects;
  - Reporting (output, analysis, statistics);
  - Central record keeping and management of research projects;
  - Administration requested by grant providers

## Research grants

A total of 46 research projects were carried out in the Na Homolce Hospital in 2016, of which 41 were projects which received institutional support from the Czech Ministry of Health and 5 were special purpose projects supported by the Agency for Medical Research of the Czech Ministry of Health (AZV MZ ČR) and the Grant Agency of the Czech Ministry of Health (GA ČR).

### Grants of the Czech Ministry of Health

- In 2016, the Na Homolce Hospital received a grant for a long-term conceptual development of the research organization for the third time in its history, based on the decision of the Czech Ministry of Health (Decision No. 1 RVO-NNH/2016). The support for 2016 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 evaluated five years (2009-2013), based on the assessment performed by the Committee for Research, Development and Innovations.

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

Year	Grant type	Total	Investment	Non-investment
2016	Dotace	17 328 000.00	3 883 000.00	13 445 000.00

- The grant was used and distributed on the basis of the functional system for internal grants, the decision of a specialized committee and approval by the Scientific Council and by the director of the Na Homolce Hospital.
- In line with the guidelines of the Czech Ministry of Health, 15 research projects which started in 2014, 16 research projects initiated in 2015 and 11 new projects were supported in 2016 by the grant provided by the Czech Ministry of Health. The Na Homolce Hospital again supported a large spectrum of research projects in order to maintain the plan of a broader research basis for

# Research and Development Activities

the coming years which fully corresponds with the method of evaluation by research institutions used for providing grants. The implementation of new research projects started in April 2016 and continues at present.

## Special purpose grants of the Agency for Medical Research of the Czech Ministry of Health and the Czech Grant Agency

In 2016, a total of 5 special purpose projects were carried out in the hospital and 3 applications were submitted in response to the new call of the Agency for Medical Research of the Czech Ministry of Health.

Principal Investigator in NHH	Department	Project title	Allocated Number	Grant provider	Note
Robert Tomáš, MD, PhD	Neurosurgery	New concepts of therapeutic focus of human glioblastoma microenvironment	15-31379A	AZV MZ ČR (General Military Hospital in Prague as the main beneficiary)	Started in 2015
Assoc. Prof. Petr Neužil, CSc., FESC	Cardiology	Catheter LAA closure vs. therapy based on new oral anticoagulant drugs in high-risk patients with AF (study PRAGUE-17)	15-29565A	AZV MZ ČR (3rd Medical School as the main beneficiary)	Started in 2015
Assoc. Prof. Petr Ošťádal, MD, PhD	Cardiology	Extracorporeal membrane oxygenation in the treatment of cardiogenic shock (study ECMO-CS)	15-27994A	AZV MZ ČR (NHH as the main beneficiary)	Started in 2015
Dušan Urgošík, MD, CSc.	Stereotactic and Radiation Neurosurgery	Micro- and macroconnectomy of subthalamic nucleus in humans: effect of neuromodulation and dopamine depletion	16-13323S	GA ČR (1st Medical School, Charles University as the main beneficiary)	Started in 2015
Assoc. Prof. Robert Jech, MD, PhD	Radiodiagnosics	Diagnostic neurophysiological and laboratory markers and pathophysiological mechanisms of functional movement disorders	16-29651A	AZV ČR (General Teaching Hospital as the main beneficiary)	Started in 2016



# Research and Development Activities

## Clinical studies

In 2016, a total of 91 active clinical studies were recorded of which 11 clinical studies were finished during 2016.

Number of studies performed in 2016 - by the subject:

Clinical studies	Number	
Medical devices	55	60%
Medicines	18	20%
Partial healthcare services	18	20%
<b>Total</b>	<b>91</b>	<b>100%</b>

Number of studies performed in 2016 - by the department:

Clinical studies	Number	
Internal medicine	1	1%
Cardiology	51	56%
Cardiac surgery	7	8%
Neurosurgery	3	3%
Neurology	2	2%
Oncology	6	7%
Radiology	5	6%
Nuclear medicine / PET	15	16%
Pharmacy	1	1%
<b>Total</b>	<b>91</b>	<b>100%</b>

Number of studies performed in 2016 - by the subject and the department:

Clinical studies	Medical devices	Medicines	Partial healthcare services
Internal medicine	0	1	0
Cardiology	45	6	0
Cardiac surgery	5	2	0
Neurosurgery	2	1	0
Neurology	1	1	0
Oncology	0	6	0
Radiodiagnostics	2	1	2

Nuclear medicine / PET	0	0	15
Pharmacy	0	0	1
<b>Total</b>	<b>55</b>	<b>18</b>	<b>18</b>

## Performed audits of clinical studies

In 2016, six audits of clinical studies were performed by regulatory authorities (State Institute for Drug Control – SÚKL) in the Research and Development Department:

06/2016	SÚKL audit	Clinical study EUROPE	No irregularities found
06/2016	SÚKL audit	Clinical study HRT MITRAL BRIDGE	No irregularities found
09/2016	SÚKL audit	Clinical study MICRA	No irregularities found
09/2016	SÚKL audit	Clinical study REDUCE LAP	No irregularities found
10/2016	SÚKL audit	Clinical study SELECT-LV	No irregularities found
12/2016	SÚKL audit	Clinical study DDRAMATIC-SVT	No irregularities found

## Workshops and trainings related to clinical studies

In 2016, the Research and Development Department organized one specialized training concerning clinical studies for the entire hospital: DEC 2016 - Good clinical practice training for 42 employees (34 employees of the Department of Cardiology, 3 employees of the Department of Cardiac Surgery, 2 employees of the Department of Gynecology, 1 employee of the Department of Internal Medicine, Department of Neurosurgery and Research and Development Department each).

## Summary

Basic breakdown of research projects in the Na Homolce Hospital in 2016:

Scientific project type	Subject	Number
Clinical studies	Medical devices	55
	Medicines	18
	Partial healthcare services for external investigators	18
Research grants	Institutional support (internal grants)	41
	Special purpose support (external grants)	5
<b>Research projects - total</b>		<b>137</b>

# Publications in 2016

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# Publications in 2016

## Publications co-authored by the Na Homolce Hospital staff

### Foreign

#### Chapters in books

- 1) PRŮCHA M. – MALÁSKA J. – ZAZULA R. – MORAVEC M., Pathogenesis of sepsis. In Sepsis, Dover: SM ebgroup, 2016, s. 1–15. ISBN 978-1-944685-04-1.

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- 1) BĚLOHLÁVEK O. – JARŮŠKOVÁ M., [18F]FDG-PET scan in patients with fasting hyperglycemia. The Quarterly Journal of Nuclear Medicine and Molecular Imaging, 2016, vol. 60, s. 404–412. ISSN 1824-4785.
- 2) BIASE L. – MOHANTY P. – MOHANTY S. – SANTANGELI P. – TRIVEDI C. – LAKKIREDDY D. – REDDY M. – JAIS P. – THEMISTOCLAKIS S. – RUSSO A. – CASSELLA M. – PELARGONIO G. – NARDUCCI M. – SCHWEIKERT R. – NEUŽIL PETR P., Ablation Versus Amiodarone for Treatment of Persistent Atrial Fibrillation in Patients With Congestive Heart Failure and an Implanted Device: Results From the AATAC Multicenter Randomized Trial. Circulation, 2016, vol. 133, s. 1637–1644. ISSN 0009-7322.
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- 6) BUŠEK P. – BALÁŽIOVÁ E. – MATRASOVÁ I. – HILSER M. – TOMÁŠ R. – SYRŮČEK M. – ZEMANOVÁ Z. – KŘEPELA E. – BELÁČEK J. – ŠEDO A., Fibroblast activation protein alpha is expressed by transformed and stromal cells and is associated with mesenchymal features in glioblastoma. Tumor Biology, 2016, vol. 37, s. 13961–13971. ISSN 1010-4283.
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- 8) ERTEKIN E. – VAN HAGEN I. – SALAM A. – RUYS T. – JOHNSON M. – POPELOVÁ RUBÁČKOVÁ J. – PARSONAGE W. – ASHOUR Z. – SHOTAN A. – OLIVER J. – VELDTMAN G. – HALL R. – ROOS-HESELINK J., Ventricular tachyarrhythmia during pregnancy in women with heart disease: Data from the ROPAC, a registry from the European Society of Cardiology. International Journal of Cardiology, 2016, vol. 220, s. 131–136. ISSN 0167-5273.
- 9) FENCL P. – BĚLOHLÁVEK O. – HARUŠTIAK T. – ZEMANOVÁ M., FDG-PET/CT lymph node staging after neoadjuvant chemotherapy in patients with adenocarcinoma of the esophageal–gastric junction. Abdominal Radiology, 2016, vol. 41, s. 2089–2094. ISSN 2366-004X.

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- 10) HASENFUS G. – HAYWARD C. – BURKHOFF D. – SILVESTRY F. – MCKENZIE S. – GUSTAFSSON F. – MÁLEK F. – VAN DER HEYDEN J. – LANG I. – PETRIE M. – CLELAND J. – LEON M. – KAYE D., A transcatheter intracardiac shunt device for heart failure with preserved ejection fraction (REDUCE LAP-HF): a multicentre, open-label, single-arm, phase 1 trial. *Lancet*, 2016, vol. 387, s. 1298–1304. ISSN 0140-6736.
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- 17) KUČERA R. – TOPOLČAN O. – FIALA O. – KINKOROVÁ J. – TRESKA V. – ZEDNÍKOVÁ I. – SLOUKA D. – ŠIMÁNEK V. – ŠAFANDA M. – BABUŠKA V., The Role of TPS and TPA in the Diagnostics of Distant Metastases. *Anticancer Research*, 2016, vol. 36, s. 773–777. ISSN 0250-7005.
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- 22) MALÍKOVÁ H. – KOUBSKÁ E. – VOJTĚCH Z. – WEICHET J. – SYRŮČEK M. – ŠROUBEK J. – RULSEH A. – LIŠČÁK R., Late morfological changes after radiosurgery of brain arteriovenous malformations: an MRI study. *Acta Neurochir*, 2016, vol. 158, s. 1683–1690. ISSN 0001-6268.
- 23) NEUŽIL PETR P. – ORMISTON J. – BRINTON T. – STÁREK Z. – ESLER M. – DAWOOD O. – ANDERSON T. – GERTNER M. – WHITBOURNE R. – SCHMIEDER R., Externally Delivered Focused Ultrasound for Renal Denervation. *Journal of the American College of Cardiology – Cardiovascular Interventions*, 2016, vol. 9, s. 1292–1299. ISSN 1936-8798.

## Publications in 2016

- 24) PEDERSEN S. – MASTENBROEK M. – CARTER N. – BARR C. – NEUŽIL PETR P. – SCHOLTEN M. – LAMBIASE P. – BOERSMA L. – JOHANSEN J. – THEUNS D., A Comparison of the Quality of Life of Patients With an Entirely Subcutaneous Implantable Defibrillator System Versus a Transvenous System (from the EFFORTLESS S-ICD Quality of Life Substudy). *American Journal of Cardiology*, 2016, vol. 118, s. 520–526. ISSN 0002-9149.
- 25) PSOTOVÁ H. – OŠŤÁDAL P. – MLČEK M. – KRÜGER A. – JANOTKA M. – VONDRÁKOVÁ D. – SVOBODA T. – HRACHOVINA M. – TÁBORSKÝ L. – DUDKOVÁ V. – STRUNINA S. – KITTNAR O. – NEUŽIL PETR P., Ischemic Postconditioning and Nitric Oxide Administration Failed to Confer Protective Effects in a Porcine Model of Extracorporeal Cardiopulmonary Resuscitation. *Artificial Organs*, 2016, vol. 40, s. 353–359. ISSN 1525-1594.
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- 30) ŠIMONOVÁ G. – KOZUBÍKOVÁ P. – LIŠČÁK R. – NOVOTNÝ J., Leksell Gamma Knife treatment for pilocytic astrocytomas: long-term results. *Journal of Neurosurgery: Pediatrics*, 2016, vol. 18, s. 58–64. ISSN 1933-0707.
- 31) ŠPINAR J. – JARKOVSKÝ J. – ŠPINAROVÁ L. – MEBAZAA A. – GAYAT E. – VÍTOVEC J. – LINHART A. – WIDIMSKÝ P. – MIKLÍK R. – ZEMAN K. – BĚLOHLÁVEK J. – MÁLEK F. – FELSOCI M. – KETTNER J. – OŠŤÁDAL P., AHEAD score — Long-term risk classification in acute heart failure. *International Journal of Cardiology*, 2016, vol. 202, s. 21–26. ISSN 0167-5273.
- 32) ŠTÁDLER PETR P. – DVOŘÁČEK L. – VITÁSEK P. – MATOUŠ P., Robot assisted Aortic and Non-aortic Vascular Operations. *Europ. Journal of Vascular a. Endovascular Surgery*, 2016, vol. 52, s. 22–28. ISSN 1078-5884.
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- 35) XU A. – BHATNAGAR J. – BEDNARZ G. – NOVOTNÝ J. – FLICKINGER J. – LUNSFORD L. – HUQ M., Two-year experience with the commercial Gamma Knife Check software. *Journal of Applied Clinical Medical Physics*, 2016, vol. 17, s. 96–95–105. ISSN 1526-9914.
- 36) ZIPES D. – NEUŽIL PETR P. – THÉRES H. – CARAWAY D. – MANN D. – MANNHEIMER C. – VAN BUREN P. – LINDE C. – LINDEROTH B. – KUEFFER B. – SARAZIN S. – JONGSTE DE M., Determining the Feasibility of Spinal Cord Neuromodulation for the Treatment of Chronic Systolic Heart Failure: The DEFEAT-HF Study. *Journal of the American College of Cardiology. Heart Failure*, 2016, vol. 4, s. 129–136. ISSN 2213-1779.

# Publications in 2016

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### Chapters in books

- 1) BĚLOHLÁVEK O., Pozitronová emisní tomografie. In Koronární cirkulace, Praha: Maxdorf, 2016, s. 231–233. ISBN 978-80-7345-487-6.
- 2) OŠTĀDAL P. – BĚLOHLÁVEK J., Extrakorporální membránová oxygenace v akutní kardiologické péči. In Novinky v akutní kardiologii, Praha: Mladá fronta, 2016, s. 241–248. ISBN 978-80-204-3903-1.
- 3) POPELOVÁ RUBÁČKOVÁ J., Echokardiografie u vrozených srdečních vad v dospělosti. In Novinky v kardiologii 2016, Praha: Mladá fronta a.s., 2016, s. 205–216. ISBN 978-80-204-3984-0.
- 4) POPELOVÁ RUBÁČKOVÁ J., Získané a vrozené srdeční vady v ambulanci kardiologa. In Manuál ambulantního specialisty – kardiologa, Praha: Mladá fronta a.s., 2016, s. 146–164. ISBN 978-80-204-4226-0.
- 5) SAMEŠ M. – CHOVANEC M. – VACHATA P. – BETKA J. – ZVĚŘINA E. – LIŠČÁK R., Vestibulární schwannom. In Lícni nerv – Anatomie, patologie, léčba., Praha: Mladá fronta, 2016, s. 272–300. ISBN 978-80-204-3252-0.
- 6) TOMÁŠ R. – KLENER J., Hypoglosfaciální anastomóza. In Lícni nerv – Anatomie, patologie, léčba., Praha: Mladá fronta a.s., 2016, s. 182–191. ISBN 978-80-204-3252-0.

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- 1) HÁLA P. – MLČEK M. – OŠTĀDAL P. – JANÁK D. – POPKOVÁ M. – BOUČEK T. – LACKO S. – KUDLIČKA J. – NEUŽIL P. – KITTNAR O., Regional tissue oximetry reflects changes in arterial flow in porcine chronic heart failure treated with venoarterial extracorporeal membrane oxygenation. *Physiological Research*, 2016, vol. 65, s. 621–631. ISSN 0862-8408.
- 2) JANOUŠKOVÁ L., Endovaskulární léčba arteriovenózní malformace. *Česká a slovenská neurologie a neurochirurgie*, 2016, vol. 79, s. 641–641. ISSN 1210-7859.

- 3) KAŠÍK J. – KLENER J. – TITTELBACH L. – TOMÁŠ R. – ŠROUBEK J. – MAŠEK M., Promptní resorpce traumatického akutního subdurálního hematomu – kazuistika. *Česká a slovenská neurologie a neurochirurgie*, 2016, vol. 79, s. 86–89. ISSN 1210-7859.
- 4) LIBERTÍNOVÁ J. – MELUZÍNOVÁ E. – HAVRDOVÁ E. – HORÁKOVÁ D. – KOVÁŘOVÁ I. – HYNČICOVÁ E. – LIŠKOVÁ P. – HOUŽVIČKOVÁ E. – MAŤOŠKA V. – ZAJAC M. – TOMEK A. – BOJAR M. – MARUSIČ P., Myxovirus resistance protein A v terapii interferony – Beta u pacientů s roztroušenou sklerózou a algoritmus sledování účinnosti léčby. *Česká a slovenská neurologie a neurochirurgie*, 2016, vol. 79, s. 547–551. ISSN 1210-7859.
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# Quality and Safety

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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 the Na Homolce Hospital are the main pillars of its stability. Striving to provide quality health care in compliance with clearly defined standards, the Na Homolce Hospital was encouraged to maintain its international accreditation of healthcare facilities Joint Commission International (JCI).

The Na Homolce Hospital has had the status of “world quality brand” – the Joint Commission International (JCI) international accreditation since 2005, when it passed the first accreditation audit. Since then, we successfully defended this international accreditation three times. 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 has held the JCI accreditation certificate for the longest period in the country. Accreditation is granted for the period of three years. In order to retain the certificate, the hospital will have to defend it again in 2017 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 monitors, 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, rights of patients and their family members, diagnostic and therapeutic care, storing and administration of drugs, education of patients and their family members, 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, qualifications 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 standard. 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 and Safety

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## Quality system in the Na Homolce Hospital

### ISO 15189

The following laboratories: Department of Clinical Biochemistry, Hematology and Immunology, Immunoanalytical Laboratory, Biopsy Laboratory of the 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 of the 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 using the 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 work organization, including process management, management of resources, monitoring, and assessment of procedure efficiency.

### ISO 13485

Since 2014, the Department of Central Sterilization is the holder of a certification for the system of quality management of medical devices in accordance with the international standard ISO 13485. The Department of Central Sterilization is

a workplace that ensures disinfection, preparation before sterilization and material sterilization for all facilities in the Na Homolce Hospital, as well as the provision of 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 health-care 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 November 16, 2016, 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.

# Quality and Safety

## What do we do to prevent pressure sores:

- 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 sores in each patient.

## Preventive measures taken in all patients at risk:

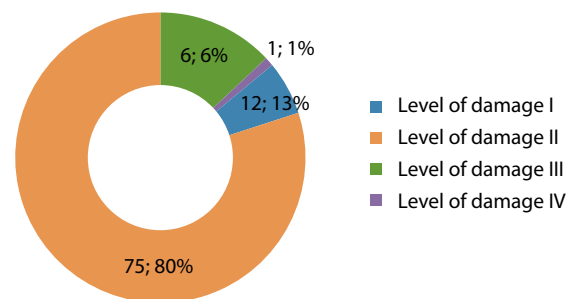
- Elimination of any source of pressure on tissues;
- Careful treatment and regular positioning of immobile patients;
- Professional hygiene using the best cosmetic preparations and aids;
- Emphasis on clean and dry sheets and clothing;
- Use of the best anti-decubitus bed pads and mattresses, positioning 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



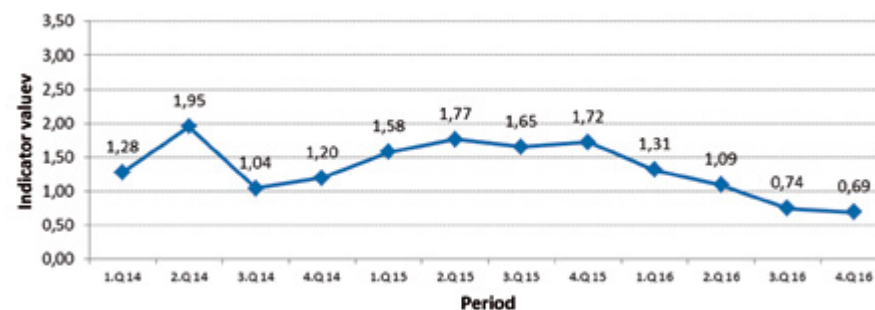
## Our results

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 conditions 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 in order to further improve care of these patients.

Level of damage in pressure ulcers 1 January 2016 – 31 December 2016



The number of pressure ulcers in the Na Homolce Hospital 2014–2016



# Quality and Safety

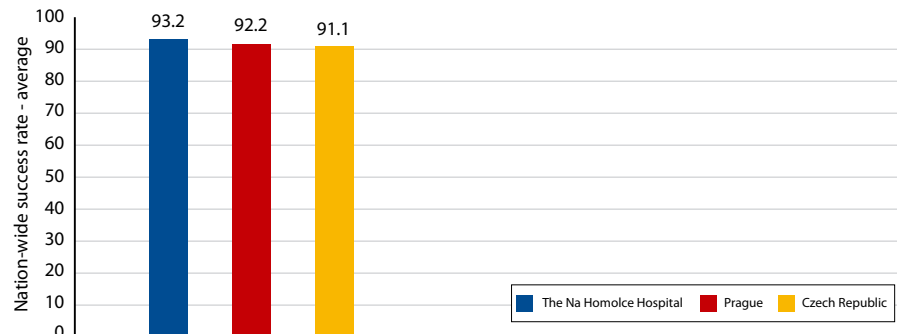
## Monitoring of patient satisfaction

### Satisfaction survey as part of the project “Hospitals in the Czech Republic”

The Na Homolce Hospital participated in a national survey of satisfaction of outpatients, inpatients and employees called “Hospitals in the Czech Republic 2016”. The aim of the project was to make a regular ranking of hospitals in the country in accordance with satisfaction with the quality of provided services. A total of 155 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 2016. 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

The Na Homolce Hospital (93.2% success rate) ranked **4th in Prague and 14th in the country**. The Na Homolce Hospital may be classified as highly above average (rating A). In 2016, a total of 1 910 respondents answered the questionnaire, of whom 1 835 (96.1%) opted for a printed version and 75 (3.9%) for an electronic version of the questionnaire.



### Satisfaction of outpatients

The Na Homolce Hospital (93.2% success rate) ranked **4th in Prague and 23th in the country**. Thus, the Na Homolce Hospital may be classified as highly above average. In 2016, a total of 2 552 respondents answered the questionnaire, of whom 2 454 (96.2%) opted for a printed version and 98 (3.8%) for an electronic version of the questionnaire.

### 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 hospital website. 229 patients chose this possibility to express their views, mostly with a positive feed-back (187).

## Managed documentation

In 2015, the Quality Management Department set and implemented rules for managed documentation. All documents have been gradually transferred into a new format and newly classified into 9 processes (based on the process map of the Na Homolce Hospital). Since the project is demanding both in terms of time and administration, the transfer of documents into the form of managed documentation continued also in 2016 when electronic commenting on documents was introduced, as well as familiarizing staff members with documents using an electronic application (by means of their e-mails). A significant simplification and increase in transparency of the entire process were achieved compared to the previous “paper” method. Approximately 1 300 documents were published in 2016.

# Quality and Safety

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## Electronica Data Storage

In 2016, the Quality Management Department developed and streamlined the features of the electronic application “Electronic Data Storage” which was introduced in 2015. The application provides managerial staff members with 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 Electronic Data Storage contains structured and detailed data in the following categories: (1) extraordinary events, (2) falls, (3) pressure ulcers, (4) medication errors, (5) internal audits, (6) checklists, and (7) comments of patients.

## Pressure sore monitoring program

The Quality Management Department used in 2016 state budgetary allocations for the program of the Czech Ministry of Health “Safety and quality of healthcare in 2016”. The scope of the program was to establish a process of statistical data processing in order to optimize processes used for healthcare provision. As a priority, the program focused on the improvement of patient care in the field of pressure sore prevention in patients hospitalized at the Department of Anesthesia and Reanimation and the Department of Vascular Surgery. Data analysis output will lead to strengthened management and identifying processes for continuous improvement of patient care. Its aim is to statistically identify and reduce specific risk factors having an impact on the patient.

## Adverse Event Reporting System (AERS)

In 2016, the hospital joined the central Adverse Events Reporting System aiming at monitoring the incidence of adverse events in clinical practice, central reporting and provision of reporting guidelines in accordance with a single terminology and application of preventive measures, i.e. effective proactive protective strategies. Data are transferred once in 6 months, in accordance with AERS methodology.

Monitoring of adverse events in clinical practice, their incidence and management is governed by the EU Council Recommendation of 9 June 2009 on patient safety, including the prevention and control of healthcare associated infections (2009/C 151/01). Monitoring of adverse events in inpatient healthcare providers in the Czech Republic is governed by Article 47 of the Act No. 372/2011 Coll., on Healthcare Services, which provides for a requirement related to the internal assessment of quality and safety of provided healthcare services using the procedure published in the Bulletin of the Czech Ministry of Health (5/2012 – Minimum requirements for the introduction of the system of internal quality and safety assessment of provided healthcare services; 8/2012 – Methodology for monitoring of adverse events in inpatient healthcare facilities).

## Competition “Safe Hospital”

In 2016, the Na Homolce Hospital participated in the nation-wide competition “Safe Hospital” (organized by the region Vysočina) by presenting its project of the Department of Cardiac Surgery “Project for practicing cardiopulmonary resuscitation at the Department of Cardiac Surgery – managed by non-medical healthcare professionals”. The hospital placed 15th-16th.

# Economic Stability

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# Economic Stability

## Costs and revenues

<b>Healthcare costs</b>	<b>2016</b>	<b>2015</b>	<b>Increase/decrease 2016/2015</b>	<b>2016/2015%</b>
Medicines	86 659 420	82 401 663	4 257 757	105%
Separately accounted medicines	66 846 638	66 114 360	732 279	101%
Blood and blood derivatives	46 160 668	40 380 019	5 780 648	114%
Special medical materials	196 258 943	187 351 419	8 907 525	105%
Separately accounted materials	750 067 687	737 440 519	12 627 168	102%
<b>Personnel costs</b>	<b>2016</b>	<b>2015</b>	<b>Increase/decrease 2016/2015</b>	<b>2016/2015%</b>
Wages	984 031 805	954 121 895	29 909 910	103%
Obligatory payments	329 597 145	319 557 106	10 040 039	103%
<b>Other costs</b>	<b>2016</b>	<b>2015</b>	<b>Increase/decrease 2016/2015</b>	<b>2016/2015%</b>
Other consumables	86 398 281	72 136 058	14 262 223	120%
Energy	48 200 075	51 152 621	-2 952 546	94%
Sale of goods	121 244 187	115 174 936	6 069 251	105%
Repair and maintenance	59 548 140	27 164 394	32 383 746	219%
Travel expenses and education	8 550 976	7 375 793	1 175 183	116%
Services	113 978 532	143 921 698	-29 943 166	79%
Other costs	128 570 736	172 309 956	-43 739 220	75%
Depreciation	136 615 324	144 853 960	-8 238 636	94%
<b>Total costs</b>	<b>3 162 656 955</b>	<b>3 121 456 397</b>	<b>41 200 558</b>	<b>101%</b>
<b>Costs before taxes</b>	<b>3 151 231 525</b>	<b>3 099 802 967</b>	<b>51 428 558</b>	<b>102%</b>



# Economic Stability

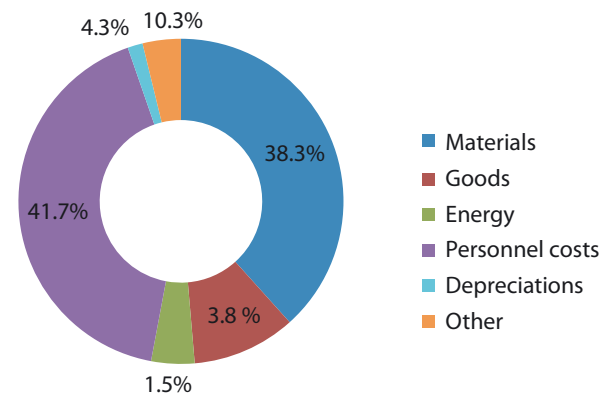
Revenues	2016	2015	Increase/decrease 2016/2015	2016/2015%
Own goods and services	2 856 424 392	2 813 558 994	42 865 398	102%
– of which revenues from health insurance companies	2 791 816 086	2 752 711 137	39 104 949	101%
Sale of goods	165 250 227	156 671 810	8 578 417	105%
Financial and other revenues	148 263 831	151 349 320	-3 085 489	98%
<b>Total revenue</b>	<b>3 169 938 450</b>	<b>3 121 580 124</b>	<b>48 358 326</b>	<b>102%</b>

Profit (loss)	2016	2015	Increase/decrease 2016/2015	2016/2015%
<b>Profit (loss) before taxes</b>	<b>18 706 925</b>	<b>21 777 157</b>	<b>-3 070 232</b>	<b>86%</b>
<b>Profit (loss) in the accounting period</b>	<b>7 281 495</b>	<b>123 727</b>	<b>7 157 768</b>	<b>5885%</b>

## Cost structure by types

<b>Total</b>	<b>100%</b>
Materials	38.3%
Goods	3.8%
Energy	1.5%
Personnel costs	41.7%
Depreciations	4.3%
Other	10.3%

Cost structure in 2016 by types



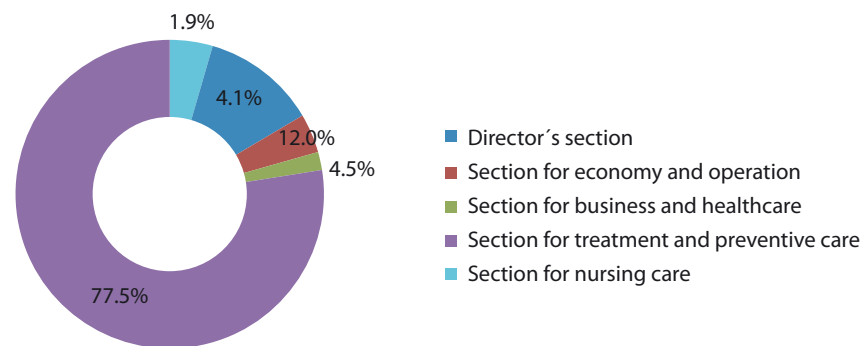


# Economic Stability

## Cost structure by sections

	2015	2016	2016 v %
NHH total	3 100	3 151	100%
Director's section	131	128	4.1%
Section for economy and operation	397	378	12.0%
Section for business and healthcare	132	142	4.5%
Section for treatment and preventive care	2 380	2 442	77.5%
Section for nursing care	60	61	1.9%

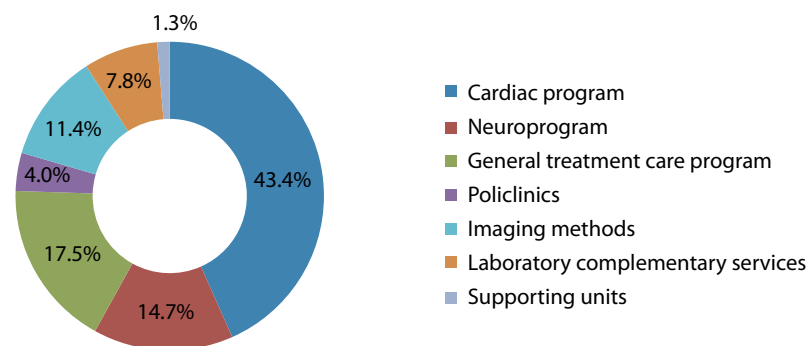
Cost structure in 2016 by sections



## Medical costs structure by programs

	2015	2016	2016 v %
Treatment and preventive care	2 380	2 442	100%
Cardiac program	1 056	1 060	43.4%
Neuroprogram	338	360	14.7%
General treatment care program	415	427	17.5%
Policlinics	100	97	4.0%
Imaging methods	269	278	11.4%
Laboratory complementary services	186	190	7.8%
Supporting units	18	31	1.3%

Medical costs structure in 2016 by programs



# Economic Stability

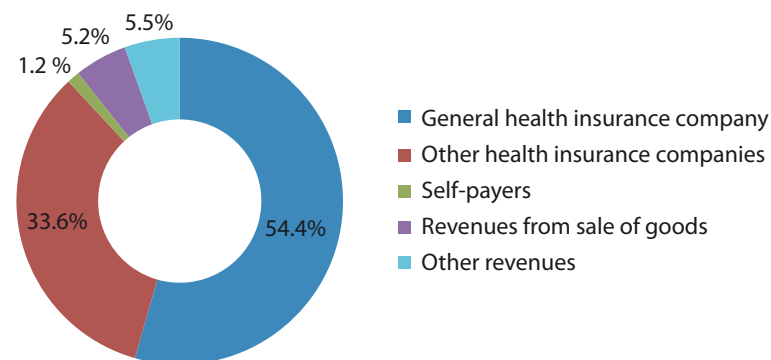
## Structure of revenues

<b>Total</b>	<b>100%</b>
General health insurance company	54.4%
Other health insurance companies	33.6%
Self-payers	1.2%
Revenues from sale of goods	5.2%
Other revenues	5.5%
Number of points per physician	6 326 880
Number of outpatient points per physician	2 311 968

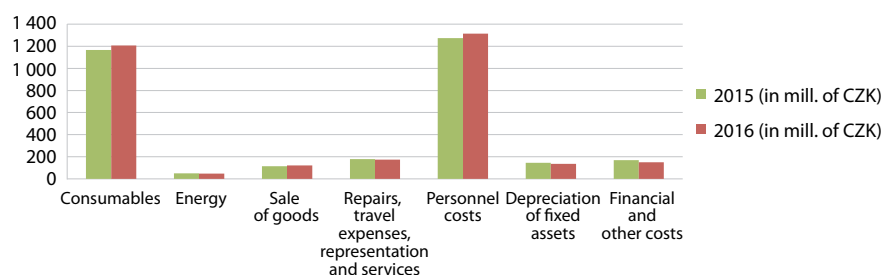
## Total costs and revenues (in mil. Of CZK)

Costs	2015 (in mill. of CZK)	2016 (in mill. of CZK)
Consumables	1 166	1 207
Energy	51	48
Sale of goods	115	121
Repairs, travel expenses, representation and services	178	174
Personnel costs	1 274	1 314
Depreciation of fixed assets	145	137
Financial and other costs	170	151
<b>Total costs</b>	<b>3 100</b>	<b>3 151</b>
Revenues	2015 (in mill. of CZK)	2016 (in mill. of CZK)
Revenues from own products and services	2 814	2 856
Revenues from sale of goods	157	165
Financial and other revenues	151	148
<b>Total revenues</b>	<b>3 122</b>	<b>3 170</b>
Profit (loss) before taxes	22	19

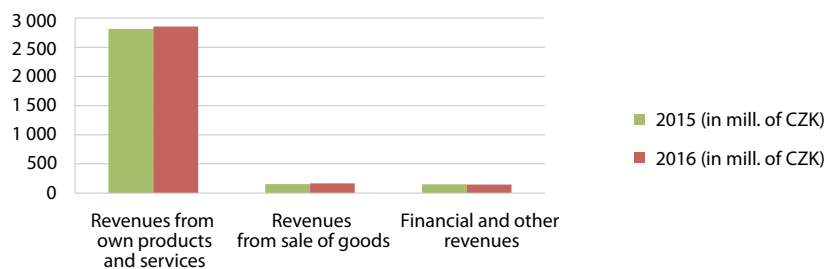
Structure of revenues in 2016



Comparison of costs in years



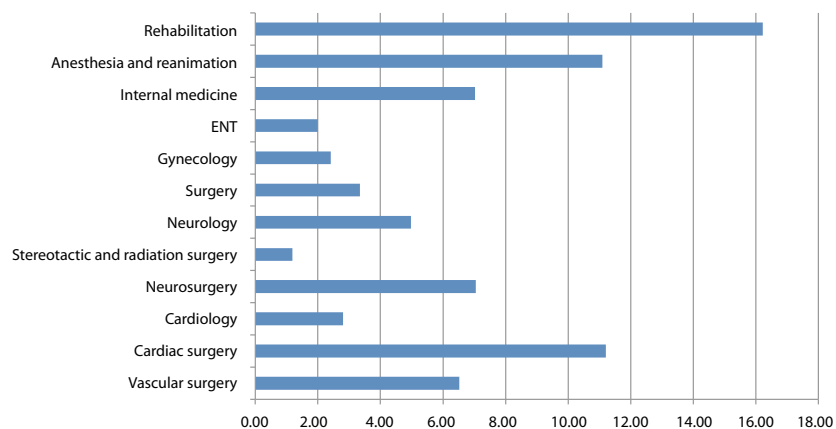
Comparison of revenues in years



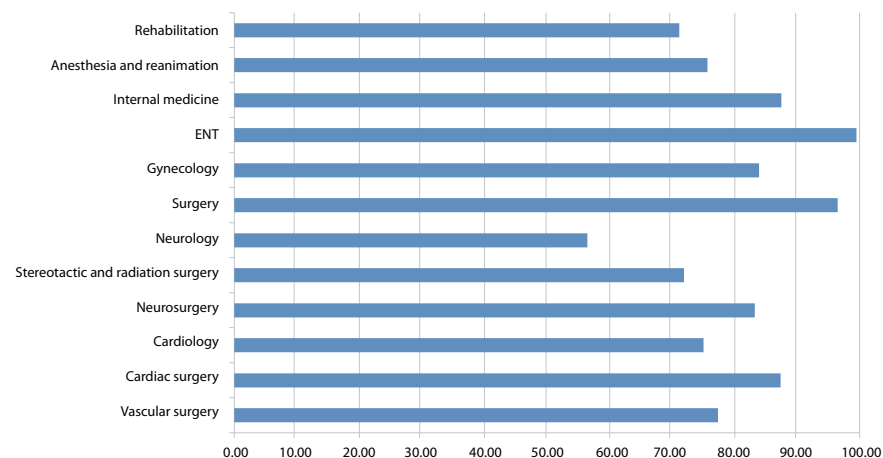
# Economic Stability

Cost unit	Title	Mortality	2016		
			Average treatment time	Treatment days	Bed occupancy rate (in %)
01	Vascular surgery	0.9%	6.52	16 374	77.33
02	Cardiac surgery	2.2%	11.21	10 114	87.33
05	Cardiology	1.3%	2.81	14 057	74.99
11	Neurosurgery	0.5%	7.05	18 112	83.23
12	Stereotactic and radiation surgery	0.0%	1.18	1 174	71.89
15	Neurology	2.2%	4.98	8 491	56.45
21	Surgery	0.1%	3.35	9 340	96.49
22	Gynecology	0.0%	2.41	3 525	83.89
23	ENT	0.0%	1.99	2 848	99.44
25	Internal medicine	2.4%	7.03	9 043	87.48
26	Anesthesia and reanimation	19.1%	11.10	2 154	75.63
31	Rehabilitation	0.0%	16.22	1 784	71.13
<b>NHH</b>	<b>Na Homolce Hospital</b>	<b>1.1%</b>	<b>4.89</b>	<b>97 016</b>	<b>79.76</b>

Average treatment time



Bed occupancy rate (in %)



# Information disclosure

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# Information disclosure pursuant to the Act No. 106/1999 Coll.

## Information disclosure pursuant to the 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 (hereinafter referred to as the "Act"), Na Homolce Hospital (hereinafter referred to as "NHH") presents the following annual report for 2016, related to its activities in the field of information disclosure:

- a) The number of submitted requests for information and the number of decisions issued on the denial of a request: NHH received a total of 10 requests for information. No decision on partial denial of a request was issued.
- b) The number of appeals filed against the decision: None.

- c) A 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 in connection with the legal proceedings on the rights and obligations under this Act, including the costs related to the legally bound person's employees and legal representation: There was no litigation concerning review of a NHH decision to deny information.
- d) A list of exclusive licenses granted, including justification of the necessity to grant an exclusive license: No exclusive licenses were granted.
- e) The number of complaints filed under Article 16a, reasons for filing and a brief description of the manner of their settlement: A total of one complaint was filed.

Date of filing the complaint	Grounds for filing the complaint	Brief description of the settlement
4 JAN 2016	Failure to provide all requested information	The complaint was forwarded to the Czech Ministry of Health

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

