NA HOMOLCE HOSPITAL

ANNUAL REPORT NA HOMOLCE HOSPITAL

2020

CONTENT

ABOUT US

A WORD FROM THE DIRECTOR

The year 2020, referred to as the year with covid-19, was extremely challenging for our hospital.

After selecting Na Homolce Hospital as a hospital for the treatment of patients with severe course of covid-19 in March 2020, we had to set the hospital operation to a very special regime in a very short time. Almost overnight, we had to reduce non-acute surgical interventions and non-acute outpatient care. Inpatient Departments of Gynecology and ENT were rebuilt and set aside for the treatment of covid-positive patients using oxygen therapy. The Department of Anesthesiology and Reanimation then for patients in severe conditions requiring controlled lung ventilation. Within a few days, we set up two worlds in Na Homolce Hospital, operating separately and at the same time in symbiosis. These measures, enforced by the coronavirus pandemic, had a major impact on the scope of care provided throughout 2020. We tried to eliminate stoppages in care caused by the spring wave of the pandemic in the coming months. We made a number of organizational and operational changes in selected departments. In outpatient operations, we extended opening hours, and through a number of consecutive measures, we increased the capacity of operating rooms both on weekdays and on weekends. Despite the dramatic decline in production in the spring months of 2020, I am pleased to say that the original black scenarios from the spring, indicating a major economic downturn in the hospital's management, have fortunately not been confirmed. Finally, 2020 was paradoxically economically the most successful year in the history of Na Homolce Hospital, thus surpassing the previous record year of 2019. Among other things, the positive results of the hospital's management are also the result of the austerity measures, which we set in 2019, when we carried out revisions of existing contracts, we did not extend or terminate the disadvantageous ones. Other significant savings resulted from successful competitions and tenders, we managed to secure advantageous bonus contracts, etc. Thanks to a very good economic result, we were able to secure a financial reserve that will allow us to continue with planned investments and projects. Despite the difficult conditions, we continued to work on the hospital's development projects in the total amount of approximately CZK 2 billion. These are projects such as energy saving measures, utilisation of the capacity of parking spaces, reconstruction of the catering operation, reconstruction of elevators, consolidation of outpatient clinics, reconstruction of Endoscopic Center and gastroenterology, reconstruction of the Department of General Surgery, etc. Expensive extensions are also being prepared from the east and west sides of the building in order to increase capacity, especially in the hospital's core specializations. At the same time, a very demanding implementation of the new hospital information system and other projects in the field of ICT is in progress.

Our hospital achieved a record net profit of CZK 595 million with total revenues of CZK 4,5 billion. In 2020, almost CZK 150 million was invested in the hospital's assets. Among the most significant investments I would mention a new angiography unit for the multifunctional catheterization department, electromagnetic 3D mapping system for the Department of Cardiology, new hemodynamic monitors for clinical monitoring of patients, construction of a new telephone exchange or acquisition of a diagnostic fluorographic X-ray system and more. In 2021, we anticipate investments in medical technologies, various development programs and reconstructions in excess of CZK 400 million.

A new stage of hospital development is awaiting us, which will improve the facilities for patients and healthcare professionals. The path to the hospital development leads exclusively through economic prosperity, so it is always necessary to develop maximum effort to ensure the efficiency of all our activities and good management in general.
On behalf of the entire management, I would like to thank all hospital employees for their cooperation and maximum work commitment during the demanding period of 2020.

Petr Polouček, MD, MBA

HOSPITAL MANAGEMENT

Petr Polouček, MD, MBA
Director of the Hospital

Zbyněk Fuksa, MD
Deputy Director for Treatment
and Preventive Care until 05/04/2020

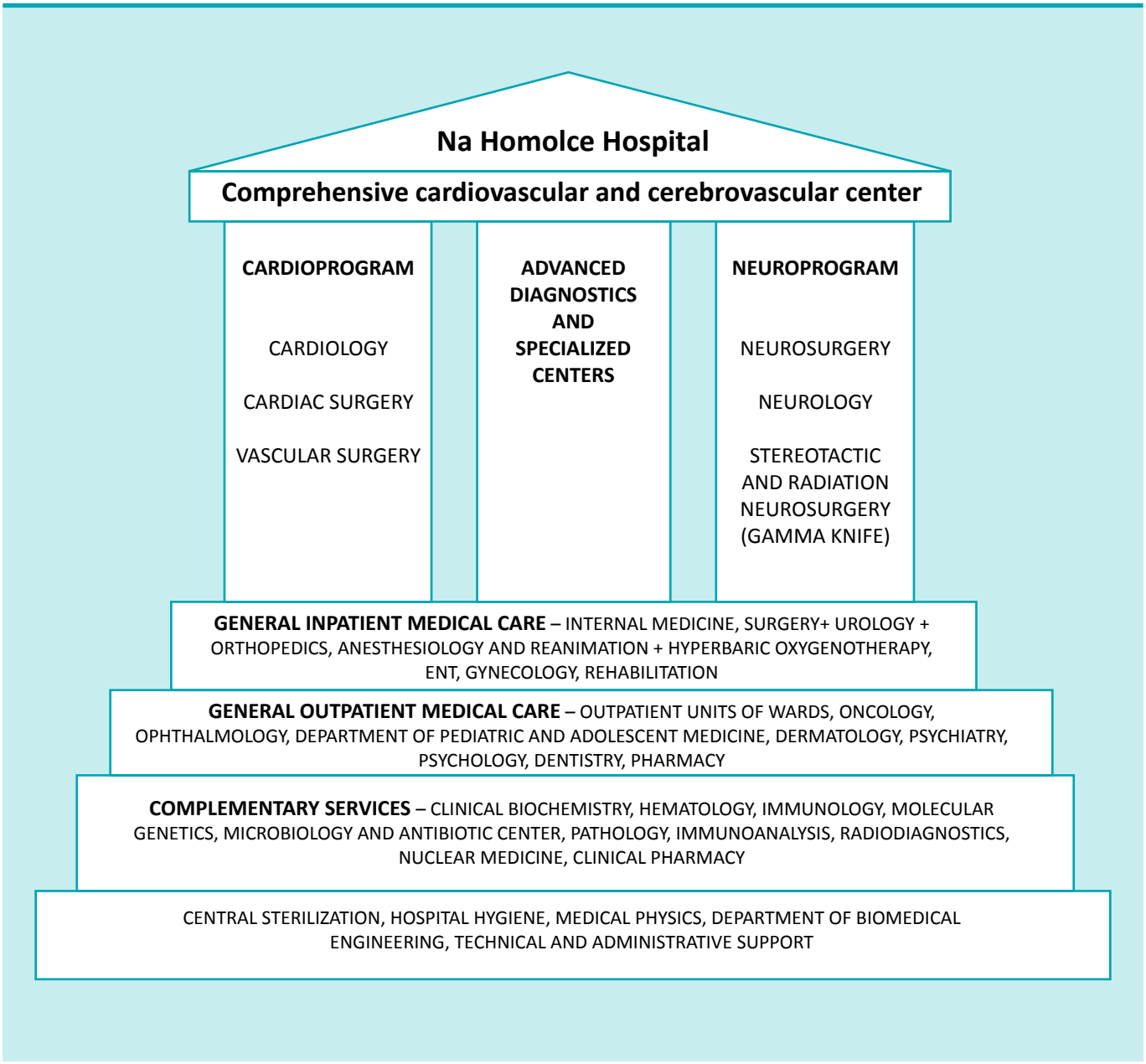
Vladimír Mikulenka, MD, MBA
Deputy Director for Treatment
and Preventive Care from 06/04/2020

Mgr. Viktor Szabó, MBA
Deputy Director for Economic
and Technical Administration

Ing. Dušan Chvojka, MBA
Deputy for Information
and Communication Technologies

Mgr. Ivana Kirchnerová
Deputy Director for Nursing Care

Assoc. Otakar Bělohlávek, MD, Ph.D.
Deputy Director for Science
and Research


Na Homolce Hospital
Comprehensive cardiovascular and cerebrovascular center
CARDIOPROGRAM
CARDIOLOGY
CARDIAC SURGERY
VASCULAR SURGERY
ADVANCED DIAGNOSTICS AND SPECIALIZED CENTERS
NEUROPROGRAM
NEUROSURGERY
NEUROLOGY
STEREOTACTIC AND RADIATION NEUROSURGERY (GAMMA KNIFE)
GENERAL INPATIENT MEDICAL CARE – INTERNAL MEDICINE, SURGERY+ UROLOGY + ORTHOPEDICS, ANESTHESIOLOGY AND REANIMATION + HYPERBARIC OXYGENOTHERAPY, ENT, GYNECOLOGY, REHABILITATION
GENERAL OUTPATIENT MEDICAL CARE – OUTPATIENT UNITS OF WARDS, ONCOLOGY, OPHTHALMOLOGY, DEPARTMENT OF PEDIATRIC AND ADOLESCENT MEDICINE, DERMATOLOGY, PSYCHIATRY, PSYCHOLOGY, DENTISTRY, PHARMACY
COMPLEMENTARY SERVICES – CLINICAL BIOCHEMISTRY, HEMATOLOGY, IMMUNOLOGY, MOLECULAR GENETICS, MICROBIOLOGY AND ANTIBIOTIC CENTER, PATHOLOGY, IMMUNOANALYSIS, RADIODIAGNOSTICS, NUCLEAR MEDICINE, CLINICAL PHARMACY
CENTRAL STERILIZATION, HOSPITAL HYGIENE, MEDICAL PHYSICS, DEPARTMENT OF BIOMEDICAL ENGINEERING, TECHNICAL AND ADMINISTRATIVE SUPPORT

Basic data

Number of employees	Number of beds	Number of admissions	Number of surgeries	Number of outpatient interventions
1 768	**357**	**17 333**	**15 277**	**848 380**

Staff and wage data

	Physicians	Pharmacists	General nursing staff	Other auxilliary medical staff with professional competence	Auxiliary medical staff with professional and specialized competence
Total wages paid (in CZK)	354 664 581	12 706 798	465 547 629	89 001 683	36 675 442
Average recalculated number of employees	281,58	16,34	677,67	147,48	57,72
Average salary (in CZK)	111 048	67 930	59 552	53 885	57 044

	Auxiliary medical staff under specialized supervision or direct guidance	Technical and administrative staff	Operators	Total
Total wages paid (in CZK)	90 329 019	158 959 502	44 376 670	**1 301 365 368**
Average recalculated number of employees	205,68	205,68	113,48	**1 767,93**
Average salary (in CZK)	36 598	64 404	32 588	**61 341**

Auxiliary medical staff – medical staff excluding physicians
Technical and administrative staff

OUR ACTIVITIES

NEUROLOGICAL-NEUROSURGICAL PROGRAM

Department of Neurology

Head of Department: Martin Kovář, MD

Activities of the Department

- Emergency diagnostics and treatment of patients with acute ischemic stroke and other urgent cerebral diseases – at the neurological intensive care unit (a key part of the Comprehensive Cerebrovascular Center)
- Diagnostics and treatment of epilepsy both in the outpatient consulting clinic and in the Epilepsy Monitoring Unit (EMU), including a complete epilepsy surgery program
- Inpatient diagnostic-therapeutic care of other neurological patients
- Examination in the Center for Sleep Disorders with two beds for polysomnography and consulting clinic
- Cerebrovascular Consulting Clinic with neurosonology
- Two electromyography laboratories performing, in addition to all methods of electromyography, also somatosensory and motor evoked potentials, all in high annual numbers.
- Specialized examination room for visual and auditory evoked potentials
- Two electroencephalographic examination rooms and a mobile EEG device
- General neurological clinics

Organizational units of the Department

- **Intensive Care Unit** with 12 beds is a central part of the **Center of Specialized Cerebrovascular Care** (formerly a Comprehensive Cerebrovascular Center).
- **Inpatient ward**: Unit with standard beds. It is followed up by the Epilepsy Monitoring Unit (EMU), which is together with a consulting center a basic part of **the Center for Epilepsy Treatment** with the status of a highly specialized care center. The center is one of three such centers in the Czech Republic. The inpatient ward of the Department of Neurology also includes a fully accredited **Center for Sleep Disorders** with a sleep laboratory for sleep monitoring by polygraph recording, with two monitored beds, for indications of correction ENT operations, and especially supportive aids (CPAP, BiPAP) helping patients with sleep apnea syndrome.
- **Outpatient Department**: The outpatient section includes an extrapyramidal consulting unit, an outpatient unit focused on neuroimmunological diseases of the central nervous system, in particular multiple sclerosis, cerebrovascular consulting clinic, epilepsy outpatient unit, sleep outpatient unit and an outpatient unit for patients with neuromuscular diseases.

Basic data

Number of physicians	22 (18 FTEs)
Number of nursing staff	47
Number of administrative staff	2
Number of standard beds	21
Number of ICU beds	12
Number of EMU beds	4
Number of sleep laboratory beds	2
Average treatment period (in days)	4,3
Number of admissions	1,653
Number of outpatient examinations in total	22,050 (in 9,295 patients)

Performance overview

Admissions

The year 2020 was affected by the COVID-19 pandemic. The number of admissions decreased slightly, but not the number of patients with cerebrovascular accident (CVA).
In 2020, 502 patients were hospitalised for CVA and transient ischemic attack in the Department of Neurology. At the ICU, we received a total of 557 acute patients from the emergency medical service. Intervention radiologists performed 127 mechanical thrombectomies of closed cerebral arteries (one of the highest numbers in the Czech Republic) and 98 intravenous thrombolyses. Here, we even improved the median of the time from patient arrival to thrombolysis administration for 22 minutes. All patients with mechanical and intravenous recanalization are entered in detail in the national registry ResQ. We make decisions about recanalization in some specific situations with the help of a software tool that evaluates cerebral perfusion on CT.
The Epilepsy Monitoring Unit treated 131 patients per year within typically weekly diagnostic admissions. The relatively lower number was the result of its repeated closure due to a pandemic. Patients underwent a comprehensive diagnostics, in the case of pre-surgical examination, including the use of ictal SPECT in some patients. Several had invasive EEG monitoring – either stereotactically inserted hippocampal electrodes and strips or minimally invasive intracerebral electrodes. The EEG from the electrodes is used to identify an epileptogenic zone that may be a candidate for surgical removal to cure epilepsy. 21 resection epilepsy surgery operations were indicated and performed, and 20 patients were implanted or reimplanted with a vagus nerve stimulator (VNS).
223 patients have been admitted to the Center for Sleep Disorders, well over 100 of them were newly indicated for treatment with a device providing permanent airway overpressure (CPAP or BiPAP). The effectiveness of their treatment can be monitored remotely and the parameters readjusted, while having many hundreds of patients monitored in this way.
Percutaneous cement vertebroplasty of a lumbar or thoracic vertebral fracture was performed in almost one hundred patients during a short hospitalization. It is an effective and minimally invasive method of treating immobilizing pain resulting from a vertebral fracture, especially in osteoporosis.

Outpatient department

The number of outpatient examinations in the pandemic year decreased by only 4%, the number of remote consultations increased. Most patients are examined in specialized outpatient units – epilepsy, sleep, cerebrovascular, neuroimmunological, neuromuscular and extrapyramidal.

Changes / new events in the previous year

- We reaccredited and thus defended the status of the Center for Highly Specialized Cerebrovascular Care and the Center for Highly Specialized Care for Drug-Resistant Epilepsy for the years 2021–2025.
- We received the Platinum Award under the auspices of the European Stroke Organization in recognition of the quality and speed of care for patients with acute stroke.
- In 2020, we again treated a record number of patients with stroke using mechanical thrombectomy, mostly from Prague hospitals. We did not limit the care of patients with acute stroke in no way during the COVID-19 pandemic.
- This year, the Department of Neurology began caring for the majority of patients before and after implantation of deep brain stimulation (DBS). These are mainly patients with advanced Parkinson's disease and dystonia, and the procedure itself is performed stereotactically at the Department of Stereotactic and Radiation Neurosurgery.
- Two physicians of the Department passed the postgraduate certificate examination and thus acquired specialized competence in neurology.

- During the sanitary closure of the neurological ICU for 11 days in the summer of 2020, our physicians continued to admit, diagnose and treat patients with acute strokes in collaboration with the Departments of Vascular Surgery, Anesthesiology and Reanimation, and Neurosurgery, so that the commitment towards the Health Rescue Services of the City of Prague and Central Bohemia and the patients with brain stroke in the catchment area of the Department was fulfilled.
- At the end of the year, we switched to a new hospital information system in outpatient operations, which we tested and helped adjust as the first department in the hospital.

Perspectives for the next year

The main task is to maintain a high standard of care even with a large number of treated patients – both the inpatients and outpatients. The Department of Neurology is involved in the care of patients with COVID-19, the question is how the ongoing pandemic will affect the care of neurological patients. A lasting high number of patients with acute ictus as the result of mechanical thrombectomy and thrombolysis and in the treatment of patients with other cerebrovascular diseases is expected. We will research the indication of recanalization of the cerebral artery occlusion of borderline patients with more extensive or long-lasting ischemic damage.
Several studies (TENSION, CHIP, PROOF) are in the process of approving or approved, we also cooperate with the Department of Cardiology in the program of diagnosis of unclear disorders of consciousness, in the examination and prognosis of patients after cardiopulmonary resuscitation and in non-pharmacological treatment of atrial fibrillation.

Educational and other specialized activities

- **Lectures, educational activities**: Lectures held at the Institute of Postgraduate Studies in Health Care, managing study visits in the field of neurointensive care (Vondráčková, MD, Panský, MD), participation in national webinars, teaching at the 1st and 3rd Faculties of Medicine, Charles University (Assoc. Vojtěch), conducting study visits in epileptology and electroencephalography (Assoc. Vojtěch), electromyographic study visits (Jerie, MD), neurological study visits for physicians in other fields as part of pre-certification training
- **Grant investigators and co-investigators**: Health Research Agencies of the Czech Republic (Head of Department Kovář) and internal grants (Head of Department. Kovář, Assoc. Vojtěch, Jaroš, MD, Červenka, MD)
- **Sonobirdie ongoing study** – sonolysis in carotid endarterectomy, **PACIFIC study** – drug antithrombotic secondary stroke prevention.
- **Membership of professional associations**: Czech Neurological Society (Head of Department Kovář a member of the cerebrovascular section committee), Czech League Against Epilepsy (Assoc. Vojtěch a member of the committee), European Stroke Organization, Epistop Civic Association

Department of Neurosurgery

Head of Department: Jan Klener, MD

Despite the difficult situation due to the COVID-19 pandemic, 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 2020 in order to provide comprehensive and safe services that improve patients' quality of life. Procedures that did not require acute or subacute care had to be postponed due to the COVID pandemic.

Activities of the Department

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 and, since 2019, SAK accreditation standards as well.
Patient care was traditionally provided in four key areas – as part of the neuro-oncological, neurovascular, functional neurosurgical and spinal programs. In 2020, a total of 2,224 surgeries were performed, 2,464 patients were admitted and 6,939 patients were seen in the outpatient unit.
The Department of Neurosurgery is a superregional, national or even international center for a number of treated diagnoses. Morbidity of planned surgeries ranges at lower values than national data. These are mainly patients with serious diseases which can only be treated in a small number of centers in the Czech Republic. In 2020, 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 the Department 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 on 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 approaches which reduce the burden on patients. Where appropriate, "keyhole" craniotomy and "non-retraction" neurosurgery, minimizing trauma to the brain, are preferred. The Department of Neurosurgery of 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 so-called "awake craniotomy" which means that part of the procedure is performed on a patient who is fully conscious. We continued in the development of endoscopy surgical techniques, especially in surgeries of hypophysis adenomas, and rarely in surgeries of intradural tumors. In addition to its own surgical program, the Department of Neurosurgery also promoted other treatment methods for patients with brain tumors in 2020, for instance in the form of regular interdisciplinary neuro-oncology workshops attended by a multidisciplinary team of specialists from Na Homolce Hospital

and 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 the neurovascular program, the Department of Neurosurgery is part of the Comprehensive Cerebrovascular Center, whose status Na Homolce Hospital acquired in April 2010 and since then it has been regularly renewed.
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 2020, 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-theart 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 2020 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, and 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 the patency of critical vessels and obstruction of pathological vessels after the application of a special fluorescent agent. Procedure safety is also increased by Dopplerometry or a flowmeter, measuring qualitatively or quantitatively blood flow in individual arteries. Monitoring of blood flow allows for a prompt response to hemodynamic changes and prevents a 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 of Na Homolce Hospital is part of the Center for the Treatment of Epilepsy and in cooperation with the Department of Neurology, Leksell Gamma Knife Center, Department of Radiodiagnostics, and PET Center, approximately 30-40 patients are operated on each year.
Resection operations were carried out both by standard microsurgery technique and by stimulation treatment (application of vagal stimulators). During the procedure, patients are examined by intraoperative MRI which provides instant feedback on the extent of the resection, thus increasing the safety and efficiency of surgical procedures.
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 Reanimation.

Spinal Surgery Program

The Department of Neurosurgery at 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. Pref-

erence is given to a 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. A minimally invasive character is also preferred 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. Since 2019, we have expanded our surgery portfolio to encompass an endoscopic approach, which allows us to completely minimize the access path and thus reduce the morbidity of intervention. The range of spinal tumor operations included in 2020 all types of lesions, including intradural, extradural, intramedullary and extramedullary tumors.

Operational data

Total number of beds	65
Number of standard beds	45
Number of intensive beds	8
Number of intermediate beds	12
Number of physicians	18
Number of general nursing staff	88
Number of outpatient interventions	6,939
Number of admissions	2,165
Bed occupancy rate (in %)	75
Average treatment period (in days)	7.0

Breakdown of interventions

Cerebral tumors	254
Vascular diseases	201
Functional procedures	58
Spinal diseases, including tumors	1,381
Craniocerebral injuries	102
Other	228
Total	2,224

Educational, research and other specialized activities

- The Department of Neurosurgery of Na Homolce Hospital is a training center for physicians preparing for postgraduate examinations in neurosurgery, both in cranial neurosurgery and in spine surgery.
- In 2020, neurosurgeons of Na Homolce Hospital were involved in postgraduate training of neurologists and surgeons for postgraduate certificate and organized study visits in neurosurgery for Czech and foreign physicians.
- In 2020, 5 internal grant projects were carried out in the Department of Neurosurgery. Furthermore, in cooperation with the Czechoslovak Academy of Sciences, research into glial cancer diseases is being carried out within the framework of the Grant Agency of the Czech Republic. Physicians are actively participating in webinars of both international and national congresses, this year with a limited number of contributions due to the pandemic. 3 important works were published in impacted journals.

Department of Stereotactic and Radiation Neurosurgery

Head of Department: Assoc. Petr Liščák, MD, CSc.

Activities of the Department

Radiosurgical treatment using the 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

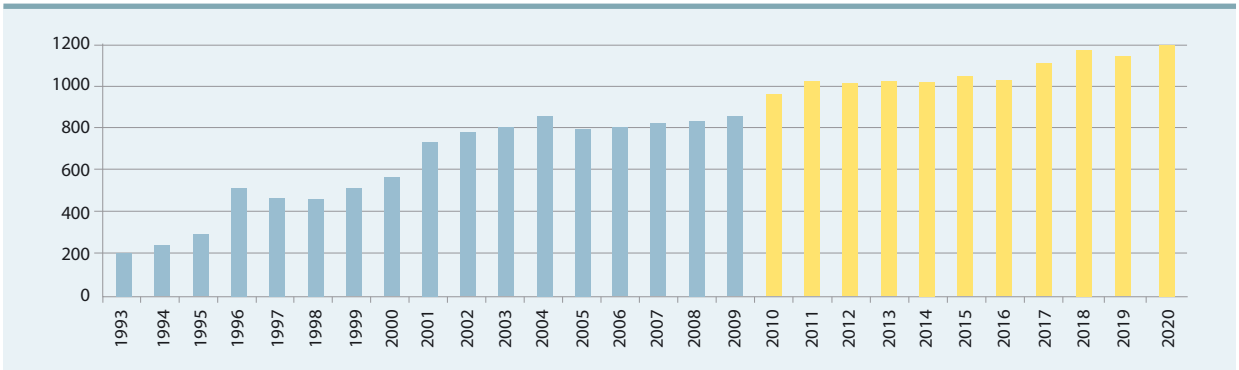
Outpatient clinic: Neurosurgical outpatient unit, neurophysiological outpatient unit, neurological outpatient unit, ophthalmological outpatient unit

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

Operational data

Number of physicians	5 + 2 external ophthalmologists, 2 neurologists, 1 systemized post vacant at present
Number of nursing staff	12 + 1 radiology laboratory assistant
Number of other staff	7 (3 attendants, 4 members of paramedical staff)
Number of beds	8- short stay ward (Monday-Friday)
Number of operations performed using Leksell gamma knife	1,200
– Of which 96 were foreigners (8 %) – Poland 6, Slovakia 89, Ukraine 1	
– Form S 2	86
– Self-payers from EU	9
– Contractual price	1
Number of other operating room surgeries	163
– of which 37 were deep brain stimulation (20 primary implantations, 17 reimplantations)	
Number of admissions	870
Number of outpatient examinations	2,746 patients

Number of patients treated with gamma knife in individual years (yellow after the installation of the Perfexion model)



Changes / new events in the previous year

The year 2020 was significantly affected by the ongoing global pandemic COVID-19. The resulting limitations in our Department manifested themselves in several ways. Firstly, especially during the first wave in spring 2020, we could admit only one patient per room and the number of usable beds fell from 8 to 3. This required organizing as many gamma knife treatments as possible on an outpatient basis, often at the cost of overnight transfers of patients from all corners of the country. The number of admissions was thus significantly lower than in previous years. Secondly, the number of foreign patients fell to 8% due to travel restrictions. Thirdly, the number of interns and visitors in the controlled area decreased significantly, and due to the closure of the borders, international training courses otherwise organized regularly in our Department were completely abolished. Due to their practical focus, their change to online form was not suitable. Despite all the limitations to which our healthcare system as a whole was exposed, for the whole of 2020 we treated 1,200 patients with a gamma knife, which is a record number in the 28-year history of the Department. The number of patients treated hypofractionated with thermomask fixation was 43 (3.6%).
While in 2019 the gamma knife hardware was significantly upgraded from the Perfexion model to Icon, in 2020, an equally significant renewal of the planning software "GammaPlan" and its extension by the module "Lightning" took place. Our Department first participated in the testing of the alpha version of this software, and from August 2020 we started using it clinically as one of the first departments in the world. This planning software not only significantly accelerated the planning process, but also enabled to shorten the irradiation time and improve the treatment parameters.

Perspectives for the next year

- The contract price for patients outside the EU lost its importance and the price of treatment will be unified for all patients, regardless of their nationality.
- If the epidemiological situation calms down, we will continue to organize four-day training courses for foreign participants.
- Despite the exceptional number of patients treated worldwide (1,200 compared to the world average of 300), our Department is loss-making and represents a financial burden for the hospital. It is therefore still important to strive to settle the reimbursement for the treatment so that it corresponds to the real costs
- At the beginning of 2021, a new 3 Tesla MR device will be installed, which will enable to further improve the possibilities of focusing examinations prior to stereotactic treatment.
- The visit of the Prime Minister to Na Homolce Hospital in the spring of 2020 initiated a study on the possibility of expanding radiosurgical treatment in our Department using a new generation Zap-X device. The feasibility of this step will be further investigated.

Educational and other specialized activities

- In 2020, 3 neurosurgeons underwent a study visit in our Department.
- In the course of 2020, the gamma knife was visited by 40 registered visitors in the controlled area.
- Within institutional support, we are carrying out 2 grant projects and one project supported by the AZV agency.
- Publications: 14 articles in impacted journals.

CARDIOVASCULAR PROGRAM

Department of Cardiology

Head of Department: Prof. Petr Neužil, 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 2020.

Multifunctional Catheterization Unit

The year 2020 was fundamentally affected by the global pandemic Covid 19. Nevertheless, thanks to the enthusiasm and professionalism of our healthcare professionals and organizational changes, we managed not to reduce care of cardiac patients with heart rhythm disorders!
The number of catheter ablations remained virtually the same as last year. A total of 1,397 ablations were performed. Currently, so-called comprehensive interventions (ablations of atrial fibrillation, atrial and ventricular tachycardias) account for approximately 80% of all ablations. In most cases of complex ablations, it is ablation of atrial fibrillation. In 2020, a total of 964 procedures were performed for this diagnosis (of which 50% ablations for the paroxysmal form and 50% for persistent or long-term persistent forms of atrial fibrillation). 129 catheter ablations for ventricular tachycardias were performed, of which 60% were ablation of idiopathic ventricular tachycardia, 40% were ablation in structural heart disease. There is a growth in the number of so-called neurocardioablations, the indications of which are cardioinhibitory syncopes, which in the recent past have been addressed primarily by a permanent cardiac pacemaker.
In 2020, we completely renovated one of our three catheterization laboratories. It is now equipped with the state-of-the-art Philips X-ray machine and is ideally technologically prepared for video transmissions and telecommunications.
We perform all complex procedures with the use of the state-of-the-art electroanatomical 3D navigation systems, the use of which significantly increases the efficiency and safety of catheterization ablations while significantly decreasing radiation exposure. We can perform ablations of "simpler" forms of atrial fibrillation using balloon methods (cryoablation and laser ablations), the advantage of which is especially shortening of procedure time while maintaining treatment efficiency.
The Department still uses the Niobe II remote magnetic navigation technology (Stereotaxis) for ablation in indicated cases.
In 2020 clinical research, the Department was involved in developing and validating the effectiveness and efficiency of new mapping and ablation technologies such as:

- pulsed electric field ablation,
- innovative 3D imaging system with the option of short ablation with high-energy applications,
- mapping system to identify potential sources – the so-called electrographic flow map, 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 the Czech Republic and Europe over time. The Department specializes in defibrillator implantation (434 procedures) and cardiac resynchronization therapy (199 procedures). The so-called physiological stimulation from the area of the His bundle or the left Tawar arm is a clear trend in cardial stimulation and device treatment of heart failure. The acute hemodynamic effect of physiological stimulation can be verified invasively by evaluating the pressure/volume curve. The Department continues implantations of the so-called subcutaneous ICDs, there were a total of 22 implants in 2020. Implants are also connected with procedures when stimulative or defibrillating electrodes need to be extracted. The total number of these procedures in 2020 was 65 with the rate of success reaching 99 %.
Since 2012, the Department has been the world-wide recognized development center for implantation of leadless pacemakers. In 2020, 11 new types of Aveir leadless stimulators were successfully implanted in the Leadless II IDE clinical trial. In 2020, the total number of implanted leadless stimulators was 45.

Our electrophysiological laboratory closely cooperates with a syncope and neurology outpatient unit in diagnosing cardiac arrhythmias, non-clarified disorders of consciousness or cryptogenic cerebral strokes. Of these indications, a subcutaneous Reveal LINQ heart rate monitor was implanted in 2020 in a total of 97 patients.
We have long been dealing with non-pharmacological prevention of embolization stroke, one of the options is the cathetrization left atrial appendage occlusion. In 2020, a total of 35 of these procedures were performed. The clinical trial with implantable carotid filters is also continuing.
The experimental laboratory implementation project was carried out in the Institute of Physiology of the 1st Faculty of Medicine, Charles University. Experiments with different types of cardiac support, new ablation technologies and treatment devices have been performed.

Intervention cardiology

In 2020, a total of 2,915 catheterization procedures were performed, of which 2,503 diagnostic coronarographies, compared to 2019, this number represents a decrease of approximately 20%. 739 percutaneous coronary interventions (PCI) were performed, which represents a decrease of 14%, on the contrary, we performed 212 primary PCIs (i.e. PCI for myocardial infarction with ST elevations), which was by 12 procedures more than in 2019. **The program of structural cardiac interventions continued**, including foramen ovale patents closure, defect of the atrial septum, pulmonary vein stenoses and closures of paravalvular leaks; certain unique combined cathetrization procedures for structural cardiac defects were performed. **The total number of catheter closures of the atrial septal defect was 73, this number ranks us first in the Czech Republic The transcatheter aortic valve implantation (TAVI) program also continues, in 2019, a total number of 79 procedures were performed (it was 34 procedures in 2017, 72 procedures in 2018 and 74 in 2019). Compared to 2019, we managed to perform significantly more mitral valve catheterization interventions for mitral valve insufficiency using the Mitraclip clamp, a total of 16 patients were intervened (in 2019 there were 6 patients)**.
This program is highly complex with regard to both the scope of diagnostic preoperative examinations, interventions and postoperative care and the demanding multidisciplinary cooperation. TAVI is successfully performed in analgosedation in a large proportion of patients, allowing for earlier physiotherapy and mobilization and subsequent discharge of these patients.
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 2 more patients in 2020. 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.
As part of the internal grant, we continued coronary interventions using the shockwave system. It is an intracoronary lithotripsy, which is a new and very effective method in patients with markedly calcified coronary arteries. Partial results of further research supported by an internal NHH grant were accepted for presentation at the most important European Congress of Interventional Cardiology EuroPCR in Paris.
The Center was traditionally involved in the preparation of recommended procedures of the Czech Society of Cardiology and numerous professional programs and presentations at professional conferences and meetings in the Czech Republic.

Non-invasive cardiology

In 2020, there was a decrease in the number of procedures and examinations of non-invasive cardiology, cardiology and angiology outpatient clinics due to the epidemiological situation and restrictions on operation in the spring months.
This is especially evident in the number of stress tests.
In 2021, we plan to move cardiology and angiology clinics and parts of non-invasive cardiology to vacant rooms on the first floor. Within the Cardiac Center, we are considering the creation of a Center for Valve Defects.

Multifunctional Catheterization Unit

Ablations – total	1,397
Ablations according to arrhythmias	
Atrial fibrillation	964
paroxysmal	504
persisting	385
long-term persisting	75
re-ablations	276
Atrial flutter	49
Atrial tachycardias	62
Non-selective RFA of AV node	29
Atrioventricular nodal reentry of tachycardia (AVNRT)	117
Wolff-Parkinson-White syndrome (WPW syndrome)	37
Neurocardioablation	10
Ventricular tachycardia	129
structural	42
non-structural	87
ICD (implantable cardioverter defibrillators) – total	434
ICD: primary implantation	259
ICD: exchanges	175
CRTD	199
VVI ICD	62
DDD ICD	151
Subcutaneous ICD	22
Pacemakers – total	644
Pacemakers: primary implantation	419
Pacemakers: replacements	180
Leadless pacemakers	45
Extraction procedures – total	65
Subcutaneous recorder implantation	97
Cathetrization left atrial appendage occlusion	35
Spinal cord stimulation	3

Intervention cardiology

Diagnostic catheterization	2,503
Percutaneous coronary intervention (PCI)	739
Primary PCI (in acute myocardial infarction)	212
Cathetrization occlusion of the defect of the atrial septum (DSS) / foramen ovale patens – PFO	73
Transcatheter aortic valve implantation (TAVI)	79
Percutaneous pulmonary valve implantation (PPVI)	2
Mitral valve catheterization intervention (MitraClip)	16

Non-invasive cardiology

General and angiology outpatient unit	15,364
Stimulation outpatient unit	6,039
Transthoracic echocardiography	8,157
Esophageal echocardiography	988
Outpatient monitoring: Holter ECG + Loop monitor + Omron ECG + BP monitor + ECG card	1,538
ECG stress test (ergometry)	217
Tilt test	81
Outpatient electric cardioversion – total	689

Coronary unit

Acute coronary syndrome	334
Extracorporeal membrane oxygenation (ECMO)	13
Length of hospitalization (median)	2

Operational data

Total number of beds	52
Number of standard beds	30
Number of intermediate beds	4
Number of intensive beds	18
Number of physicians	41
Number of general nursing staff	122
Number of outpatient interventions	40,505
Number of admissions	4,543
Average treatment period (in days)	2,70

Department of Vascular Surgery

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

Activities of the Department

- Comprehensive surgical treatment of diseases of the vascular system, primarily the narrowing or occlusion of blood vessels caused by atherosclerotic changes or dilation (aneurysms) and also injuries of the arteriovenous system except for the coronary arteries, 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 also been performing minimally invasive operations on varicose veins using 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, international training center in the area of robot-assisted vascular surgery
- Outpatient care and follow-up of patients undergoing vascular surgery and patients indicated for conservative treatment

Organizational units of the Department

Outpatient units	6 examination rooms
Reception	1
Standard bed station (B)	17 beds
Standard bed septic station (A)	17 beds
Intermediate care unit	13 beds
Intensive care unit (6th floor)	5 beds
Intensive care unit (2nd floor)	7 beds

There are 2 operating rooms available daily, and in addition, a hybrid multidisciplinary operating room and a robot-assisted operating room are available once a week. An X-ray operating room is also used in cooperation with radiologists for some acute procedures. The Department provides continuous operation for urgent vascular surgery procedures and above-regional service for difficult aorta surgeries.

Operational data

Number of physicians	18
Number of nursing staff	107
Number of auxiliary medical staff	24
Number of paramedic staff – attendants	1
Number of technical and administrative staff	7
Number of standard beds	34
Number ofintermediate beds	13
Number of ICU beds	12
Number of admissions	2,532
Number of admitted patients	1,938

Bed occupancy rate (in %)	68 %
Average treatment period (in days)	7
Number of treatment days	14,630
Mortality (in %)	1.3 %
Number of outpatient examinations / number of examined patients	16,501 / 7,775

Number of interventions

Surgical interventions – total	**1,635**
Thoracic aneurysm – classical	21
Thoracic aneurysm – stent graft	19
Abdominal aneurysm classic – classical	91
Abdominal aneurysm – stent graft	53
Aneurysm of popliteal artery	39
Aortofemoral reconstructions	58
Pelvic reconstructions	26
Extra-anatomic reconstructions	33
Treatment of infections vascular prosthesis	23
Aortic arch branch surgeries – total	138
Of which: Carotids – endarterectomy	127
Glomus tumor	1
Carotid aneurysm	1
Bypass or implantation of carotid/subclavian	9
Bypass from ascending aorta (sternotomy)	1
Femoropopliteal proximal reconstructions	59
Reconstructions of arteries in the groin area	77
Crural reconstructions – total	146
Varicose vein surgeries	372
Of which: Classical	318
Radiofrequency	54
AV shunts	14
Transplantation of vascular allografts	2
Xenografts	9
Hybrid surgeries	33
Robot-assisted vascular surgery	32
Laparoscopy surgeries	5
Thoracicoscopic thoracic sympathectomy	2
Lumbar sympathectomy by laparoscopic method	0
Endoscopic sampling of vena saphena magna	0
Vascular Interventions in collaboration with the Department of Radiodiagnostics	629
Rec. vena cava inf., malignancy 3	3

2020

- Since January 2008, the Department of Vascular Surgery has been managed by Prof. Petr Štádler, MD, Ph.D., who is also a member of the external educational staff of the 1st Faculty of Medicine, Charles University, with which the Department actively cooperates. Since 2015, the Department has participated in the training of students from the 2nd Faculty of Medicine, Charles University, managed by Petr Šedivý, MD, Ph.D.
- In 2020, the surgery was affected by the unfavorable pandemic situation due to covid-19 and there was a partial reduction in the number of surgeries by 15% compared to 2019. The final number of surgeries was not as drastically reduced as expected.
- Comprehensive diagnostics and surgical treatment of diseases of the vascular system are routinely performed, primarily the narrowing or occlusion of blood vessels caused by atherosclerotic changes, and also of injuries to the arteriovenous system except for the coronary arteries, 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 (these procedures have been newly covered by public health insurance since 2018).
- The Department of Vascular Surgery continues to retain its unique position of a world leader in robot-assisted vascular surgery and a national leader in thoracoabdominal aortic surgery. Cooperation continued with the National Institute for Cardiovascular Diseases in Bratislava in the area of the thoracoabdominal aorta. Unfortunately, due to the unfavorable epidemiological situation, no international training in robot-assisted vascular surgery took place this year.
- Another important area vascular surgery deals with is endovascular program. It especially focuses on implanting stent grafts for treating abdominal or thoracic aortic aneurysms. Implantation of stent grafts, perioperative angiography and intraoperative angioplasty are routinely carried out in collaboration with the Department of Radiodiagnostics at Na Homolce Hospital. The created team of vascular surgeons and radiologists (P. Šedivý, MD, Ph.D., K. El Samman, MD, H. Přindišová, MD, A. Šnajdrová, MD), who are actively involved in endovascular procedures, continues successfully. Both vascular surgeons who are members of the endovascular team have the required specialization certification.
- The Department also performs complicated interventions to treat infections of vascular prostheses using vascular allografts, femoral veins or xenografts (a bovine pericardial prosthesis or patches). 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 participates in the program of vascular graft cryopreservation. A number of centers in the Czech Republic take advantage of the Department of Vascular Surgery as a consultancy center for the treatment of a range of serious vascular problems.
- Since 2016 our Department has had a hybrid multidisciplinary operating room available at least once a week, where robot-assisted surgeries, implantations of stent grafts and hybrid procedures are carried out.
- In 2020, CE certification for xenografts was confirmed.
- International congresses, where we regularly presented our results and experience, were fundamentally curtailed. In 2020, there were very few online congresses.
- Prof. Štádler received an award of the American Society for Laparoscopic and Robotic Vascular Surgery Award for his presentation at the online international congress (Paul Alan Wetter Award for Best Multispecialty Scientific Paper). Virtual SLS MIS 2020).
- There were no major changes in personnel.

Outlook for 2021

- The year 2021 will be marked by the continuing pandemic of covid-19, which will have a major impact mainly on the number of planned interventions.
- The Department of Vascular Surgery will also provide comprehensive diagnostics and the complete range of surgical treatment of arterial and venous diseases focused on new trends in 2021. We plan to cooperate with the Department of Cardiac Surgery in addressing vascular conditions falling into both these specializations. Thoracoabdominal aortic surgeries will be further developed. Minimally invasive approaches in operations with a focus on robot-assisted and endovascular surgery will be further developed. Since January 2018, robot-assisted vascular surgeries have been on the official list of procedures and thus it is not necessary to ask for approval for every surgery of this type at the relevant Health Insurance Company.
- We will continue to perform minimally invasive surgery using a 3D laparoscopic tower, in agreement with the Head of the Radiology Department, Prof. Vymazal, the successful cooperation of both departments in the endovascular program will continue. 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 technically and economically highly demanding and the Department still does not have a septic operating room for this purpose. Negotiations with insurance companies will have to be initiated to cover these demanding interventions. The focus of the Department on the latest trends in the field of minimally invasive approaches in arteriovenous surgery is also of great importance.
- A big question mark hangs over the continuation of international training activities in the field of robot-assisted vascular surgery due to the unfavorable epidemiological situation. The same problem will be in the area of providing training in laparoscopic vascular surgery to physicians as part of the Aesculap Academy program.
- Presentation at congresses will continue to be problematic.

Educational and other specialized activities

- The Department is also involved in undergraduate training of students of the Faculty 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 visit to in the Department of Vascular Surgery.
- Head of Department Prof. P. Štádler, MD, Ph.D., is an external teacher and a member of the Board for Postgraduate Certificate in Vascular Surgery at the 1st Faculty of Medicine, Charles University in Prague. He also works as a lecturer in robot-assisted vascular surgery at the European Institute of Telesurgery in Strasbourg and as a lecturer in Intuitive Surgical in the U.S.A. Prof. Štádler also holds the post of the president of subcommittee for robot-assisted vascular surgery MIRA in Los Angeles, U.S.A., 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 a reviewer of the journal Surgical Laparoscopy Endoscopy & Percutaneous Techniques.
- Petr Šedivý, MD, Ph.D., participates in the teaching of medical students of the 2nd Faculty of Medicine, Charles University in Prague.
- Petr Samman, MD, continues his doctoral studies at the 2nd Faculty of Medicine, Charles University in Prague.
- Petr Stehno, MD, continues his doctoral studies at the 2nd Faculty of Medicine, Charles University in Prague.
- The Department is also involved in undergraduate training of students of the 2nd year of the 3rd Faculty of Medicine, Charles University in Prague, in the "general nurse" specialization.
- Training in robot-assisted surgery, vascular surgery and radiofrequency surgery of varicose veins for both domestic and foreign physicians will take place in direct dependence on the epidemiological situation.

Department of Cardiac Surgery

Head of Department: Ivo Skalský, MD, Ph.D., 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 unit	3 examination rooms
Standard bed station	14 beds
Intermediate care unit	10 beds
Unit of postoperative and reanimation care	10 beds

2 classic cardiac surgery operating rooms are available for 5 working days a week. Moreover, surgeries are performed in the hybrid and robot-assisted operating rooms, one day a week at each. One operating room is open 24/7 for urgent procedures.

Operational data

Number of physicians	11
Number of perfusionists	7
Number of nursing staff	88
Number of auxiliary medical staff	21
Number of technical and administrative staff	2
Number of standard beds	14
Number of intermediate beds	10
Number of reanimation beds	10
Total number of beds	34
Number of admitted patients	739
Average treatment period (in days)	11.4
Total number of treatment days	8,526

Number of Procedures and Mortality

Total number of surgical procedures	650
Isolated aortocoronary reconstructions	166
Combined procedures (valve, bypass, aorta)	261
Heart valve replacements / plastic surgeries	423
Isolated procedures on ascending aorta and aortic arch	27
Other (myxoma, pericardectomy, PM extraction)	34
Implantation of epicardial stimulation electrodes	1
MAZE surgery (combination with ACB and valve procedures)	128
Operations on the thoracic aorta (combined with other procedures)	116
Robot-assisted interventions	80
Acute and emergency interventions	378
Planned interventions	427
30-day total mortality (%)	0,92 %
30-day mortality in acute interventions (%)	0,77 %
30-day mortality in elective interventions (%)	0,15 %
Number of outpatient interventions(visits)	10,777

Changes / new events in the previous year

- The year 2020 was fundamentally affected by the global pandemic COVID-19. As elsewhere, we had to adapt to the situation and significantly reduce the entire operation of our Department. Forced reduction of bed capacity, repeated loss of staff either due to COVID-19 infection or repeated forced quarantines and, last but not least, setting and putting into practice new hygienic-epidemiological measures. In this turbulent time, the surgery repeatedly ranged from luckily only short-term complete interruptions to gradual increases in the number of procedures as per the possibilities of both bed and staff capacity.
- A total of 650 cardiac surgery procedures were performed in 2020. Despite the newly created, difficult situation, we were able to respond flexibly to the need to perform emergent, acute and semi-acute procedures, where time plays a significant role to avoid fatal consequences for the patient due to the postponement of procedures themselves.
- We continue to develop robot-assisted surgery, which has become a common part of the range of the cardiac surgery performed at our Department. A total of 80 procedures were performed, which is slightly more than the previous year. Reconstructions on the mitral valve and myocardial revascularization account for the largest share
- There is a continuing trend of a high number of valve procedures, which accounted for over 60% of all surgeries. They include both isolated procedures on a single valve, and combined with other valves or other interventions.
- The number of combined interventions indicating the complexity of surgical interventions is above 50% of all surgical procedures.
- There was a significant increase in acute and emergency procedures. This fact is caused most by the new situation, which clearly affects the scope and availability of care.

- The total annual mortality of 0.9% is considerably lower compared to the predicted mortality calculated according to Euroscore, an international scoring system, which achieved a value of 6.25% in the previous year. Acute interventions contributed to the total mortality by four fifths.
- In the field of valve surgeries, there is still a trend of performing reconstructive surgery, rather than valve replacement. The long-term share of reconstructive surgeries, especially of mitral valves, in indicated patients is about 80%. Thanks to these results, we have repeatedly ranked as the leading cardiac surgery center in the Czech Republic. In this regard, we can emphasize that approximately 90% of mono-procedures on mitral valve were performed using a minimally invasive approach.
- Of the spectrum of interventions performed last year, the surgeries of congenital heart defects should be mentioned again, as they represented approximately 5% of all procedures. This specific program with excellent results which has been systematically run and developed in our Department in cooperation with the Children's Cardiac Center of the Teaching Hospital in Motol, is not only unique in our country, but also in Europe.
- The Department is regularly involved in clinical studies in collaboration with international institutions and our Department of Cardiology. The promising results mean a great perspective, especially for our patients.
- We continue in cooperation with associated workplaces for whose patients we offer a top cardiac surgery background both for elective and acute interventions. In particular, they include hospitals in Karlovy Vary, Liberec, Příbram, Kladno, Benešov, Hořovice.
- Intra-hospital interdisciplinary cooperation, especially with the Departments of Cardiology and Vascular Surgery, continued to our high satisfaction also last year and we believe this trend will be maintained in the future as well.

Perspectives for development in the next year

- First of all, a wish to return to the operational state as before the pandemic.
- The aim will be to increase the number of surgeries to the original numbers, i.e. 800 surgeries per year. Although it is unfortunately clear that in 2021 it will not happen due to the global situation.
- The range of procedures will be similar to the previous year.
- We will further develop four systematic programs which form our foundation stones. They are: the treatment program for aortic diseases (cooperation with Vascular Surgery and Radiology), the program for surgical treatment of valve disorders, the program for congenital heart defect treatment in adulthood (cooperation with the Children's Cardiac Center of the Teaching Hospital in Motol) and robot-assisted surgery.
- In the field of minimally invasive procedures, we would like to remain a leading center in the Czech Republic.

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 intensive care for the cardiac surgery postoperative 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, anesthesia for electrical cardioversions.

Intensive care

In the field of intensive care, the Department is responsible for running the cardiac surgery postoperative unit and also closely cooperates 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 physicians of the Department of Cardiac Anesthesiology were the first to introduce extracorporeal pulmonary support (the Novalung artificial lung) in the Czech Republic in a patient with a severe pulmonary failure that could not be managed by standard methods. As one of few facilities in the Czech Republic, the Department ensures anesthesia in robot-assisted cardiac surgeries and anesthesia for operations on adult patients with congenital heart defects.

Operational data

number of physicians	10
number of nursing staff	9

Administered anesthesia for

cardiac surgery	749
cardiology procedures	666
procedures longer than 2 h	833
procedures longer than 6 hw	187

PROGRAM OF GENERAL MEDICAL CARE

Department of Internal Medicine

Head of Department: Viera Křížová, MD

Activities of the Department

The Department of Internal Medicine provides back-up for the activities of the key disciplines of the hospital (Cardiovascular Program and Neuroprogram), to the inpatient ward and to the Polyclinics, Department of Gastroenterology and Center for Pulmonary Endoscopy. The majority of hospitalised patients are diagnostic admissions from all disciplines of the internal medicine, i.e. gastrointestinal, respiratory, cardiac, diabetic and infectious and autoimmune diseases.
In a number of cases, the Department also treats patients 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. Specific interventions are performed under ultrasound guidance (central catheter introduction, diagnostic/evacuation puncture, etc.).
Last year, the operation of the entire Department of Internal Medicine was marked by a COVID pandemic. The proportion of acute and planned diagnostic or therapeutic interventions has changed.

Intensive Care Unit

The total capacity of the unit is eight beds. On these beds, we provide comprehensive intensive care for often polymorbid patients with primarily internal issues. Due to the lack of beds at the Department of Oncology, we often provide the beds for the patients with complications of the oncology therapy and, last but not least, we also take over patients from surgical fields of Na Homolce Hospital – especially when the patient's surgical issues are solved while the need for the complex nutritional and internal therapy continues. Two beds in the internal ICU are equipped to provide artificial lung ventilation, from the purification methods we have intermittent hemodialysis, which we provide in cooperation with the hemodialysis center B-Braun, s.r.o. Our Intensive Care Unit also provides facilities for monitoring and observation of patients after gastroenterological interventions and after interventions performed at the Center for Pulmonary Endoscopy.

Inpatient unit

The standard inpatient ward provides comprehensive internal medical care both to patients with acute internal diseases referred by the acute internal medicine outpatient unit, and to patients with planned diagnostic and therapeutic treatments. Patients from the internal medicine outpatient units of Na Homolce Hospital, patients with internal issues from other departments of the hospital (including treated oncology and chronic hemodialysis patients with complications), and patients indicated for observation after invasive procedures (gastroenterology, Center for Pulmonary Endoscopy, interventional radiology) are admitted to treatment. Treated oncology patients with complications are admitted because the Department of Oncology has no beds at its disposal.
In general, the Department provides care to a large number of patients from other regions, which is particularly noticeable in the pressure on the acute internal medicine outpatient unit, which is regularly addressed by patients themselves from districts outside Prague. Although the bed occupancy rate percentage is one of the highest in the entire hospital, the inpatient capacity cannot meet the demand. However, the stable average length of hospitalization is mostly the result of long-term parenteral administration of antibiotic treatment and treatment of complicated conditions and therefore cannot be further influenced.

Internal medicine outpatient unit

Physicians of individual specializations work in specialized inpatient wards, closely cooperating and well substitutable both in the outpatient and inpatient wards. In addition to the traditional general internal medicine outpatient unit, care is provided in pulmonary, gastroenterological and metabolic outpatient units (for parenteral and enteral nutrition, diabetes, endocrinology and lipid counselling).

Acute internal medicine outpatient unit

In particular, the Department provides treatment and examinations to patients with acute non-surgical issues who have no special referral for a particular specialised examination. Other activities include outpatient infusion therapy and planned diagnostic and therapeutic interventions offered to cover the needs of the Department of Internal Medicine.
The acute internal medicine outpatient unit is the most fully used outpatient unit in the Department, the average number of treated patients is 560 to 600 per month. In the past year, the total of 6,651 treatments were performed. 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 and extend its areas.

Gastroenterology unit

The Gastroenterology Unit is the showcase of the Department of Internal Medicine. 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 specialised ERCP examination of the 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 to the Department.
During the year, we supplemented the required medical equipment in the several million investment, which ranks us among the departments with the state-of-the-art medical devices.
As part of a long-term plan to expand and improve the spatial arrangement of the Gastroenterology Unit, the project documentation has been completed and construction work will begin in the first half of 2021. This reconstruction will enable to increase the frequency of highly specialized interventions and create facilities for medical staff corresponding to the standards of a top department.

Center for Pulmonary Endoscopy

The Center for Pulmonary Endoscopy and related specialized pulmonary outpatient unit offer comprehensive bronchological diagnostics including autofluorescent bronchoscopy, NBI (Narrow Band Imaging) and endobronchial ultrasonography. The combination of new diagnostic methods with the existing methods, such as PET-CT, provides for an exceptional opportunity for early diagnostics 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 active cooperation with the Center for Intersticial Pulmonary Processes, other field pneumologists and other hospitals.

Educational activities

The Department of Internal Medicine is accredited by the Czech Medical Chamber to train and issue functional licenses in internal medicine, gastroenterology, general medicine, abdominal ultrasonography (F008) and endoscopic ultrasonography (F004), endocrinology and diabetology, pneumology and ftiseology. Postgraduate and pre-certification study visits of younger colleagues from other disciplines of

Na Homolce Hospital are annually held in the Department. For a long time, the Department has organised postgraduate courses for physicians preparing for general medicine postgraduate examinations, in cooperation with the Institute of Postgraduate Healthcare Education. To a lesser extent, pre-graduate students of the 1st, 2nd and 3rd Faculties of Medicine, Charles University, come within compulsory practice.

Operational data

Number of physicians	27 main employment + 6 agreement to Full-time employement + 1 contract for work
Number of nursing staff	51
Number of members of paramedical staff	10
Number of standard beds	21
Number of intensive beds	8

Total inpatient unit performance 2020/ comparison with 2019

Average treatment period for the entire Department	6.96 / 6.85
Total number of treatment days	8,053 / 9,263
Admissions	1,136 / 1,353

Department of Clinical Oncology

Senior Physician: Martin Šafanda, MD, Ph.D.

Activities of the Department

The Department of Clinical Oncology focuses on the treatment of malignant tumors in adult patients. The oncology program consists of four 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-oncology 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. Since May 2020, this cooperation has been regulated in the Bulletin of the Czech Ministry of Health, valid until December 2025. Radiation therapy is carried out in the cooperating facility. In the absence of an inpatient ward, acute care, including ICU care, is covered by the Department of Internal Medicine at 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, an annual growth in 5–7 % of cases may also be expected in the future.

Operational data

Number of physicians	3
Number of general nurses	5
Number of newly admitted patients	621
Number of outpatient interventions	16,803
Number of chemotherapy administered	8,818

Department of General Surgery

Head of Department: Ronald Pospíšil, MD

Activities of the Department

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

General surgery program

- Gastrointestinal tract surgery from the esophagus to the rectum, thoracic 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 hernia surgery, appendectomy, cholecystectomy, diaphragmatic hernia surgery, laparoscopic surgery of the small, large intestine, rectum, pancreas and spleen and minimally invasive thoracic surgery)
- Surgical oncology in cooperation with other hospital departments. Each patient with an oncological diagnosis is indicated for surgery by a multidisciplinary workshop in the presence of experts from all cooperating departments within the Center for Comprehensive Oncological Care. In the field of surgical oncology, the Department of General Surgery provides surgical treatment of the gastrointestinal tract encompassing the esophagus – rectum, pancreas, biliary tree, spleen. As part of thoracic surgery, then operations on the lungs, mediastinum, pleura, thoracic wall and breast in its entirety, including examination of the sentinel node
- Extensive outpatient surgical activities for both on-duty and specialised consultancy units
- Minor outpatient interventions
- Robot-assisted surgeries of the rectum and large intestine

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
- Wide range of outpatient orthopedic treatments
- Radiological procedures

Orthopedic program

- Extensive outpatient orthopedic treatment
- Arthroscopy (mainly of knee and shoulder joints)
- Total replacement of hip and knee joints, including reimplantations,
- Modern procedures in bunion surgery and other mini-invasive operations

Organizational units of the Department

Inpatient unit

- Diagnostic, preoperative and postoperative care in all specializations
- Care of patients admitted to intensive and standard beds
- Within surgery urology and orthopedics clinics
- Intensive care unit – A + B units

Outpatient unit

- On-duty outpatient surgery: It provides daily surgical care for acute patients, including wound dressing changes in patients from other departments of the hospital. It also provides acute 24-hour surgical care.
- Specialization surgical clinics: Consulting center for diseases of the esophagus and diaphragm, including reflux disease of the esophagus and diaphragmatic hernias, consulting center for diseases of the pancreas and biliary trees, coloproctology consulting center, consulting center for surgical oncology, hernia consulting center. The Department performs diagnostics, assessment and ordering of planned operations, postoperative monitoring, follow-up health care.
- Thoracic surgical consulting clinic: In cooperation with the respiratory consulting clinic and oncology clinic, it provides assessment and ordering of thoracic operations of the lungs, pleura and mediastinum, postoperative monitoring and follow-up continuing care in patients with respiratory and thoracic diseases.
- Mammology consulting clinic: Provides examinations, comprehensive care, diagnostic services, preoperative evaluation and follow-up care to patients with breast disease, in close cooperation with the Department of Radiology, pathologists and oncologists.
- Orthopedic outpatient unit: Provides diagnostics, treatment and preoperative assessment of orthopedic patients with musculoskeletal diseases. Also provides consultancy services to other departments of the hospital.
- Urology outpatient unit: Provides care to urological patients, performs diagnostics, including ultrasound and outpatient treatment. The Department also provides preoperative assessment, postoperative monitoring, and comprehensive diagnostics and treatment of erectile dysfunction and a number of outpatient diagnostic and therapeutic procedures (cystoscopy, urethra probing for other departments, etc.).
- Outpatient unit for minor surgical procedures: Performs minor outpatient surgical procedures under local anesthesia at the request of general practitioners and physicians of the hospital's Department of Dermatology, and on patients from the surgical consulting clinics and on-duty surgery.

Operating rooms

- One operating room for orthopedic surgery and aseptic surgery
- One operating room for open and laparoscopic surgery
- Robotic operating room with Da Vinci Surgical System, available 3 times a week
- OR for urologic surgery

Operational data

Total number of physicians	23
Number of surgeons	15
Number of urologists	4
Number of orthopedists	4
Total number of non-medical technicians	77
Total number of beds	34
Number of standard beds	25
Number of ICU beds	9
Average treatment period (in days)	4,1
The duration of treatment	9,085
Number of admitted patients	2,267

Number of interventions

Surgery	1,429
Urology	518
Orthopedics	384
Minor surgical procedures	548
Total	**2,878**

Number of robot-assisted surgeries

Surgery	23
Urology	197
Total	**220**

Number of outpatient interventions

Surgery	19,502
Orthopedics	10,546
Urology	7,786
Total	**37,834**

Number of consultancy examinations

Surgery	1,027
Orthopedics	91
Urology	232
Total	**1,350**

Changes / new events in the previous year

- **Technical equipment**: The laparoscopic and surgical instruments have been partially replaced. Printers and computer monitors have been replaced with new ones at the Department. Wireless central non-invasive patient monitoring was set up at the Department – a total of 6 beds. New devices for urological surgery were purchased.
- The emergency condition of operating lights in the urological operating room on the 7th floor was solved
- **Surgery**: A multidisciplinary approach has been standardized (surgery, oncology, radiodiagnostics, pathology) in patients with malign alimentary tract and thoracic organs diseases. The volume of operated patients with a malignant diagnosis has significantly increased. The number of laparoscopic interventions has increased compared to the traditional method, particularly in coloproctology. Robot-assisted surgery for distal colon and rectal tumors has been introduced. The Department has introduced new approaches in solving incisional hernias and diastases of abdominal wall muscles by mini-invasive technique and wound healing using V.A.C. (Vacuum-Assisted Closure) system in routine practice, including healing of anastomosis defects by ENDO SPOUCHE method. We routinely performed operations on anal prolapse and hemorrhoids according to Long (PPH system).
- **Urology**: Endoscopic uretrotomy is used as a routine method, laparoscopic and robot-assisted procedures have been standardized in renal surgeries (pyeloplasty), ureterorenoscopy is used as a routine method. Robot-assisted techniques for prostate surgery are also being improved, and as one of few departments in the Czech Republic, we perform laser surgery for benign prostatic hyperplasia.

Evaluation of clinical activities

- The Department concentrates on the full operation of general surgery, orthopedics and urology, with a focus on elective procedures, and plans the further development of laparoscopic procedures in the abdominal surgery and thoracoscopic procedures in thoracic surgery. Oesophageal, pancreatic and biliary surgeries are performed as a routine method.
- The Department closely cooperates with the Department of Internal Medicine, Departments of Radiodiagnostics, Pathology and Oncology in the care of oncological patients in regular joint workshops.
- 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 management.
- Patient satisfaction was continuously assessed by the Department and the outputs were used for further improvements. An increased emphasis was put on maintaining the hygiene standard from the Department to the operating rooms, the condition has been continuously monitored in cooperation with the microbiological department and the team responsible for infection control. The number of patients with complications and nosocomial infections has not increased.

Perspectives for the next year

- The inpatient department is to undergo an extensive reconstruction or expansion of the inpatient department of standard surgery by 10 beds.
- Due to a significant increase in the number of oncological patients in the Czech Republic, the Department's activities will focus more on the development of the latest surgical procedures using minimally invasive approaches – laparoscopic as well as robot-assisted – within comprehensive therapy for these patients.
- Cooperation with specialists will be extended to include gastroenterologists, pneumologists and endocrinologists in Prague and the Central Bohemian Region.

- In addition, certain physicians will be involved in teaching medical students at the 1st and 2nd Faculty of Medicine, Charles University in Prague.
- The training of physicians will continue in the form of regular educational seminars in the Department.
- The information system of the Department of Surgery will be further developed in coordination with the hospital information system.

Educational and other specialized activities

Educational and teaching activities

- Clinical educational seminars for the physicians regularly take place in the Department.
- The Department organized an undergraduate study visit for medical students (4th and 5th year of study) from the 1st, 2nd and 3rd Faculty of Medicine, Charles University.
- Within postgraduate studies, physicians from other departments of our hospital completed study visits for Postgraduate Certificates.
- We participated in all-hospital seminars and regular common indication seminars together with oncologists, gastroenterologists, pathologists and radiologists.
- The general nursing staff from the Department of Surgery participated actively and passively in a number of training and lectures necessary to improve their professional knowledge and skills. 2 nurses continue their ARIP studies, 2 nurses are studying at the Nursing School, 7 nurses is studying at a higher vocational school, 3 members of paramedical staff are studying a course for attendants.
- We will start lecturing at Czech and foreign congresses in surgery and urology.

Specialized activities and membership of professional associations

Physicians from the Department participated actively in several domestic and international congresses, seminars and workshops.
Our physicians are also members of a number of professional societies, such as:

- The Czech Medical Association of J. E. Purkyně
- The Czech Society of Hepatobiliary Surgery
- The Czech Surgical Society
- The Czech Society for Endoscopy
- The Endoscopic and Minimally Invasive Surgery Section of the Czech Surgical Society
- The Czech Society of Coloproctology
- The Czech Society of Gastroenterology
- The Czech Orthopedic Society
- The Thoracic Surgery Section of the Czech Society for Pneumology
- 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

Department of Gynecology and Minimally Invasive Therapy

Head of Department: Petr Popelka, MD

The activities of the Department in 2020 were significantly affected by the COVID 19 pandemic. The premises of the inpatient ward were set aside for a period of 4 months in favor of the COVID – OXY Unit with 12 beds. The remaining activity of the Department focused on the diagnostics and surgical treatment of gynecological diseases, with emphasis on minimally invasive approaches. The complete range of pelvic surgery concentrated on three main clinical programs in 2020: urogynecological program, comprehensive treatment of endometriosis, and general gynecological surgery, including oncology. The Department has a specialized center for each program.

Urogynecological program covers diagnostics, surgical and conservative treatment of incontinence and pelvic floor disorders. In total, 170 female patients with the above problems were operated on of which 18 interventions were performed with the use of implants.

Program for comprehensive diagnostics and endometriosis surgery offers comprehensive treatment to patients from the whole Czech Republic, including radical laparoscopic surgery and subsequent hormonal therapy with final verification of the outcome. The Department of Gynecology of Na Homolce Hospital is one of the most experienced centers in the Czech Republic in performing radical operations of retroperitoneal endometriosis. In 2020, the Department carried out 65 procedures, of which 8 procedures were radical surgeries for infiltrative retroperitoneal endometriosis.

General gynecological surgery deals with the surgical treatment of sterility, myomatosis, adnexal tumors and cysts, problems with postoperative adhesions, chronic pelvic pain, inflammations and congenital development disorders. Hysteroscopy operations include diagnostic and surgical endoscopy of the uterine cavity. 25 oncological cases were newly detected, of which 20 were operated on.

In 2020, 953 gynecological and 57 COVID positive patients were admitted for treatment to the Department.

The total number of surgical interventions in 2020 amounted to 941 surgeries, of which 93% were performed using minimally invasive methods.

Basic data

Number of beds gynecology	14
– standard	10
– ICU	4
Number of physicians	7
Number of nursing staff	22
Number of outpatient interventions	11,580
Number of admissions	953
Number of treatment days	
Number of interventions	941
Bed occupancy rate (in %)	
Average treatment period (in days)	2.50

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 ear, nose and throat diseases.
The pandemic in 2020 also affected the operation of the Department of ENT. In the spring months, the entire Department of ENT was closed, except for the consulting care of hospitalized patients. In the summer months, the Department's activities resumed, but the autumn wave reduced it again. In both waves, the inpatient part of the Department was assigned to care for patients with COVID disease requiring hospitalization. However, in contrast to the spring emergency situation, the ENT outpatient clinic was maintained in the autumn and the operation of the ENT halls was not completely closed, but only limited to acute surgical procedures. The staff of the Department of ENT cared for patients with Covid-19 disease in both waves. We continue to take care of patients with Covid-19 in cooperation with other departments, the inpatient part of the Department of ENT is reserved for patients with COVID infections who require oxygen therapy. However, at the same time, we also provide outpatient care to ENT patients and perform urgent surgical procedures.

Similarly to previous years, surgical procedures carried out in a limited extent in 2020 covered a whole range of head and neck surgery – surgeries of the nose and paranasal cavities (mostly as endoscopic procedures), comprehensive surgery of the thyroid and parathyroid glands, microsurgery of the vocal cords and larynx, cophosurgical interventions (ear surgeries), surgeries 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 Na Homolce Hospital, the Department cooperates with neurologists in the treatment of balance disorders and has at its disposal a unit with state-of-the-art equipment – the Leksell Gamma Knife – for the treatment of auditory nerve tumors. In cooperation with dental surgeons and neurosurgeons, it performs demanding operations on the facial skeleton and skull base. We cooperate inter alia with experts in allergology and immunology, especially when dealing with chronic rhinitis or chronic sinusitis. One of the key areas is treatment of patients with cancer. The Department provides a detailed diagnostics, surgical treatment and follow-up care, in collaboration with oncologists.
The program of temporomandibular joint treatment has further continued. In 2020, the treatment of diseases of the temporomandibular joint was conservative and minimally invasive (arthrocentesis under local anesthesia and arthroscopic surgeries).
Surgical treatment of rhonchopathy and sleep apnea syndrome is also very common, with the use of a radiofrequency method that reduces healing time and postoperative discomfort for patients. We have established very close cooperation with the Center for Sleep Disorders which is part of the Department of Neurology of 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 surgeries, ranging from partial to extensive procedures, including removal of the entire gland and surrounding lymph nodes. It 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 2020, the outpatient unit of the Department of ENT / Head and Neck Surgery provided comprehensive services, including specialised consultancy services in oncology, otoneurology, cophosurgery and otoprosthetics, outpatient unit for treatment of rhonchopathy, outpatient unit for corrective head and neck surgery, phoniatry outpatient unit, joint outpatient unit (temporomandibular joint), and a specialised outpatient unit for the treatment of salivary glands using endoscopic techniques for diagnostics of salivary gland ducts (sialoendoscopy).
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 outpatient unit of the Department of Pediatrics. The Department continues to successfully develop an aesthetic program of corrective surgery of the head and neck which primarily includes procedures on auricles, eyelids and the external nose, and laser operations.
As a standard, we use an NBI diagnostic method (narrow band imaging) which allows us, both in the outpatient setting and during surgeries under general anesthesia, an earlier and more precise diagnostics of early stages of serious diseases of ENT mucosa, particularly disorders of the vocal cords and larynx.
We continue to carry out evaluation of patients with swallowing disorders, in particular in collaboration with the Department of Neurology of Na Homolce Hospital, using the method of detailed evaluation of swallowing disorders FEES (fibreoptic endoscopic evaluation of swallowing), which has been further developed in cooperation with a clinical speech therapist.
A novelty is the use of a sonograph in our ENT outpatient unit in the diagnosis and monitoring of diseases of the salivary glands, thyroid gland and soft tissues of neck. Needle biopsy of tumors in the soft tissues of the head and neck has also been introduced, which enables faster and especially minimally invasive diagnosis of certain diseases (FNAB/FNAC).
In 2019, we also performed the first several surgical procedures that improve the patency of the Eustachian tube – the so-called balloon Eustachian tuboplasty (BET). This opens entirely new possibilities of treatment of impaired patency of the Eustachian tube, which is the cause of some types of deafness.

Operational data

Number of beds (reserved for COVID OXY)	9
Number of physicians (as at December 31, 2020)	11
Number of general nursing staff	23
Number of outpatient interventions	24,170
Number of consultations	1,191
Number of admissions	915
Number of standard care treatment days	2,137
Bed occupancy rate (in %)	92
Average treatment period for standard care (in days) – ENT patients	2.5

Number of interventions

Surgeries under local anesthesia	1,493
Surgeries under general anesthesia	666
FESS surgeries	128
Thyroid gland surgeries	84
MLS (Microlaryngoscopy)	50

Oncology diagnoses	71
NBI	61
TMJ (temporomandibular joint) surgeries	143

Outlook for 2021

- If restrictions in the coronavirus pandemic allow, we will continue comprehensive ENT diagnosis and therapy. The aim is to further improve the professional standard and quality of the healthcare provided, with a focus on procedures necessitating shorter hospital stays.
- The program of functional corrective surgery and rhonchopathy has an increasing trend.
- We continue to perform the newly introduced examination and surgical techniques – sleep endoscopy (DISE) in patients with sleep apnea syndrome, fine-needle aspiration biopsy in some types of soft tissue diseases of neck (FNAB) using sonography.
- Grant support for research in thyroid gland surgery and grant support for research in the use of navigation in sinus surgery (FESS) continues.
- Within a grant we are currently working in research of the approach to patients with a combination of chronic rhinosinusitis of the odontogenic origin in cooperation with dental surgeons in 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 the preparation of patients for cardiac and vascular surgeries.
- If the epidemiological situation allows, we would like to continue the tradition of organizing a workshop on thyroid disorders, with a focus on operative techniques and thyroid surgery.

Department of Anesthesiology and Reanimation

Head of Department: Zbyněk Fuksa, MD

Activities of the Department

The Department of Anesthesiology and Reanimation (as the name suggests) provides two basic areas of health care:

Anesthesiology provides comprehensive preoperative care, care during surgery and postoperativecare for patients, including general anesthesia and more complex types of local anesthesia administration.

Reanimation deals with complex diagnostics and treatment of patients whose general health condition and vital signs disorders are life-threatening and require the highest standard of health care. The majority of patients are patients with impaired consciousness, blood circulation and breathing, mostly after major surgeries at NHH or patients who have been reanimated by the emergency medical services. The Department has a hyperbaric chamber at its disposal with the possibility of artificial lung ventilation and other special methods of reanimation care.

A specialized **team for acute pain treatment** has been formed within the hospital, which is systematically involved in the monitoring and treatment of acute pain in the inpatients.

Chronic pain outpatient unit then deals with patients suffering chronic pain.

Operational data

Basic data

Number of physicians	27,1 (plan 29,5)
Number of general nursing staff	Anesthesia 24,55 (plan 26,5), Ranimation 31,51 (plan 33,0)
Number of beds	8
Bed occupancy rate (in %)	75,0 %
Average treatment period (in days)	9,03

Organizational units of the Department

1 resuscitation station (8 beds)
2 postoperative units of vascular surgery (12 beds)
5 central operating rooms
3 surgical operating rooms
2 gynecological operating rooms
1 operating room for robot-assisted surgery
8 additional operating rooms and workplaces (ENT, Stereotactic and radiation surgery, X-ray, dentistry, ophthalmology, ONM – PET, GASTRO, bronchology)
1 hyperbaric chamber

Performance overview, admissions and outpatient unit

Number of admitted	216 (39 COVID+)
Mortality (in %)	15.74
Total number of anesthesias	9,025
Patients older than 65 years	2,389
Number of anesthesias exceeding 2 hours	3,184
Number of regional anesthesias	676
Hyperbar. oxygenotherapy	206
Number of acute CO poisonings	5
Number of patients in the chronic pain outpatient unit	524

Educational and other specialized activities

Petr Vrba, MD is a member of the senior management of the society for managing chronic pain and has been involved in lecturing and publication activities.
All physicians regularly participated in educational events within the CSARIM, some even in selected events abroad, the nursing staff of the Department attended events abroad organized by the ESPEN several times.
Unfortunately, last year we were forced to limit all extramural activities due to the COVID 19 pandemic. It is also clear from the above figures that the need for epidemiological measures in this pandemic has limited the standard activities not only of our Department but also of the entire hospital.

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 the maximum physical abilities of disabled patients within its basic specialization. Care is provided to inpatients of the Department, to inpatients of other specialized inpatient units and to outpatients.
Care is provided to inpatients of the Department, to inpatients of other specialized inpatient units and to outpatients. It is provided to all patients of the hospital by physicians of the Department 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 rehabilitation physicians, a hydrotherapy room, and rooms for physiotherapy and physical therapy.

Staff (in terms of FTEs)

Physicians	7
Head physiotherapist	1
Physiotherapists	30
Occupational therapists	2
Nursing staff	5
Paramedical staff	2
Masseurs	3
Administrative staff	3

Performance overview

Number of outpatient physician interventions	25,903
Number of other staff interventions	54,978
Number of other inpatient non-medical staff interventions	106,687
Total	187,568
Number of patients admitted to the inpatient unit of the Department of Rehabilitation and Physical Medicine	173

Changes / new events in the previous year

- In cooperation with the Departments of ENT, Surgery and Urology and with external workplaces, the Department continued to implement the following projects:
  1) Treatment of urinary incontinence in women and treatment of urinary incontinence in men after prostatectomy.
     Based on the newly established cooperation with the Departments of Gastroenterology and neuro-disciplines, the stated project was expanded to include proctological issues and issues dealing with neurogenic sphincter disorders.
  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 cord disorders.
- As part of the commercial services offered, yoga exercises were introduced.
- Creation of e-learning training NLZP in rehabilitation nursing.
- There was also a postgraduate education of physicians of the Department, certification in the field.
- Physiotherapy students of various faculties were repeatedly enabled to complete the internship within the Department.
- The physiotherapists of the Department participated to a limited extent in professional seminars and courses.
- A neurostimulator for functional electrical stimulation of the peroneal nerve was acquired from investment funds to expand rehabilitation treatment in patients with central paresis.
- Another passive shoulder motion device was acquired from investment funds to treat a larger number of patients.
- The first part of the hydrotherapy hall, including the rehabilitation pool, was reconstructed.

Development perspectives for 2021

- Interdisciplinary cooperation projects with the Departments of Urology, Gastroenterology and neuro-fields will be further developed. We plan to expand the functional and morphological diagnostics of the locomotor system, incl. pelvic floor muscles using ultrasound examination. The device will also enable the application of ultrasonic myofeedback.
- The joint project of ENT and ORFM rehabilitation treatment of voice disorders will continue.
- In cooperation with the Department of Neurosurgery, rehabilitation treatment of patients with vestibular schwannoma will be introduced.
- Depending on the epidemic situation, we will implement educational events for both physiotherapists, occupational therapists and physicians, incl. scheduled attestations.
- In the second half of 2021, the second phase of the reconstruction of the hydrotherapy hall and the physical therapy premises will take place.

Department of Clinical Pharmacy

Head of Department: Milada Halačová, PharmD, Ph.D.

Activities of the Department

The Department of Clinical Pharmacy was established at 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 of the Department 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 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.

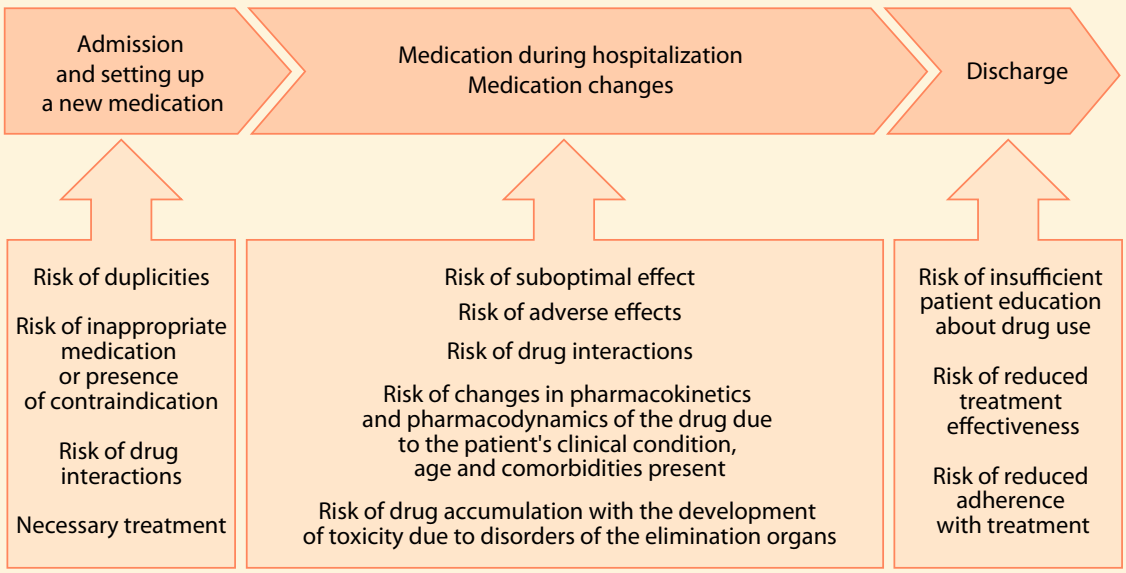
The major areas include (1) the assessment of a newly admitted patient's medications. This is a so-called signal check, i.e. a gross assessment of the patient's medication with respect to indications, contraindications, dosages and chosen route of administration. It reveals any duplication of medication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

The key activity a clinical pharmacist is (2) everyday work in the assigned clinical department and close cooperation with attending 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 patients with various degrees of renal or hepatic damage and dialysed patients. 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 expert 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 drugs and LASA (look alike-sound alike) drugs and is involved in preparing so-called proactive procedures and storage systems to minimise the number of errors in handling these drugs and the impact such errors might have on patients. The Department of Clinical Pharmacy is the creator of the (5) generic positive sheet for the inpatient unit of Na Homolce Hospital.

Since 2012 the Department of Clinical Pharmacy has been involved in the national (6) Senior project implemented by Ústav lékového průvodce, z. ú. (Institute for Medical Drug Guidance). Clinical pharmacists at Na Homolce Hospital perform regular drug audits in social facilities throughout the Czech Republic. The project continues in the activities of outpatient Department of Clinical Pharmacy where, in 2017, we managed to open a clinical pharmacists consulting service for the needs of outpatient physicians and patients with the financial support of the Ministry of Health. In 2020, the Department entered a pilot project with 11 general practitioners in Prague. The goal is to gradually develop clinical pharmacy in the outpatient sector.

Analysis of the operational processes related to the activities of the Department of Clinical Pharmacy



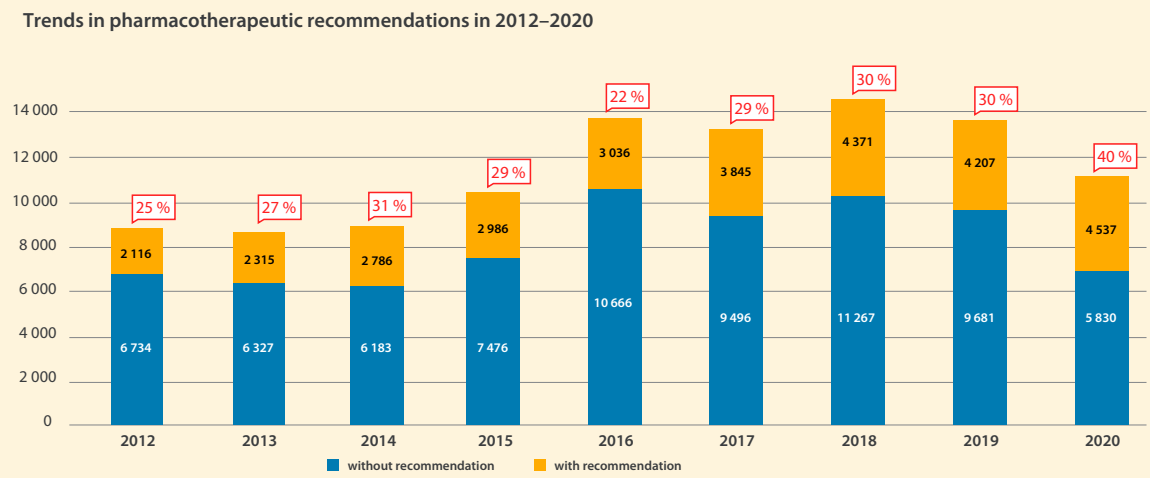
Work records and activities of the Department

The Department provides care to all patients admitted in the hospital. The admission to our hospital represents the first screening point and separates young patients without medication who undergo a short-term, mostly ½–1 day hospital stay, and those who are treated in the Center for Sleep Disorders, who are indicated for Gamma Knife treatment, etc. The remaining approximately 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 a clinical pharmacist's intervention in about 3,000 patients annually (30 %). The highest percentage of interventions includes adjustments of medical drug dosage in the 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.

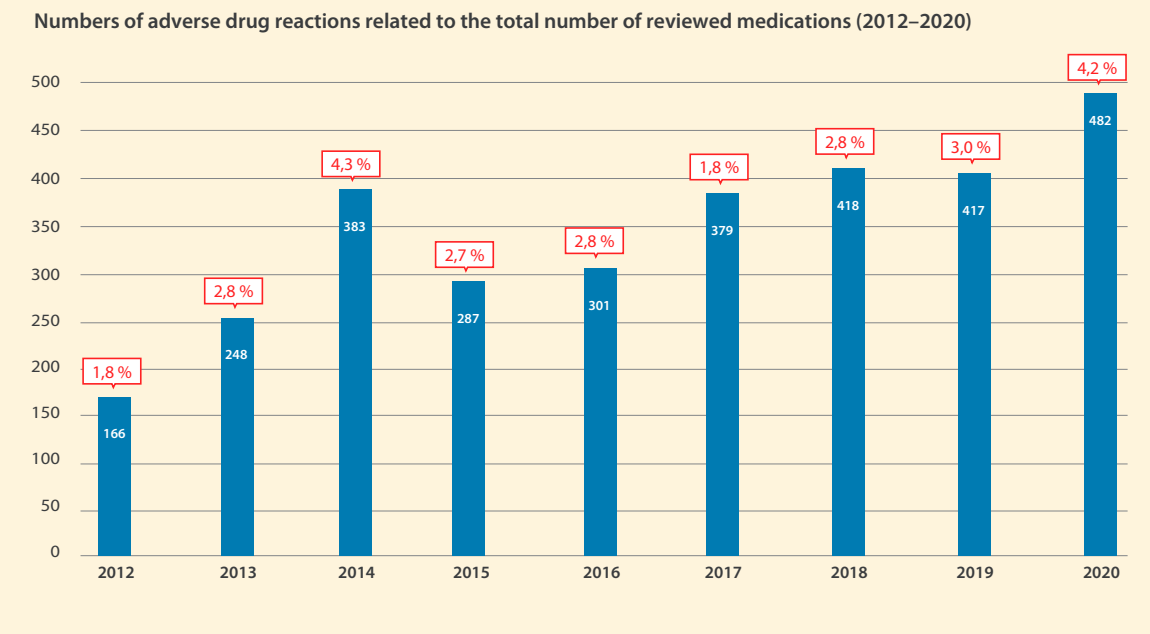
Numbers of inpatients revised by the clinical pharmacist and consultations requested by an outpatient pharmacist in 2020:

Number of revised inpatients	11,327
Number of inpatients referred to by the Department of Clinical Pharmacy	4,517 (40 %)
Number of inpatients with severe adverse effects	482 (4.2 %)

Year-on-year comparison of the number of reviewed medications in Na Homolce Hospital in 2012-2020



Year-on-year detection (2012-2020) of adverse effects expressed as a percentage of the total number of reviewed medications (n=11,327)



Accreditation and specialist activities

- Status of an accredited facility of the Czech Ministry of Health in the field of clinical pharmacy, membership of the Accreditation Commission of the Czech Ministry of Health in the field of clinical pharmacy
- Membership of the Board of the Clinical Pharmacy Section of the Czech Pharmaceutical Society of J. E. Purkyně (chairmanship)

- Membership of the main Board of the Czech Pharmaceutical Society of the Czech Medical Association of J. E. Purkyně
- Educational activities in the field of pharmacology at schools of medicine and pharmacology in Prague and Brno
- Membership of the Scientific Council of the non-profit organization Průvodce pacienta, z. ú.
- Professional guarantor of the national "Senior" pilot project implemented by the non-profit organization Průvodce pacienta, z. ú.
- Close cooperation with the State Health Institute (hospital antibiotic program and infection prevention and control)
- Membership of the Subcommittee on Antibiotic Policy of the Czech Medical Association of JEP)
- Publishing and lecturing in national and transnational professional activities
- Implementation of two grant projects

Staff data

Number of clinical pharmacists	6.0 FTE

Conclusion

A high standard of clinical pharmaceutical care was confirmed by the JCI international audit of the quality and safety of care which Na Homolce Hospital received again in 2017. 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 set-up of the clinical pharmacological care in Na Homolce Hospital, guaranteed by the JCI independent international accreditation, is at present unique in our country. The project was awarded several times in the national competition "A Safe Hospital" (in 2013 it was the winner).

OUTPATIENT UNIT

Center for Allergy and Clinical Immunology

Senior Physician: Assoc. Petr Čáp, MD, Ph.D.

Activities of the Department

- The Center provides therapeutic and preventive specialised outpatient care to adult and pediatric patients with allergic diseases, immunity disorders and recurrent respiratory infections.
- In 2020, the Center for Allergy and Clinical Immunology performed comprehensive diagnostic and treatment procedures, including preventive and consulting care, to both child and adult patients from Na Homolce Hospital with allergies, asthma and other immunopathological conditions (immunodeficiency and autoimmune conditions).

Operational data

Outpatient units: 3 surgeries, 2 prep rooms and 1 functional diagnostics laboratory
Number of physicians: 4 (a total of 3.0 FTE)
Number of nursing staff: 4 (a total of 4.0 FTE)

Outpatient unit

Number of patients	4,186
Number of interventions	6,187
Number of skin tests	20,229
Number of spirometries	4,927
Number of bronchomotor tests	1,143
Number of rhinomanometries	96
Number of allergen-containing vaccine administrations (treatment initiation)	254

Educational and other specialized activities

- **Postgraduate training courses of the Center for Allergy and Clinical Immunology** provided to physicians and nurses in the field of allergy and clinical immunology for which the Department has received an updated and valid official accreditation by the Czech Ministry of Health
- **Undergraduate courses** provided to students of the 2nd Faculty of Medicine, Charles University, in cooperation with the Institute of Immunology at the Motol Teaching Hospital
- **Organization of educational activities** of a national character within the framework of continuous education, + conference of the Czech Society of Allergology and Clinical Immunology – in the conditions of the COVID 19 pandemic, i.e. in a distance way
- **Membership of the editorial board of the newspaper** *Zdravotnické noviny*
- PR and educational activities – radio and television program, newspaper and journal articles
- Membership of professional associations: Czech Society for Allergy and Clinical Immunology of J. E. Purkyně (Assoc. Čáp is also a member of the committee of the professional society), Czech Pneumology and Phthisiology Society J. E. Purkyně (Assoc. Čáp), Czech Society of Internal Medicine of J. E. Purkyně (Assoc. Čáp), European Academy of Allergy and Clinical Immunology (Assoc. Čáp, Ponča´kova, MD, Herknerová, MD), European Respiratory Society (Assoc. Čáp); **active participation in distant webinars, including international ones**, in the field of allergology and clinical immunology

Department of Pediatric and Adolescent Medicine

Senior Physician: Tibor Savel, MD

Activities of the Department

- Therapeutic and preventive care provided to children and adolescents up to 19 years
- Professional care in the field of pediatric neurology, endocrinology, psychology, orthopedics, pneumology, nephrology and speech therapy for children registered at Na Homolce Hospital
- Therapeutic and preventive care provided to foreign nationals
- Consulting services provided to children of foreign nationals

Operational data

- Outpatient unit with 2 offices and 1 room for laboratory sample collection and also for emergency reanimation and possible isolation of infectious patients
- 5 pediatricians (1 full-time pediatrician, 4 part-time pediatricians or pediatricians with work performance agreement)
- 1 non-medical university graduate with 0,8 FTE (clinical speech therapy)
- 6 consulting specialists for work contract
- 3 children's nurses (1 children nurse on maternity leave)

Changes in 2020

In 2020, the institutional emergency service and the consulting service in pediatrics were cancelled. A new pediatrician Michaela Cibulová, MD, was admitted under a work contract. Construction changes enabled us to move the outpatient clinics of pediatric allergology to the place of the abolished pediatric outpatient clinics and thus increase the comfort for patients.

Development perspective for 2021

Economic activity will be carried out within the hospital flat rate and payment per capita for specialization 002. The priority will be to change part-time FTEs of the physicians to 2 full-time FTEs. The goal is to develop maximum effort to maintain a good quality of care and economic results through the registration of new patients.

Department of Dermatology and Venerology

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, H Plus and paying foreign nationals), the staff of embassies in the Czech Republic, the staff of 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 gonorrhea or lues are referred to the follow-up care of general consulting specialists in dermatovenerology.
- The Department performs examinations of suspected skin tumors and in the 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 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, examination of pigment formations by manual and digital dermatoscope, epicutaneous tests.

Operational data

The Department has 1 senior physician (1.0 FTE) and 1 nurse (1.0 FTE).

Development perspectives for 2021

The Department staff are involved in postgraduate training courses and regularly read professional journals. The task of the Department for 2021 is to maintain the quality of the provided therapeutic and preventive care, strengthen epicutaneous testing and increase the range of aesthetic dermatology interventions.

Department of Ophthalmology

Senior Physician: Petr Novák, MD

Activities of the Department

- Outpatient therapeutic and preventive ophthalmological
- 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, eyelid 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 (* in 2020 all of the above modified with respect to COVID-19)

Organizational units 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 (*). Since 11/2019, the Department has been managed by the senior physician and independently working physicians in a total of three surgeries.

Procedures

Number of outpatient interventions	13,482
Number of treated patients in individual outpatient units	4,494
Total number of interventions	1,166
Number of cataract surgerie	1,103
Number of corneal transplantations	28
Number of surgical corrections of astigmatism	35

Staff data

Number of physicians	4
Number of physician FTEs	3.0
Number of general nursing staff	6 (+1 maternity leave)
Number of general nursing staff (FTE)	4.8
Number of auxiliary medical staff	1
Number of auxiliary medical staff (FTE)	1.0
Number of technical staff	1
Number of technical staff (FTE)	1.0

Total number of employees	12
Total number of FTEs	9.8

Changes in 2020

- We further managed to maintain the trend of long-term stabilization of the number of cataract surgeries and the number of transplants, despite the loss of one surgery and one physician position
- Commercial refractive surgeries – lens extraction and implantation of monofocal or multifocal implants – continue to decrease unequivocally. Patients were still interested in the possibility to pay an additional fee for the implantation of an above-standard lens within the "economically more demanding treatment option" (implantation of toric and multifocal lenses within cataract surgery covered by health insurance companies) that was cancelled in 2013.
- Since 11/2019, the capacity of the Department of Ophthalmology has been reduced by one surgery and the number of physicians and nurses has been reduced by one FTE.
- The surgical instrumentarium has been partially replaced, the purchase of the perimetry device has been postponed for the time being.

Educational and other 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 20196, the physicians participated in postgraduate courses both at home and abroad (the Lion´s Club Educational Center, international cataract surgery course) and gave a number of presentations at ophthalmological congresses and specialised ophthalmological workshops.

Development perspective for 2021

- Specialists will be provided information on treatment possibilities in the Department of Ophthalmology, either covered by health insurance companies or provided in the form of commercial care.
- We need to cope with competitive conditions in the medical market within so-called economically more demanding options of healthcare.
- We will raise awareness about procedures performed in the Department of Ophthalmology and strengthen its position among other ophthalmology facilities.
- Further extension of the range and increase of the overall number of commercial intraocular interventions is planned.
- The Department of Ophthalmology has so far complied with the highest standards of surgical treatment of the anterior eye segment; however, it is imperative that medical equipment be gradually replaced.
- Continued cooperation with clinical ophthalmological facilities in Prague will be maintained.
- We will participate in workshops under the auspices of the Department of Ophthalmology, workshops organised by the Association of Nurses, the Lion´s Club Educational Center in the Czech Republic and the Czech Society of Refractive and Cataract Surgery.
- We will also work on the replacement of existing, obsolete technical equipment (a tender is planned to replace a non-functional ultrasound diagnostic device).

Department of Psychiatry

Senior Physician: Jaroslava Skopová, MD

Activities of the Department

The Department provides diagnostic, therapeutic and preventive psychiatric care only to the adult patients of the polyclinic, patients of the department for foreign nationals, patients using other hospital programs, and consulting services in the hospital. It does not have an inpatient ward. The Department cooperates with physicians in all fields, inter alia within the program of comprehensive pain management, it assesses patients with severe forms of obsessive-compulsive disorder at the Department of Stereotactic and Radiation Neurosurgery which is the only facility performing stereotactic neurosurgical procedures with such patients.

Operational data

- 1 outpatient clinic
- 1 physician FTE, 2 physicians with 0.6 and 0.4 FTEs.
- 1 nurse (1.0 FTE)
- Total number of examinations 2,855

Evaluation of clinical activities

With respect to the limited capacity represented only by one psychiatric position, the extent of 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 the care of other departments of psychiatry. The physicians cooperate with other inpatient 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. In some cases, the indicated patients are referred to the psychotherapeutic care.

Membership of professional associations and educational activities

The physicians are members of the Psychiatric Society of J. E. Purkyně, the Czech Society of Neuropsychopharmacology and the Society of Biological Psychiatry. They are also members of the specialization committee of the Scientific Council of the Czech Medical Chamber for psychiatry. Physician with 0.4 FTE Assoc. Zvěřová, MD, Ph.D., works at the Psychiatric Clinic of the 1st Faculty of Medicine, Charles University and the General University Hospital, where she is engaged in pedagogical and scientific work, is a co-researcher of a number of grants, and actively participates in domestic and foreign conferences. In addition, she has passed the postgraduate examinations in child and adolescent psychiatry, is a member of the Section of Child and Adolescent Psychiatry and the chairwoman of the Section of Gerontopsychiatric Czech Psychiatric Society.

Development perspectives for 2021

Na Homolce Hospital is a highly specialised 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 staffing conditions i.e. with only one physician FTE. There is no room for scientific work or teaching, given the staffing and the significant number of patients. Therefore, the aim is to maintain the current high quality of care provided and economic results, while the demands for psychiatric services and increase in the number of patients generally increase.

Department of Clinical Psychology

Head of Department: Assoc. PhDr. Lenka Krámská, Ph.D.

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 target 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 Na Homolce hospital. An outpatient clinical psychologist in the office of consulting physicians provides psychodiagnostic and psychotherapeutic care for outpatient children at the children's department in the office of consultants.

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

Main services

- Neuroprogram – Specialized neuropsychological diagnostics and psychotherapy in patients with neurological diseases (epilepsy surgery program, neurosurgical treatment of tumors, cerebrovascular diseases, cognitive rehabilitation, cooperation with the Department of Neurosurgery, e.g. in awake brain surgeries, cognitive rehabilitation of patients with neurocognitive deficit, cooperation with the Department of Stereotactic and Radiation Neurosurgery in the examination of patients with epilepsy, obsessivecompulsive disorder before and after interventions, etc.)
- 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 bariatria, as well as diabetology, endocrinology, oncology, pneumology and gastroenterology; consultations, psychosomatic consulting center, obesitology
- Crisis intervention in acute responses to unfavourable diagnosis, psychological preparation for demanding procedures, assistance in coping with psychological impacts of diseases (Leksell Gamma Knife, oncology, etc.)
- Pain management consulting center – Psychological examination and subsequent supporting psychological care of 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 a driving license to patients, etc.

Complementary services

- Psychological examination of drivers pursuant to Act No. 361/2000 Coll. performed by a psychologist accredited by the Ministry of Transport, often required by the NHH personnel.
- Psychological examination of applicants for a firearms license.

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 memory 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, obsessivecompulsive 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 Faculty of Arts, Charles University – differential diagnosis and methodology research issues

Operational data

Number of Psychologists

With postgraduate certificate	3
Without postgraduate certificate	2

Number of psychological interventions performed in inpatients

Specific psychological intervention (30 min.)	706
Targeted psychological assessment (60 min.)	635
Follow-up psychological assessment (30 min.)	16
Psychodiagnostics with a complicated psychotherapeutic intervention (90 min.)	6
Crisis intervention (30 min.)	32
Individual psychotherapy	62

Number of outpatient interventions

Individual systemic psychotherapy (30 min.)	700
Comprehensive pediatric psychological assessment (60 min.)	36
Targeted pediatric psychological assessment (60 min.)	122
Comprehensive psychological assessment (60 min.)	4
Follow-up pediatric psychological assessment	36
Targeted psychological assessment (60 min.)	1,226
Follow-up psychological assessment (30 min.)	18

Specific psychological intervention (30 min.)	108
Psychodiagnostics with a complicated psychotherapeutic intervention (90 min.)	101
Crisis intervention (30 min.)	1,667
Psychologist telephone consultation	2

Number of points achieved

Total	2,425,592
Of which outpatient points	1,822,411

However, behind these figures, one must see specific human beings and fates that would, without the psychological intervention, tolerate hospitalization, surgical procedures and other major life events with significantly more difficulties.
In addition to these reported interventions for health insurance companies, it is necessary to state the outpatient examination of 17 clients who were examined for the purpose of traffic psychological assessment of the skills to drive motor vehicles, and to hold and carry a firearm Reimbursements of these procedures were made in cash according to the Decree of the Czech Ministry of Health No. 206/1997 Coll. through the NHH cash office. The total amount was CZK 30,500.

Educational activities and membership of professional associations

- There are specialized study visits as part of the undergraduate study programs organized in the Department (for the Faculty of Arts and Faculty of Education Charles University, Charles University – 10 students), supervision of diploma and master's degree theses, as well as postgraduate study (pre-certification study visits in clinical psychology – a total of 3 pre-certification visiting students, 2 Ph.D. students). In 2020, the training of psychologists in pre-certification training took place at the department; due to government regulations regarding the Covid 19 disease, the training was held only online in the spring and autumn months. Two internal trainees and 5 external trainees from other healthcare facilities are involved in undergraduate preparation at the Department.
- Assoc. PhDr. L. Krámská, Ph.D., develops research and pedagogical activities at the Department of Clinical Psychology and the activities of the Czech Neuropsychological Society which she founded with her colleagues in 2011 and obtained accreditation by the Ministry of Health of the Czech Republic for a certified course in clinical neuropsychology. She is the head of the subject-area board of the postgraduate study program in the field of clinical psychology at the Faculty of Arts, Charles University. She is a long-term member of the the Department of Psychology, Faculty of Arts, Charles University, she lectured at the University of New York in Prague. She is a member of the International Liaison Committee (ILC) in the International Neuropsychological Society (INS) and the Federation of European Societies for Neuropsychology Committee for the Czech Republic. In 2015–2017, she was a member of the Clinical Neuropsychology Task Force of the European Federation of Psychological Societies in Brussels, to represent the Czech Republic. She participates in the translation of neuropsychological batteries NAB and RBANS into the Czech language.
- PhDr. M. Kořán, CSc., is a long-term member of the committee of the Czech Union of Psychological Societies. M. Kořán, PhD, is a lecturer for postgraduate courses on transport psychology at the Faculty of Arts, Palacký University in Olomouc, Masaryk University Brno and Faculty of Arts, Charles University, Prague. He provides lectures at workshops within specialized education in clinical psychology at Na Homolce Hospital. He is a media commenter in the field of transport psychology in the public media. In the spring and autumn of 2020, for epidemiological reasons, two weekly recovery stays for oncology patients were cancelled, which were organized by the self-help organization ARCUS Onkocentrum, which Dr. Kořán was supposed to participate as a psychologist.They were shifted to 2021.

- PhDr. Lenka Chválová joined the Department of Clinical Psychology in September 2017 and actively participated in its activities. She lectures at specialist workshops and conferences.
- PhDr. Lucia Hrešková, Ph.D. is a co-researcher of the project supported by the internal grant of NHH „Diagnosis and treatment of psychogenic non-epileptic seizures (PNES)", under the leadership of the main researcher doc. PhDr. Lenka Krámská, Ph.D. At the same time, she and Assoc. Krámská established active research collaboration with the Northeast Regional Epilepsy Group in New York, USA under the leadership of Lorna Myers, Ph.D. They are preparing a joint symposium within The 32nd International Congress of Psychology. And they published 2 articles together in the impacted magazine „Seizure" and „Epilepsy and Behavior".
- Mgr. Zuzana Dvořáková is involved in the care of outpatients, especially in internal outpatient clinics, she is also completing her doctoral studies (clinical psychology, Faculty of Arts, Charles University), within the study she opposed 2 bachelor's theses, works on the grant project GAUK, is a student of the 4th year of training Integration in Psychotherapy and continues in specialization education in the field of Clinical Psychology at the Institite for Postgraduate Medical Education.
- In 2020, employees of the Department presented a total of 4 posters at international congresses, gave 3 presentations at national conferences, as well as 7 presentations at specialist workshops of the Department of Clinical Psychology. In addition, they published 4 articles in peer-reviewed journals and with an impact factor.

Development perspectives for 2021

As in previous years, the Department will continue to provide high-quality psychodiagnostic and psychotherapeutic care to both inpatients and outpatients at Na Homolce Hospital (where necessary also to hospital employees, which is ever-increasing care due to the coronavirus pandemic)) and to other healthcare facilities. Further, it will continue to participate in training within the postgraduate track (theoretical-practical and practical programs in clinical psychology) and cooperate with the Faculty of Arts and Education School of Charles University and the University of New York in Prague in undergraduate and postgraduate education, to organise study visits within postgraduate education in clinical psychology. We will also continue to implement a specialized educational program in clinical psychology in cooperation with the Accreditation Commission of the Ministry of Health in the further education of postgraduate students. By September 2021, we must prepare documents for the re-accreditation of the Department of Clinical Psychology for the Accreditation Commission of the Ministry of Health. The Department will continue to work on the standardization of neuropsychological methods and procedures for the Na Homolce Hospital neuroprogram (internal grant Diagnostics and treatment of patients with PNES diagnosis – psychogenic non-epileptic seizures) and develop psychotherapeutic care and cognitive rehabilitation in patients with neurocognitive deficits, including collaboration on the development of a psychoeducational handbook for PNES patients. We will continue to develop international cooperation and activities with professional associations and institutions in clinical psychology, health psychology, psychosomatics and neuropsychology.

Dental outpatient unit

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

Operational data

- The above given range of outpatient dental care was provided by one full-time physician and one physician with a contract for work and FTE 0.2 in 2020. The care was provided to outpatients and inpatients of polyclinics, foreign nationals, contractual partners of Na Homolce Hospital, and hospitalised patients.
- In 2020, the Department had two dental offices. One dental office is used by the dentist and a nurse, the other by a physician with reduced working hours without a nurse.
- In 2020, a total of 3,548 patients were examined and treated.

Evaluation of clinical activities

The number of examined and treated patients decreased compared to 2019 due to restrictions caused by COVID-19. However, the number of interventions was still rather high which was achieved particularly due to highly efficient organization of work, immediate phone contact with patients and filling of time slots vacated by absent or late patients and, partially, extension of working hours, i.e. by treating painful conditions before the official working hours. Despite this, better economic results were achieved than in the previous year.

Changes and events in 2020

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, the so-called Maryland bridge and inlay bridge. The number of patient treated with conditionally removable replacements and all-ceramic restorations increased as well. The use of so-called locators has been extended to increase the retention of lower total replacements. Mr. Kolčava, MD, has received the extension of the so-called practical medicine certificate. From January 1, 2019, we completely stopped using undosed amalgam. The changes in the operation concerned the organization of work due to restrictions in connection with COVID-19.

Development perspectives for 2021

A priority in 2021 will be to supplement the part-time FTE of the physician to the full-time also due to considerations about shortening the current FTE of the head physician and accept a dental hygienist. The Department will continue to cooperate with the Department of Dental Surgery in the application of new types of dental bone implants. Vanini's stratification technique will be used more widely in composite treatment. In cooperation with the prosthetic laboratory, the use of the Silensor anti-snoring system will be increased in selected patients, as well as dental guards to prevent bruxism. 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 production of removable replacements made of flexible resin will be increased. The request for a tender for the purchase of a dental set and a tender for a portable turbine will be renewed. Although dental care is a complementary service in the system of Na Homolce Hospital, the Department of Dentistry will make every effort to maintain the comprehensive range and high quality of the services provided as far as possible.

SUMMARY OF ACTIVITIES OF DEPARTMENTS PROVIDING COMPLEMENTARY SERVICES

Department of Radiodiagnostics

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

Activities of the Department

Also in 2020, the Department of Radiodiagnostics provided services both to its own hospital and to other medical facilities, including 24-hour support, even for magnetic resonance imaging. The activities included the whole range of radiodiagnostic examinations, with a special focus on diseases of the nervous, locomotor and cardiovascular systems, as well as on vascular and non-vascular interventions. Diagnostics and interventions continue to be actively developed.
The COVID 19 pandemic reduced the number of interventions by only about 10% compared to 2019.

Vascular methods

Also in 2020, 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, an open neurosurgical procedure – is made during common workshops organised 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 for the treatment of intracranial arteriovenous malformations and malformations in the area of the spinal canal. Onyx was also used for malformations in other locations.

In addition to using intra-arterial thrombolysis, the revascularization treatment of acute ischemic stroke caused by occlusion of some of the main cerebral arteries was carried out by a method involving the mechanical removal of the thrombus using various types of extraction equipment, mostly combining mechanical destruction and evacuation of 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 also be retracted after it is fully uncoiled. This enables the thrombus to be captured after its partial deployment and withdrawn in the stent from the vascular system. 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 reasonably chooses new technologies and materials for its own application.

Non-vascular methods

This area is dominated by CT-guided nerve root injections and vertebroplasty. In this segment of care, our hospital is traditionally one of the most active workplaces in the country and a unique hybrid CT–AG system is reserved for intervention methods. In 2020, epiduroscopies continued to be performed.

Since December 2010, two-source Somatom Flash CT has been used for diagnostic purposes, which

led to a significant advancement in CT diagnostics at that time. 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.

A significant number of CT scans of the heart, including CT coronarography, continue to increase. We are also able to significantly reduce radiation exposure for these examinations thanks to state-of-the-art equipment. The number of examined patients with a congenital heart defect using CT has been increasing. CT perfusion examination of the entire brain was carried out in acute strokes in indicated cases.

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

In 2021, we plan to replace this very busy device with a new CT that will meet all current demanding requirements for this method.

Magnetic resonance imaging (MRI)

For several years now, examination by perioperative magnetic resonance imaging 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. This significantly increases the radical nature of neurosurgery interventions and patient comfort.

On MR devices in the building K, the Department continues to routinely use advanced MRI methods, i.e. MRI spectroscopic examinations, by both SVS and CSI, (both 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, research using these techniques has been conducted with prestigious publication outputs. These examinations have become faster and more precise after the implementation of new software.

In 2020, the BOLD functional examination method was further developed and the methods of quantitative examination, especially of high-grade gliomas, were further developed. Research of brain tumors and quantification of the MR signal continued with the question of prognosis prediction and more accurate diagnostics. Works in prestigious international journals have also been published in this area.

The program of MRI heart examinations is significantly developing, 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. We expect a further increase in the number of patients with congenital and acquired heart disease.

Mammography

The mammography unit of Na Homolce Hospital belongs to a network of accredited clinics and is equipped with a Planmed Nuance Clarity system with direct digitization. Patients with unclear mammography and ultrasound findings are referred for an MRI breast examination in indicated cases, which are also performed in the Department. The second reading of images continues to be a matter of routine.

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. In 2020, the use of the hospital's PACS system was streamlined, including a better connection with the PET Center. Development in this direction will continue in the coming years.

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.
The SOU standards and SOPs of the Department of Radiodiagnostics are available on its website.

Operational data

Technical equipment

- Angiography unit: 1X Artis Q biplane, 1x Siemens Axiom Artis biplane
- CT unit: 1x Siemens Somatom Flash (2x128), 1x Siemens Somatom Definition AS Plus
- MR unit: 1x Magnetom Avanto 1,5 T, 1x Magnetom Symphony 1,5 T, 1x Siemens Skyra 3 T, 1x GE Signa HDx (neurochirurgické sály) 1,5 T
- Ultrasound unit: 3x Toshiba Aplio, 1x GE Logiq 9, 1x GE Logiq E9, 1x Siemens Acuson Juniper
- Mammography: 1x Planmed Nuance Clarity
- Basic equipment: 1 fluoroscopic and 2 fluorographic units, mobile X-ray equipment, orthopantomograph, PACS workstations, scanners, printers, data archives

Basic staff data

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

Specialized intervention and treatment procedures

PTA (with or without stent implantation)	460 PTA, 130 stents
Endovascular treatment of cerebral aneurysms (coils, stents)	20
Recanalization of cerebral arteries in acute stroke	127
PTA/stent of extracranial arteries	25
PTA/stent of intracranial arteries	7
Embolization in neurological area (cerebral, spinal AVM)	2
Tumor embolization	4
Stent grafts	64

CT guided intervention in total	3,057
Of which: targeted CT guided nerve root and facet injections	2,623
CT guided vertebroplasty + kyfoplasty	214
CT guided radiofrequency ablation	9
CT guided biopsies and drainages	211

Overview of selected radiodiagnostic examinations

Computed tomography	13,665
Magnetic resonance imaging	13,477
Angiography	1,934
Ultrasound examinations	12,457
Mammography in total	11,355
Of which screening	9,388
Ultrasound examination within mamma diagnostics	2,273
Breast node biopsy	164
Fluorography, fluoroscopy + dental X-ray	31,660
Total number of radiodiagnostic examinations	90,394

Plans for 2021

- At the beginning of 2021, the oldest MR device Symphony will be replaced by a three-tesla Magnetom Vida device, which will enable further development of modern MRI.
- Our 3 T 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. Furthermore, research activities supported by grant projects will continue, namely accumulation of gadolinium and diffusion in patients with Optune treatment. The area of perfusion examination of brain gliomas and specialized MRI heart examinations will also be developed here.
- We plan to replace the CT, which was installed in 2010.
- 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 has already been gained since 2016.
- The department will actively participate in the planning and implementation of the new NIS and PACS systems for the hospital and interconnection with other workplaces.
- The Department will actively support the hospital's cyber security.

Department of Nuclear Medicine – PET Center

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

Activities of the Department

- PET/CT diagnostics
- Scintigraphic imaging including SPECT

Organizational units of the Department

- Nuclear Medicine outpatient unit
- Radiopharmaceutical laboratory

Basic data

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

Staff (as of December 31)

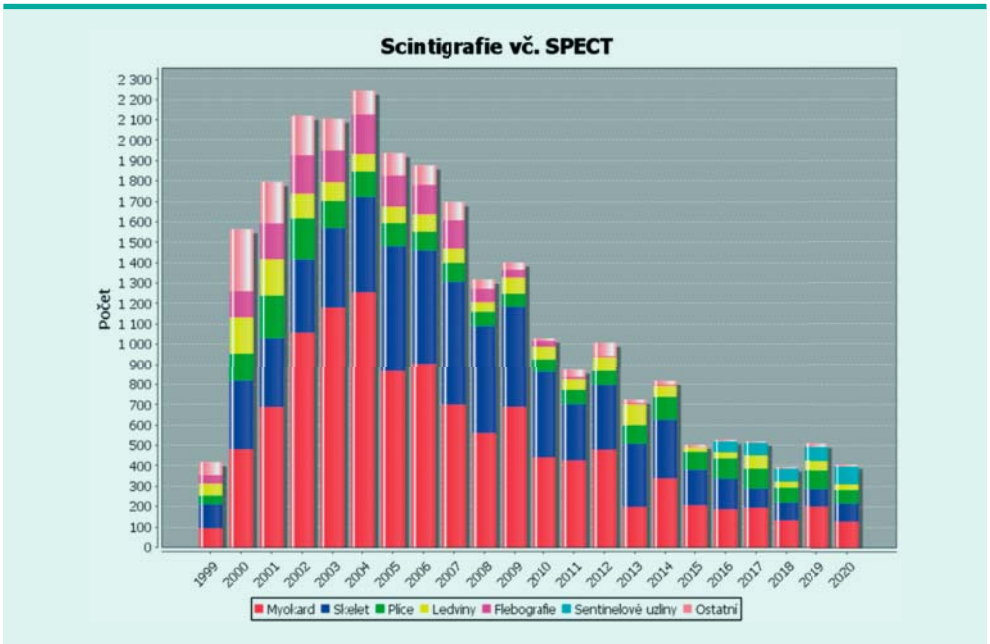
Position	Number of persons	Number of FTEs
Assistant (technical-administrative employee)	2	2.0
Pharmaceutical assistant	1	overtime work of an employee of the Department of Clinical Biochemistry, Hematology and Immunology
Physician	11	9.0
Specialist laboratory technician, preparation of medicines	1	overtime work of an employee of the Department of Clinical Biochemistry, Hematology and Immunology
Radiological assistant	8	8.0
Paramedical staff	1	1.0
General nursing staff	4	4.0

The services of the radiological physicist are provided by the Department of Medical Physics.

Performance overview

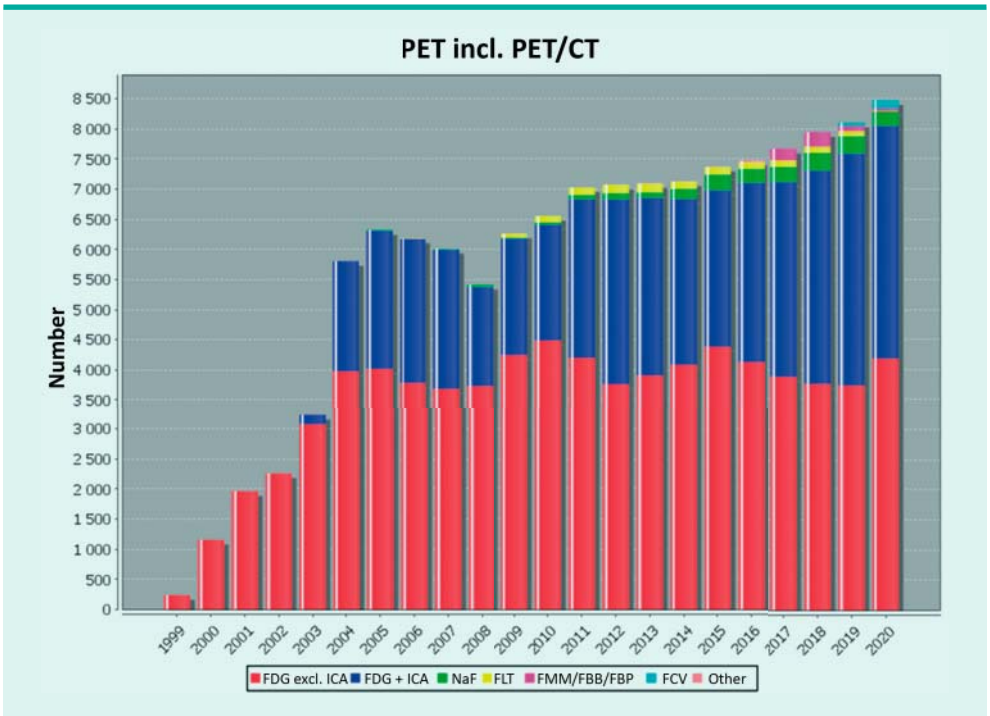
Scintigraphy

Number of examinations: 510 (increase by 29.8% compared to the previous year). All examinations are performed using a dual-detector camera Siemens E. CAM.



Positron emission tomography

Number of examinations: 8,100 (an increase of 2.0 % as compared to the preceding year). All examinations were performed using two hybrid Siemens Biograph PET/CT scanners.



Activity evaluation

- For 2020, the hospital management set a plan to increase production. For this purpose, the tabular capacity of the Department was increased by one physician, one receptionist and one radiological assistant.
- The continuity of the operation was disrupted by two waves of the COVID-19 pandemic, as a result of which the interest in examinations was temporarily reduced by indicating physicians and the increased capacity of the Department could not be fulfilled.
- In PET diagnostics, we still managed to increase the already unusually high labor productivity by almost 5% and again managed to slightly exceed the historical maximum number of examinations from the previous year, of which 8,474 has been performed to date. The number of prostate cancer recurrence examinations with fluciclovin introduced last year increased by 154%.
- Interest in other examinations also declined, apart from the preoperative sentinel node examination. After a temporary revival of scintigraphic diagnostics in 2019, the number of examinations returned to the level of 2018.
- The personnel situation at the Department was stabilized; the leaving of one physician was not only offset by the start of a specialist physician, but the medical positions were expanded in accordance with the plan by another specialist physician. A new employee was hired for an extended position at the reception, who was replaced during the probationary period. We only failed to fill the extended position of radiological assistant. Although the personnel situation was very tense in October, there was no need to reduce operation due to a shortage of staff during the pandemic.
- Last year, we managed to acquire and conclude three general contracts for the supply of radiopharmaceuticals, upon the contracts we acquired and delivered two injectors and a meter for applied activity and dose rate. The share of the items acquired based on the contract was 99.32% of the total financial volume of direct purchases on ONM; a negligible remaining part consisted of price-regulated radiopharmaceuticals that are unique on the market.
- Before the end of the year, a tender was announced for the replacement of an older PET/CT scanner.
- An application was submitted to the Czech Ministry of Health for capacity expansion in terms of the extension and installation of a new PET/MR scanner, which was approved.
- The Department as a whole has a certified system of quality management pursuant to ISO 9001 and a recertification audit was successfully completed in the middle of the year. The Department, as part of the hospital, followed SAK accreditation standards. The recent SÚKL and SÚJB inspections did not find any defects at the Department.

Educational and other specialized activities

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

Development perspectives for 2021

- The plan is to make use of all technologies installed in the Department in the scope defined by the reimbursements received from healthcare insurance companies. In addition to this assignment, examinations for clinical trials will continue. Emphasis will be put on the quality and efficiency of the services provided. Uneven workload of the Department is expected during the year as the waves of the epidemic will come and go, which modify the interest of patients and especially the capacity of indicating departments.

- We plan to reintroduce a radiopharmaceutical (fluorocholine) for prostate cancer imaging due to its better availability.
- We plan to complete a tender for the replacement of the PET/CT scanner and carry out a tender for the supply of technical generators.
- The building is expected to be reconstructed from the beginning of June to the end of August. Initially, waterproofing work will take place outdoors during full operation, and in August we plan to stop the operation completely, during which the water and heating distribution systems in the interior will be replaced and the PET/CT scanner will be replaced.
- We expect design work of the extension for PET/MR and, at the end of the year, we will carry out a preliminary market consultation for the supply of a PET/MR scanner.
- QuaMan® system is to be connected to the new NIS and a new PACS is to be connected.
- A supervisory audit of the Department in accordance with ISO 9001:2015 is planned for the middle of the year.

Department of Clinical Biochemistry, Haematology and Immunology

Head of the Department: Assoc. Miroslav Průcha, MD, Ph.D.

Sections of the Department

Biochemistry
IA Laboratory
Hematology
Blood bank
Immunology
Laboratory of molecular diagnostics

Personnel (as of 31/12/2020)

(including partial FTEs and contracts for work)

Number of physicians	11
Number of university graduates – paramedical staff	11
Number of medical staff	
laboratory technicians	35
nursing staff	8
paramedical staff	7
Number of other staff	5
Total number of employees	77

Activities of the Department

- The Department of Clinical Biochemistry, Hematology and Immunology performs routine and specialized examinations of laboratory parameters within Na Homolce Hospital and for contracted medical facilities in: clinical biochemistry and immunoassay, clinical hematology and blood transfusion service, clinical immunology and allergy, molecular genetic diagnostics and clinical pharmacology (including pharmacokinetic interpretation of measured drug concentrations). Collection of material from contracted healthcare facilities is secured.
- In critically ill patients, examination of selected parameters is performed directly at the bedside (POCT – point of care testing) and CRP examination in the company physician's surgery.
- The blood bank ensures the supply of blood and blood derivatives to hospital clinical departments.
- Due to the epidemic of covid-19 disease, PCR testing commenced in March 2020, later antigen testing and determination of antibodies against Covid-19 in the blood.
- The laboratory participates in clinical research projects.
- Department of Clinical Biochemistry, Hematology and Immunology participates with great success in the control cycles of the External quality assessment program.
- The laboratory obtained accreditation by Český institut pro akreditaci, o. p. s., in accordance with ČSN EN ISO 15189:2013.
- Department of Clinical Biochemistry, Hematology and Immunology physicians and university staff provide advisory and consulting services in the relevant fields
- The Department ensures the activities of the outpatient clinic for disorders of lipid metabolism, hematological outpatient clinic and from 01/03/2020 the outpatient clinic of immunology and allergology.

Changes in 2020

- In 2019, the Na Homolce Hospital Department of Tender Administration announced a tender for a new laboratory information system and new biochemical analyzers based on Department of Clinical Biochemistry, Hematology and Immunology's technical specifications.
- Stapro won the tender for LIS with SW FONS Openlims software. The implementation of the new LIS was initiated in July 2019 and completed with the signing of the acceptance protocol on 12/12/2019. For external physicians who are equipped with the appropriate technology, the secure Internet application Weblims for electronic transmission of results is gradually being launched. An extraordinary audit of the Czech Institute for Accreditation focused on verifying compliance with the requirements of the standard and obligations with respect to the Czech Institute for Accreditation, which result from the change in the LIS, took place on 12/02/2020. The change had an impact on the annex, and therefore new Certificate of Accreditation, No. 102/19920 of 17/02/2020 was issued.
- Siemens, Biovendor distributor, won the tender for biochemical analyzers with the Atellica solution analytical line. Due to the impossibility of connecting a new analytical line to the original LIS –INFOLAB, it was put into operation only after the implementation of LIS-OL Stapro. For technical reasons, the original line was divided into two identical lines, each of which consists of a feeder, a chemical and an immunochemical module. The lines were put into routine operation after technical validation and verification of methods on 22/06/2020.
- ČIA accreditation:
  - In the period from January to December 2020, 6 internal audits out of 8 planned were performed at Department of Clinical Biochemistry, Hematology and Immunology. Two audits were canceled due to staffing limitations during the summer period. Of these audits, no non-conformity cards were issued, recommendations were defined, most were accepted and implemented in practice.
  - In August and September 2020, a regular ČIA supervisory visit took place in the blood bank and immunology sections. The originally planned visit to the Section of Hematology was postponed to November 2021 due to an emergency situation. In the field of immunology, 1 discrepancy was identified during this supervisory visit, consisting in failure to submit verification data for selected immunological methods. Within the legal deadline, the data were supplemented, the audit was closed and new Accreditation Certificate No. 576/2020 of 24/09/2020 was issued.
  - In October 2020, an extraordinary audit was carried out in the section of biochemistry, the aim of which was to assess the transfer of accredited biochemical procedures in specialization 801 to new analytical lines. The audit did not find any discrepancies. New Accreditation Certificate No. 671/2020 dated 04/11/2020 was issued. The date of the next re-accreditation audit remains unchanged and is set on 30/05/2024.
- In 2020, Department of Clinical Biochemistry, Hematology and Immunology laboratories participated in the EHK (External Quality Assessment) program organized by SEKK and Instand. The EHK covers the full range of methods applied for accreditation
  - oIn the first half of 2020, the laboratory participated in the analysis of a total of 555 control samples with an overall success rate of 97.71 %.
  - In the second half of 2020, the laboratory participated in the analysis of a total of 483 control samples with an overall success rate of 98.37 %.
  - Unsuccessful results were addressed.
- Personnel changes in the Department of Clinical Biochemistry, Hematology and Immunology management:
  - There were no changes in 2020.

Biochemistry

- Changes in medical equipment, new methods
  - In January 2020, 7 pieces of glucometers used in NHH departments were returned to Tecom.
  - On 23/06/2020, Beckman Coulter analyzers were returned: DxC 800-A, DxC 800-B, DxC 800-C and UCTA.
  - On 22/06/2020, Siemens's Atellica solution 1 and 2 lines were put into routine operation.
  - On 21/09/2020, a new Advanced OsmoPro osmometer was installed at the statim laboratory
  - On 24/09/2020, a GeneXpert analyzer for the determination of Covid 19 on the principle of PCR was installed at the statim laboratory.

  - Since mid-November 2020, Abbott antigen rapid tests for Covid 19 have been introduced at the statim laboratory.
- Personnel Changes in the Management
  - Without changes.

IA Laboratory
- Changes in Medical Equipment, New Methods
  - The method for the determination of thyroglobulin was converted from the radioisotope version to the immunoanalytical version on the Architect i1000 analyzer.
  - Instrumentation without changes.
- Personnel Changes in the Management
  - Without changes.

Hematology
- Changes in Medical Equipment
  - On 18/09/2020, the operation of the Hematek dyeing machine, Siemens, was terminated.
  - On 18/09/2020, a new Hematek 3000 dyeing machine, Siemens, was put into operation.
  - On 14/12/2020, 2 Alifax BCL sedimentation analyzers were acquired on the basis of a tender and delivered, installation and commissioning in January 2021.
- Personnel Changes in the Management.
  - On 15/01/2020, Andrea Potměšilová replaced Mgr. Karolína Dvořáková in the position of a section laboratory technician.

Immunology
- Changes in Medical Equipment, New Methods
  - 01/09/2020 introduction of ELISA method for the determination of antibodies of SARS-CoV-2 IgA and IgG.
  - 16/11/2020, a method for the determination of antibodies against antistreptolysin O was introduced.
  - 15/10/2020 the method for the examination of anti-GAD and anti-IA2 abolished.
- Personnel Changes in the Management
  - Since 01/03/2020, Assoc. Miroslav Průcha, MD, Ph.D. has been the head physician of the immunology (Lenka Sedláčková, MD, terminated main employment).

Blood bank
- Changes in Medical Equipment
  - 02/03/2020 Autovue Innova Ultra analyzer decommissioned
  - 09/03/2020 Ortho-Vision 2 analyzer put into operation
  - 10/07/2020 freezing box type FB 50l decommissioned
  - 21/12/2020 Calex C-370 cooling box and Emoteca 400 cooling box decommissioned
  - 21/12/2020 BBR 925WXPRO cooling box, manufactured by Evermed, put into operation
- Personnel Changes in the Management
  - Without changes.

Laboratory of Molecular Diagnostics
- Changes in Medical Equipment
  - 02/04/2020 MIC qPCR cycler G87/2020
  - 02/04/2020 MIC qPCR cycler G88/2020
  - 18/09/2020 Zybio EXM3000 G89/2020
  - 22/10/2020 Zybio EXM3000 G90/2020
  - 13/11/2020 Microcentrifuge C2500 G91/2020
  - 14/12/2020 Pipetting robotic station OT-2 G92/2020
- New Methods Introduced:
  - From 24/01/2020 Detection of genetic material of influenza and RSV viruses

  - From 16/03/2020 Detection of genetic material of virus SARS-CoV-2019 (kit Sanghai ZJ Bio – Tech Co)
  - From 19/03/2020 Detection of genetic material of virus SARS-CoV-2 (Vitassay)
  - From 26/03/2020 Detection of genetic material of respiratory viruses (FTD™ Respiratory pathogens 21)
  - From 01/09//2020 Detection of genetic material of SARS-CoV-2 virus by the GeneProof kit
- Personnel Changes in the Management
  - Without changes

Outlook for 2021

- Successfully complete the regular supervisory audit of ČIA in the field of hematology, which was re-scheduled from 2020 to November 2021 for epidemiological reasons
- Introduce full use of software for warehouse management
- Continue fulfilling research projects within research and science support at Na Homolce Hospital
- Expand the diagnostic spectrum of examinations with an emphasis on molecular genetics

Economic results for 2020

Since March 2020, Department of Clinical Biochemistry, Hematology and Immunology's economic results have been affected by the epidemiological situation during the Covid-19 pandemic. Department of Clinical Biochemistry, Hematology and Immunology's point production was met compared to the plan in points for outpatient care at 93%, in points for outpatient care in total – non-VZP domestic patient – at 95%.

	2017	2018	2019	2020
Outpatient department	1,289,192	1,245,430	1,233,129	1,864,141
Sampling point	–	–	–	448,884
Biochemistry	65,857,013	68,306,142	70,008,298	72,611,007
Haematology	20,457,921	20,250,766	21,377,402	20,043,854
Blood bank	4,984,251	4,998,718	6,106,026	8,330,629
Immunology	39,902,995	36,093,256	36,664,333	38,692,073
Immunoassay laboratory	–	–	31,568,064	29,932,009
Laboratory of molecular diagnostics	34,105,350	12,293,450	10,916,981	6,852,105
Total	166,596,722	143,187,762	177,874,233	176,774,702

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 centre 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; Ph.D. training center; participation in the training provided at the Immunology Institute of the 2nd Faculty of Medicine, Charles University.
- **Membership of professional associations**: The Czech Medical Association of J. E. Purkyně, Czech Society of Clinical Biochemistry, Czech Society of Hematology, Czech Society for Blood Transfusion Medicine, Czech Society for Thrombosis and Hemostasis, Czech Society for Atherosclerosis, Czech Society for Allergy and Clinical Immunology, Czech Immunological Society, Czech Pediatric Society, European Atherosclerotic Society, Immunocompromised Host Society, Society for Study of Inborn Errors of Metabolism, American Association of Clinical Chemistry, International Federation of Clinical Chemistry, International Society for Newborn Screening, European Society for Newborn Screening.
- **Membership of editorial boards of professional journals**: Klinická biochemie a metabolismus (Prof. Hyánek), Transfuze a hematologie dnes (Pagáčová, MD).

Department of Clinical Microbiology and Antibiotic Center

Head of Department: Jan Kubele, MD

(From 01/01/2020 to 07/31/2020, Assoc. Miroslav Průcha, MD, Ph.D. was entrusted with the management)

Clients

- Na Homolce Hospital
- External clients

Number of external healthcare facilities and surgeries

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Number of facilities	132	107	101	103	95	97	89	76	77	74	55	**64**

Laboratory diagnostics

Requests for microbiology examinations for Na Homolce Hospital

Year	Bacteriology	Serology	Genetic testing (extrahuman genome, COVID)	Smears from the environment	Total
2009	58,770	10,884	87	NA	69,741
2010	55,507	10,507	139	NA	66,153
2011	55,648	11,835	105	NA	67,586
2012	68,246	13,973	174	NA	82,393
2013	71,966	14,169	130	NA	86,265
2014	57,130	11,474	117	NA	68,721
2015	55,921	10,949	163	NA	67,033
2016	57,478	10,368	227	NA	68,070
2017	59,250	10,754	260	1,912	72,176
2018	59,358	13,031	273	2,586	75,248
2019	58,185	11,608	378	2,254	72,245
2020	**50,823**	**10,885**	**13,720**	**1,947**	**77,375**

Requests for Microbiology Examinations for External Clients

Year	Bacteriology	Serology	Genetic testing (extrahuman genome, COVID)	Total
2009	33,564	4,705	0	38,269
2010	18,876	3,624	0	22,500

2011	17,804	3,409	0	21,213
2012	25,144	3,381	0	28,525
2013	23,218	3,261	0	26,479
2014	17,353	2,376	0	19,729
2015	15,738	2,447	0	18,185
2016	15,509	2,391	0	17,900
2017	13,012	2,216	0	15,228
2018	11,631	1,964	2	13,597
2019	10,819	1,684	7	12,510
2020	**7,215**	**1,262**	**72**	**8,627**

Requests for microbiological tests – total

Year	Bacteriology	Serology	Genetic testing (extrahuman genome, COVID)	Smears from the environment	Total
2009	92,341	15,591	87	NA	107,932
2010	74,387	14,141	139	NA	88,528
2011	73,453	15,257	105	NA	88,710
2012	93,396	17,373	174	NA	110,769
2013	95,189	17,451	130	NA	112,640
2014	74,502	13,935	117	NA	88,437
2015	71,659	13,403	163	NA	85,062
2016	72,994	12,770	227	NA	85,764
2017	72,263	12,772	260	1,912	87,144
2018	71,010	15,024	275	2,586	88,620
2019	69,382	13,292	385	2,254	84,928
2020	**58,038**	**12,147**	**13,792**	**1,947**	**85,924**

Antibiotic Center

Consultations provided to inpatients of Na Homolce Hospital

Year	Number of consultations	Consultation at the bed / week (selected ICU 3 times a week)	Number of patients consulted (total number)
2009	8,026	52	1,936
2010	8,049	48	2,051
2011	8,837	49	2,266
2012	9,280	51	2,782
2013	10,021	55	3,004

2014	10,215	54	2,478
2015	10,599	54	2,654
2016	11,388	58	2,798
2017	10,885	55	2,879
2018	11,027	58	2,971
2019	11,038	56	3,146
2020	**10,608**	**57**	**2,782**

Public activities

- The National Reference Center for Infections Associated with Healthcare of the National Institute of Public Health: The Department collaborates with the center.
- Working group for antibiotic resistance monitoring: The Department is part of a network of laboratories monitoring antibiotic resistance in the Czech Republic.
- National Reference Laboratories of the National Institute of Public Health (NIPH): The Department cooperates and participates in national surveillance.

Comments

Laboratory diagnostics

- During the COVID pandemic, cooperation with the Department of Medical Genetics was enhanced to help ensure adequate testing for SARS-CoV2 in NHH.
- Since 2020, KMAS (Clinical Microbiology and Antibiotic Surveillance) has been making full use of the MALDI-TOF mass spectrometry method to identify bacteria and yeasts. The identification of strains from positive blood cultures after four hours of cultivation is a significant benefit. Simultaneous implementation of new EUCAST breakpoints for determining the susceptibility of selected bacterial species to antibiotics after 4 or 6 hours can enable us to have the basis for targeted antibiotic therapy of serious conditions even on the day of signaling of positive blood culture. The information obtained in this way reaches the attending physician on the same day thanks to KMAS working hours, which are until 6 pm on weekdays, and the consultant's round-the-clock telephone service.
- KMAS, in collaboration with infection control nurses, ensures the pre-analytical phase of the SARS-CoV 2 examination and the subsequent distribution of the results.

Antibiotic Center

- The number of consultations provided and patients in 2019 slightly increased as compared to the previous year. No significant epidemiological changes in the resistance of infection originators were recorded.
- The exception is the occurrence of vacomycin-resistant enterococci, where there has been a sharp increase in the number of colonized patients compared to previous years. Most of these patients were imported from other health care facilities or from a community service center.

Infection prevention and control

- In 2020, the hospital faced the repeated consequences of reorganizing care during the COVID pandemic.
- The overall incidence of nosocomial bloodstream infections increased relatively significantly. Overall, however, it remains below 2/1,000 treatment days). Due to this, the evaluation of trends may not be reliably assessed, however, the data will be further analyzed using the same methodology. Trends are regularly reported to the Infection Control Team to the appropriate departments and we take appropriate measures. The number of primary catheter nosocomial infections of the bloodstream increased relatively, in secondary ones especially in the segment of infections at the site of surgery.

- The number of patients colonized or infected by MRSA slightly decreased as compared to the previous year, while the number of MRSA transmissions during hospitalisation in Na Homolce Hospital also decreased and is generally low. The number of infections caused by Clostridioides difficile was comparable to previous years.

Operational and economic parameters

- In 2020, the staffing of the Department was strengthened and stabilized by the arrival of 2 physicians with specialized competence in the field of medical microbiology and 1 physician with specialized competence in the field of infectious medicine.

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 cooperates with the National Reference Center for Infections associated with healthcare within the National Institute of Public Health (NRC HAI SZÚ). In 2020, the Department dealt mainly about cooperation on the preparation of a teaching video of the NRC HAI for dressing and undressing personal protective equipment at COVID-19.
- The Department participates in training of nurses and physicians of infection control organized by the NRC HAI SZÚ.
- The Department cooperates with the NIPH National Reference Laboratory for Antibiotics and in 2020 it again participated in the Respiratory Study.
- The Department participates in the 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 participates in the Euro-GASP program, as well as in the surveillance program for Gonococcus antimicrobial resistance organised by the European Center for Disease Prevention and Control (ECDC, Stockholm).
- The Department cooperates with the Higher School of Nursing in Prague at Alšovo nábřeží in Prague in providing training to laboratory technicians.

Department of Pathology

Head of Department: Martin Syrůček, MD

Activities of the Department

The Department carries out all bioptic and cytological diagnostics within Na Homolce Hospital and, in cooperation with other laboratories providing complementary services, provides some bioptic and cytological diagnoses to selected private and state healthcare 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 necroptic activity (autopsies), including organizational services when delivering bodies to the funeral service. In 2020, we temporarily performed an autopsy service for the hospitals in Kladno and Slaný. The Department organizes clinical pathology workshops with the 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. The newly reconstructed premises are, however, divided into a histology and cytology laboratory and a special methods laboratory (immunohistochemistry).

Basic data

Staff

- 4 independently operating physicians working full-time and one physician with 0.5 FTE and one physician with 0.8 FTE
- 8 laboratory technicians working full-time
- 1 autopsy technician working full-time
- 2 secretaries (assistants) working full-time
- 1 quality manager in charge of the requirements of the Department in connection with JCI accreditation processes and ISO 15189

Premises

The division and equipment of the Department of Pathology comply with the requirements of ISO 15189. They include:

- administrative section with 6 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 equipment with 20 units 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 screening room.

Performance overview

Biopsy diagnostics

	2005	2009	2011	2012	2014	2015	2016	2017	2018	2019	2020
Number of examinations	19,546	21,831	22,670	21,643	20,817	22,525	20,970	21,329	21,153	21,815	19,548
Numbers of sections	49,290	58,429	61,631	65,890	63,972	65,489	61,401	64,155	62,658	62,244	57,366

Cytological diagnostics

	2005	2009	2011	20t12	2014	2015	2016	2017	2018	2019	2020
Number of examinations	5,349	2,738	2,153	2,205	1,993	1,992	2,249	2,249	2,203	2,155	2,091
Numbers of sections	11,744	6,214	5,092	4,932	4,365	4,392	5,191	5,191	4,464	4,044	4,158
BAL (bronchoalveolar lavage)			187	162	121	107	114	114	150	200	369

There was a slight decrease in the number of biopsy examinations in 2020 compared to past years, while the number of cytological examinations increased. In 2020, the Department laboratory increased the number of immunohistochemistry examinations, due to the complicated diagnostics of the tested samples and the necessity to increase the accuracy of tumor lesion classification.

Autopsy activities

	2005	2009	2011	2012	2014	2015	2016	2017	2018	2019	2020
Number of deceased	286	270	226	216	225	196	233	226	239	240	240
Number of autopsies	248	154	136	122	123	122	136	121	122	121	93

The autopsy rate for 2020 amounts to 40 %.

Workshops

In 2020, the physicians of the Department attended 120 clinical pathological conferences, where 12 autopsy and 887 biopsy cases were discussed.

	2005	2009	2010	2012	2014	2015	2016	2017	2018	2019	2020
Number of workshops	127	85	98	88	102	95	94	114	139	126	120
Number of necropsy cases	65	82	27	20	22	21	19	26	18	17	12
Number of biopsy cases	377	684	612	843	837	753	701	692	901	775	887

For many years, in addition to clinical and pathological workshops, we organize 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 therapeu-

tic and prognostic outlooks. Workshops are also organized once a week or once every two weeks in cooperation with the ENT Department and clinical and pathological oncology workshops with the Department of General Surgery take place once a week. Regularly once a week, the staff participate in neuro-oncological workshops with physicians from neurosciences, oncologists from the Teaching Hospital in Motol and physicians from the Department of Radiodiagnostics, to discuss all biopsy cases from the preceding period. Workshops with other specializations are organized as needed, approximately twice a year, clinical pathological workshops together with the Department of Cardiac Surgery are organized once a month on a regular basis. These workshops are part of the further training program of clinical departments, aimed at increasing the quality required under the accreditation standards.

Significant changes and events

- ČIA ISO accreditation: in September 2020, a Czech Acreditation Institute (ČIA) re-accreditation was successfully performed.
- SAK accreditation: The Department of Pathology as part of Na Homolce Hospital participated in successful accreditation by SAK accreditation in January 2020.
- 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 and interlaboratory comparisons.
- As part of the Center for Neuro-Oncology 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.
- The Department of Pathology has the accreditation for the teaching program of medical specialities in the field of pathology from the Czech Ministry of Health.

Development perspectives for 2021

- We will maintain and further improve the standard of bioptic diagnostics and clinical and pathological workshops.
- The range of immunohistochemical antibodies has been extended according to the needs of individual hospital departments. We perform most immunohistochemical staining on a semi-automated device – improving and accelerating the diagnosis of tumor and non-tumor lesions.
- Transition to a new information system.

Section for Nursing Care

The Section for Nursing Care focuses on the methodical management and professional management of nursing care in NHH. These include the Departments of Nutritional Therapy, Central Sterilization, Health and Social Care, and the Department of Documentation and Hospital Hygiene.

As in previous years, in 2020 we also prepared projects that we focused primarily on increasing quality and safe care. The aim of the planned actions and projects was to support personnel stability, further develop lifelong learning, social and palliative care and, last but not least, support public health.

We started the year 2020 with a successful accreditation audit by SAK o.p.s., but in the following months we were forced to suspend all planned activities due to the epidemiological situation.

We have therefore focused all our efforts on standard care of our patients, to which covid-positive patients have been added. The Department of Anesthesiology and Reanimation, Gynecology and ENT Departments have primarily become covid units, where paramedical staff with high commitment and maximum professionalism cares for seriously ill covid positive patients and tries to return them to normal life as soon as possible. However, we provide the same quality of care to patients across all areas of our hospital. Throughout the year we have all strived and continue to strive for the high quality of care that patients in our hospital are accustomed to.

Even during the pandemic, we continued some of our existing activities. For example, we have continued the existing cooperation with educational institutions within the framework of professional student internship. Students quickly became involved in multidisciplinary teams, where they actively and reliably participate in managing the epidemiological situation.

During the year, we also focused on the revision of the nutritional system. We have started to develop new software, the task of which is to facilitate standard-setting for patients, easier handling and also the connection with the catering operation. Thanks to this software, we will also have a more comprehensive overview of the energy intakes of hospitalized patients, and we will be able to effectively focus on the prevention of malnutrition. At the same time, we will continue to include healthier foods in our diet. In cooperation with the catering operation, we have also selected a new active tablet system for dispensing patient food, which meets the highest quality standards.

Last year, nursing care teams continued to participate in the electronic documentation project, which will reduce the administrative burden and thus contribute to making the work of healthcare professionals more attractive and obtaining the data needed to further improving of patient care.
The year 2020 was demanding for our hospital, it required rapid changes in the organization of nursing care and in the measures that we successfully managed.

Plans for 2021

The main goal of the Section for Nursing Care is to continue to help manage the current epidemiological situation, meet nursing goals, support a positive corporate culture and maintain high quality standards.

Department of Biomedical Engineering

Head of Department: Ing. Miroslav Halíř

Activities of the Department

The main task of the Department is to ensure the operation and servicing of medical equipment and measuring instruments at Na Homolce Hospital. Other activities include monitoring new trends in biomedicine and of technical documents for tenders for new medical device equipment. The Department also prepares applications to commission for the assessment of the deployment of medical instrument funds from the Czech Ministry of Health and applications for grants. The Department of Biomedical Engineering at Na Homolce Hospital is an accredited facility of the Czech Ministry of Health for postgraduate teaching of the Institute for Further Training in Healthcare, including specializations in biomedical engineering in the Czech Republic.

Prevention and Maintenance Section

It carries out preventive safety inspections of medical devices as stipulated by Act No. 268/2014 Coll., on Medical Devices, as amended, as well as by SAK standards. It carries out regular internal maintenance, ensures timely prevention and servicing by external equipment providers and keeps documentation on all medical devices. It also provides professional assistance in introduction of new medical equipment, monitors progress in medical equipment, provides navigation systems for neurosurgery, provides shooting pressure ulcers and autotransfusion for vascular surgery. It also cooperates with clinical departments in the preparation of technical specifications for public contracts and checks the tender documentation and tenders for the Department of Procurement and Public Contracts. It takes over the gained medical equipment and provides instruction to the personnel operating the medical equipment. The Department is managed by Mgr. Ondřej Zeman.

Metrology Section

This section makes sure that the metrology standards at Na Homolce Hospital comply with Act No. 505/1990 Coll., on Metrology, as amended, and the related metrology regulations. The above legislation requirements are an essential part of the Metrology Order directive, which stipulates the responsibilities, rights and obligations of employees in the use of measuring instruments and 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, pressure, humidity and time and ensures the external calibration of etalons and working instruments measuring weight, length and time. It also organizes external official verification of devices measuring temperature and weight and eye tonometers. The Authorized Metrology Center is an essential part of the Metrology Section and provides official verification of the measuring instruments for indirect measurement of pressure – tonometers, within the scope of Decision No. 61/2000 and Authorisation Conditions, Ref. No. 930/00/20 of the Office for Standards, Metrology and Testing. The head of the section is Zdeněk Malý.

Changes / new events in the previous year

In 2020, the Department of Biomedical Engineering was intensively involved in resolving the emergency situation with the management of the Covid-19 pandemic.

SCIENTIFIC AND RESEARCH ACTIVITIES OF THE HOSPITAL

Na Homolce Hospital has fulfilled the definition of an organization for research and knowledge dissemination according to Commission Regulation (EU) No. 651/2014, Art. 2(83), and has been included on the list of research organizations kept by the Ministry of Education, Youth and Sport on the basis of Section 33a of Act No. 130/2002 Coll., on Research and Development Support.
Research and development at Na Homolce Hospital are supported by means of combined financing – institutional support from the Czech Ministry of Health and targeted support grants which are carried out both by individual departments of the hospital and in cooperation with a number of excellent research facilities across the entire country. The majority of research teams have also been involved in clinical studies over a long period of time, with the Cardiac Center having the largest share in these studies.
Administrative support for grant projects and clinical studies is provided by the Department of Science and Research, which also includes the Medical Library. The medical library obtains and provides information especially in the main disciplines of the hospital. Its fund includes 8,000 library units, of which 31 are Czech and 15 foreign professional periodicals in any year.

Grant projects

In 2020, Na Homolce Hospital managed a total of 68 grant projects, of which 59 were supported by the institutional support of the Czech Ministry of Health, and 9 targeted support grants were supported by the Agency for Medical Research of the Czech Ministry of Health.

Grants from the Czech Ministry of Health

- In 2020, Na Homolce Hospital received institutional support for the long-term conceptual development of the research organization, based on the decision of the Czech Ministry of Health (Decision No. 2 RVO-NNH/2020). The support was used and distributed based on the functional system of internal grants, their assessment by a specialized commission and approval by the Scientific Board and the hospital Director.
- In line with the guidelines of the Czech Ministry of Health, 1 research projects which started in 2014, 4 projects initiated in 2015, 7 projects initiated in 2016, 10 projects initiated in 2017, 9 projects initiated in 2018, 11 projects initiated in 2019 and 17 projects in 2020 were supported by the institutional support of the Czech Ministry of Health for 2020. Na Homolce Hospital again supported a large spectrum of research projects in order to maintain the plan of a broader research basis for 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 May 2020 and continues at present.

Special-purpose grants of the Agency for Medical Research

Department	Project title	Allocated number	Grant provider (main beneficiary)
Cardiology	Extracorporeal membrane oxygenation in the treatment of cardiogenic shock (study ECMO-CS)	15-27994A	AZV MZ ČR (NHH)
Neurology	Morphological characteristics of atherosclerotic plaque in the carotid artery associated with plaque progression and risk of brain stroke	17-31016A	AZV MZ ČR (Central Military Hospital in Prague)
Radiodiagnostics	Detection of gadolinium retention dynamics in the brain after application of contrast agents by altering T1 and T2 relaxation times	NV18-04-00457	AZV MZ ČR (NHH)
Radiodiagnostics	Primary progressive aphasia – clinical, MRI and structural correlations. Prospective multicenter study	NV18-04-00346	AZV MZ ČR (1st School of Medicine)

Department	Project title	Allocated number	Grant provider (main beneficiary)
Vascular Surgery	Application of amniotic membrane in the treatment of long-term non-healing wounds	NV18-08-00106	AZV MZ ČR (1st School of Medicine)
Cardiology	Dual antiplatelet therapy of patients with acute myocardial infarction in cardiogenic shock – DAPT-SHOCK AMI study (note – NHH participation terminated as of 30 April 2020)	NV19-02-00086	AZV MZ ČR (Teaching Hospital Královské Vinohrady)
Radiodiagnostics	Overlapping of neurodegenerative dementias and their clinicopathological correlations: a prospective-restrospective multicenter study	NV19-04-00090	AZV MZ ČR (Thomayer Hospital)
Stereotactic and Radiation Neurosurgery	Clinical, imaging and biological predictors of the effects of deep brain stimulation in Parkinson's disease	NV19-04-00233	AZV MZ ČR (1st School of Medicine)
Cardiology	Evaluation of the significance of right-to-left shunt in patients with PFO after suffered systemic embolism	NU20-02-00310	AZV MZ ČR (University Hospital Hradec Králové)

Clinical studies

In 2020, a total of 98 active clinical studies were recorded, of which 14 clinical studies were completed during 2020.

Number of studies performed in 2020 – by subject and department

Clinical studies	Medical devices	Medicines	Partial health services	Total number	
Cardiology	53	2	0	55	56 %
Cardiac surgery	2	0	0	2	2 %
Neurology	0	1	0	1	1%
Oncology	0	3	0	3	3 %
Radiodiagnostics	2	0	4	6	6 %
Nuclear medicine / PET	0	0	28	28	29 %
Pharmacy	0	0	1	1	1%
Clinical biochemistry...	0	0	1	1	1%
Internal medicine	0	1	0	1	1%
Total	**57**	**7**	**34**	**98**	**100 %**

Performed Audits of Clinical Studies

In 2020, 2 audits of clinical studies were performed by the State Institute for Drug Control – SÚKL

02/2020	SÚKL audit	Clinical trial IMPULSE	comments settled
10/2020	SÚKL audit	Clinical trial REDUCE LAP-HFREF	comments settled

Summary

Basic breakdown of research projects in Na Homolce Hospital in 2020

Scientific project type	Subject	Number
Clinical studies	Medical devices	57
	Medicines	7
	Partial health services for external researcher	34
research grants	Institutional support (internal grants)	59
	Special purpose support (external grants)	9
Research projects – total		**166**

PUBLICATIONS IN 2020

Publications Co-Authored by the Staff of Na Homolce Hospital

Foreign

Journal Articles with IF

1) ANDREASOVÁ, T. – VRÁNOVÁ, J. – VONDRÁKOVÁ, D. – SEDLÁČKOVÁ, L. – ZAKOSTELSKÁ, Z. – NEUŽIL, P. a MÁLEK, F. Role of biomarkers of cardiac remodeling, myofibrosis, and inflammation in assessment of disease severity in euvolemic patients with chronic stable heart failure. *Journal of International Medical Research*. 2020, 48(8), 12 s. ISSN 0300-0605.

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QUALITY AND SAFETY

International JCI accreditation

Organization Accredited
by Joint Commision International

The long-term quality of healthcare, the safety of patients and the staff working at Na Homolce Hospital are the main pillars of its stability. From 2005 to 2020, Na Homolce Hospital held the Joint Commission International (JCI).

In 2019, the hospital began preparations for domestic accreditation by SAK o.p.s. In January 2020, it received accreditation from this recognized company.

Since March, year 2020 has been significantly affected by the ongoing global Covid-19 pandemic. Throughout the year, the Quality Department assisted organizationally in measures related to managing this pandemic.

National accreditation by SAK

Accreditation, i.e. the assessment of the set quality system of the hospital by an independent third party – SAK o.p.s, is completely voluntary in the Czech Republic and is the most demanding in our country. It consists of 97 assessed standards, which is significantly more than the legislative basis of 17 standards.

The Joint Accreditation Commission was established in 1998. Its mission is to continuously increase the quality and safety of health care in the Czech Republic through the accreditation of medical facilities, consulting and publishing activities. Since June 21, 2012, Spojená akreditační komise, o. p. s., has been an authorized evaluator of the quality and safety of inpatient health care for types of health care in accordance with provisions of Section 5(2)(f) to (h) of Act No. 372/2011 Coll., according to the restrictions on granting authorization pursuant to Decree No. 102/2012 Coll.

SAK accreditation standards cover all clinical areas of the activities of the facility: diagnostic care, anaesthesiology and surgery, drug management and, last but not least, coordination and continuity of care. However, requirements are also placed on non-clinical areas related to patient care: e.g. catering, hospital operation (repairs, services, technical wiring), cleaning, hygiene in the hospital environment, fire protection, management.

From 27 to 29 January 2020, an accreditation survey of Spojená akreditační komise, o.p.s., took place at NHH, including an assessment of the quality of care and patient safety in accordance with the relevant provision of Act No. 372/2011 Coll., on Health Services and the Conditions for Providing them, as amended, and Decree No. 102/2012 Coll., on Evaluation of Quality and Safety of Inpatient Health Care, as amended. Based on this survey, NHH obtained accreditation for the period of the following 3 years. Spojená akreditační komise, o.p.s., appreciated the efforts of management and employees to constantly increase the quality of care and patient safety by participating in the accreditation process.

Quality systems at Na Homolce Hospital

ISO 15189

The following laboratories: Department of Clinical Biochemistry, Hematology and Immunology, Biopsy Laboratory of the Department of Pathology and Clinical Microbiology and Antibiotic Center of Na Homolce Hospital have had a quality management system in place since 2011 (awarded by the Czech Institute for Accreditation) that was accredited in accordance with ISO 15189. ISO 15189 (Medical laboratories – special requirements for quality and competence) focusing 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 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, a system of quality management in accordance with ISO 9001 has been in place in the Department of Nuclear Medicine for the provision of diagnostic services using immunoanalysis laboratory methods 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 has held 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 at Na Homolce Hospital, as well as the provision of contractual services for the offices of general and specialist practitioners.

Internal quality and safety audits

Year-round internal audits (process, targeted, consulting) are conducted to determine compliance with established systems/processes in common practice, for example regarding medical records, drug management, hygienic-epidemiological regime, occupational health and safety, environmental and information safety, storage and disposal of chemicals and waste, complement operation and other areas related to the provision of health services.
In 2020, more than 500 internal audits were conducted. The plan was modified according to the current epidemiological situation of Covid-19. Only NHH inpatient departments, operating rooms were visited and the closed documentation was checked.
These audits provide feedback on the level of quality and safety settings in NHH, based on preventive and corrective measures or opportunities to improve ongoing processes.

Adverse event management (AE)

Monitoring and systematic evaluation of individual events is one of the key approaches that enables NHH to increase the quality and safety of health services provided.
The Quality Department manages the electronic application "Electronic Data Storage", in which all unexpected undesirable or potentially dangerous events that could endanger or already endangered the health or safety of patients, staff or hospital visitors are recorded and analyzed. In 2020, more than 200 reports were registered in the electronic application.

Adverse event reporting to the Institute of Health Information and Statistics

Na Homolce Hospital has been involved in 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 a year to the Czech Institute of Medical Information and Statistics. On the basis of data obtained from various health care facilities in the Czech Republic, the Institute of Health Information and Statistics makes comparisons in individual event categories (falls, pressure ulcers, etc.) and according to the type of facility. Na Homolce Hospital is included in category – S – specialized hospitals/centers.
In comparison with other medical facilities, we have been achieving very good results for a long time.

The Quality Department is a member of the working group for the creation of national methodologies for adverse event reporting systems, see http://shnu.uzis.cz/.

ECONOMIC STABILITY

Development of costs and revenues

Medical costs	2019 (in CZK mil.)	2020 (in CZK mil.)	Increase/decrease 2020/2019 (in CZK mil.)	2020/2019
Medicines	90	91	1	101%
Separately accounted medicines	73	77	4	105%
Blood and blood derivatives purchase	41	32	-9	78%
Special medical materials	196	197	1	101%
Separately accounted materials	832	750	-82	90%
Labour costs (in CZK mil.)	**2019 (in CZK mil.)**	**2020 (in CZK mil.)**	**Increase/decrease 2020/2019 (in CZK mil.)**	**2020/2019**
Wages	1 264	1 425	161	113%
Obligatory payments	423	474	51	112%
Other costs (in CZK mil.)	**2019 (in CZK mil.)**	**2020 (in CZK mil.)**	**Increase/decrease 2020/2019 (in CZK mil.)**	**2020/2019**
Other consumables (including low-value fixed assets)	75	75	0	100%
Energy consumption	50	43	-7	86%
Sale of goods	127	112	-15	88%
Repairs and maintenance	67	63	-4	94%
Travel expenses and education	9	3	-6	32%
Services	103	99	-4	97%
Other costs	155	291	136	188%
Depreciation	153	155	2	101%
Total costs	3 667	3 896	229	106%
Costs before taxes	3 615	3 780	165	105%

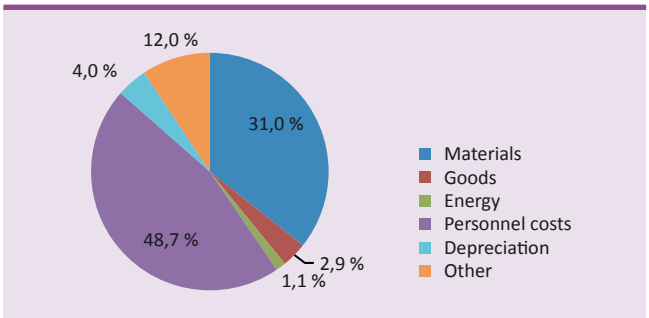
Revenues (in CZK mil.)	**2019** (in CZK mil.)	**2020** (in CZK mil.)	**Increase/decrease 2020/2019** (in CZK mil.)	**2020/2019**
Revenues from own goods and services	3 552	3 934	382	111%
– of which revenues from health insurance companies	3 491	3 883	392	111%
Sale of goods	176	149	-27	84%
Financial and other revenues	165	408	243	247%
Total revenues	3 894	4 491	597	115%

Profit (loss) (in CZK mil.)	**2019** (in CZK mil.)	**2020** (in CZK mil.)	**Increase/decrease 2020/2019** (in CZK mil.)	**2020/2019**
Profit (loss) before taxes	279	710	431	255%
Profit (loss) in the accounting period	227	595	368	262%

Costs structure by types

	2019 (in CZK mil.)	2020 (in CZK mil.)	share in the total in 2020
NHH total	**3 667**	**3 896**	**100 %**
Materials	1 300	1 209	31,0 %
Goods	127	112	2,9 %
Energy	50	43	1,1 %
Personnel costs	1 687	1 898	48,7 %
Depreciation	153	155	4,0 %
Other	350	479	12,3 %

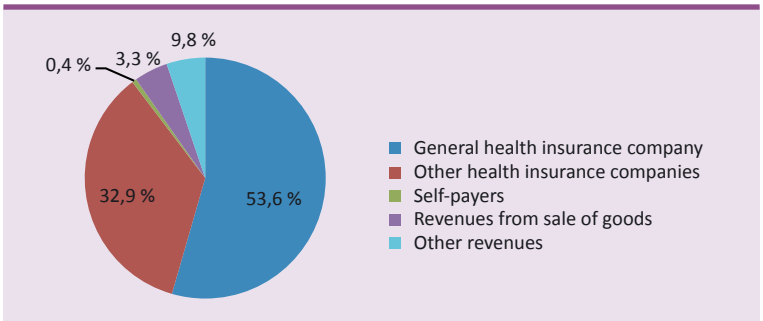
2020 costs structure by types



Structure of revenues

	2019 (in CZK mil.)	2020 (in CZK mil.)	share in the total in 2020
Total revenues	**3 894**	**4 491**	**100 %**
General health insurance company	2 121	2 407	53,6 %
Other health insurance companies	1 371	1 476	32,9 %
Self-payers	24	19	0,4 %
Revenues from sale of goods	176	149	3,3 %
Other revenues	202	440	9,8 %

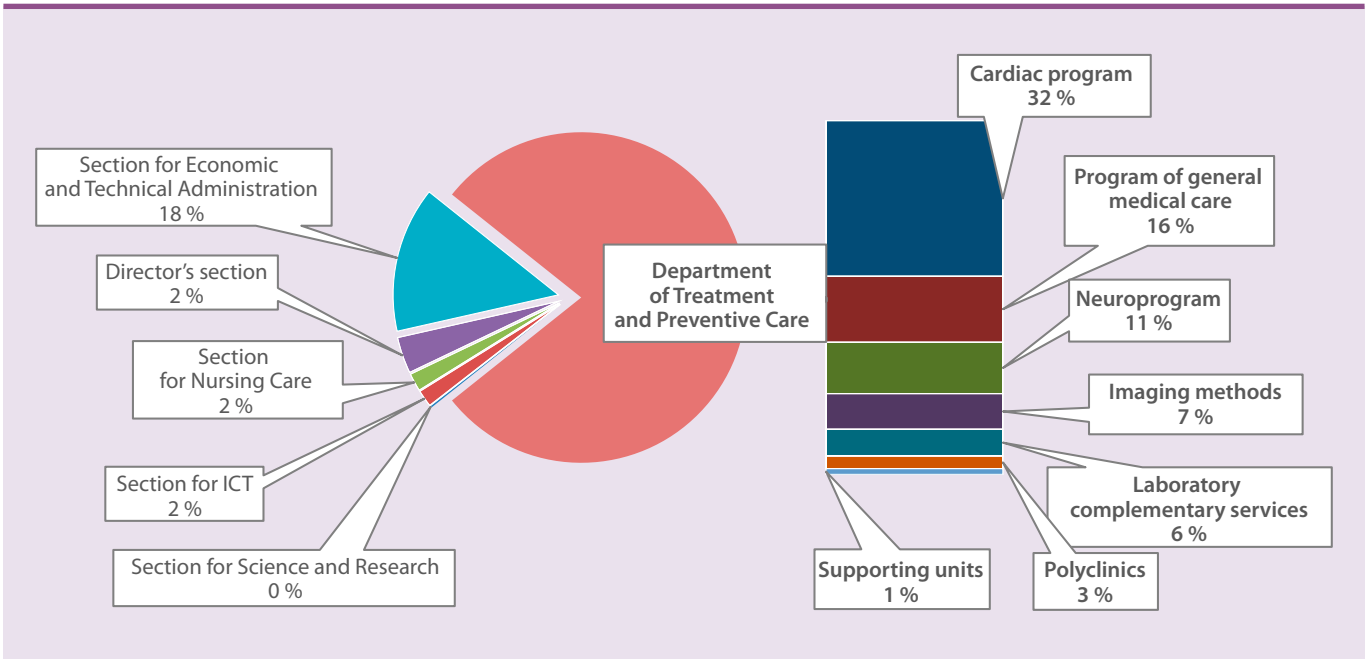
Structure of revenues in 2020



Cost structure by section

	2019 (in CZK mil.)	2020 (in CZK mil.)	share in the total in 2020
NHH total	3 667	3 896	100 %
Section for Science and Research	9	11	0,3 %
Section for ICT	61	60	1,5 %
Section for Nursing Care	67	75	1,9 %
Director's section	130	74	1,9 %
Section for Economic and Technical Administration	525	681	17,5 %
Section for Treatment and Preventive Care in total	2 875	2 995	
Cardiac program	1 268	1 253	32,2 %
Program of general medical care	538	614	15,8 %
Neuroprogram	418	445	11,4 %
Imaging methods	290	287	7,4 %
Laboratory complementary services	217	244	6,3 %
Polyclinics	104	108	2,8 %
Supporting units	40	44	1,1 %

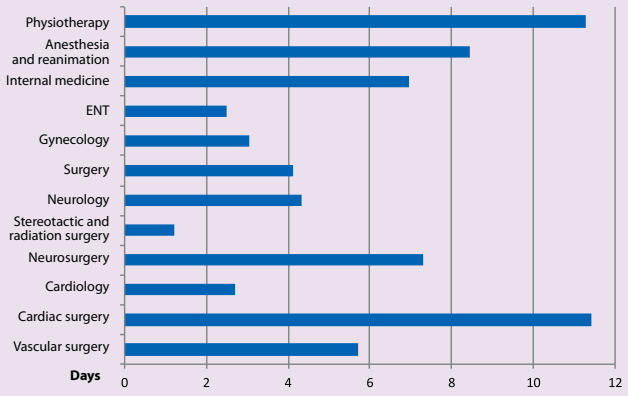
Cost structure by section in 2020



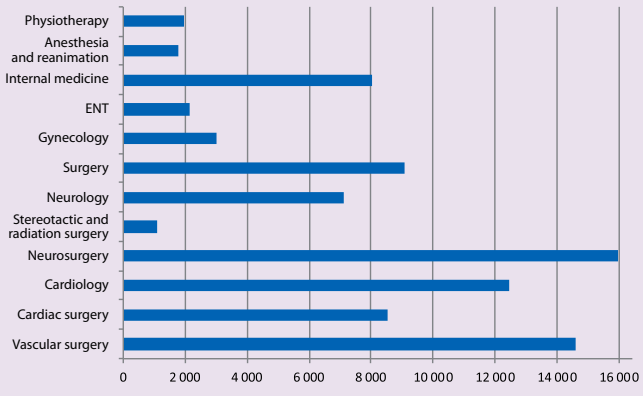
Medical data

Head of the Department	Title	2020		
		Mortality	Average treatment period	Number of treatment days
01	Vascular surgery	1,3 %	5,72	14 620
02	Cardiac surgery	1,3 %	11,42	8 526
05	Cardiology	1,0 %	2,70	12 449
11	Neurosurgery	0,4 %	7,31	15 978
12	Stereotactic and radiation surgery	0,0 %	1,23	1 072
15	Neurology	3,4 %	4,31	7 120
21	Surgery	0,2 %	4,11	9 085
22	Gynecology	0,3 %	3,03	3 023
23	ENT	0,1 %	2,49	2 137
25	Internal medicine	3,9 %	6,96	8 053
26	Anesthesia and reanimation	15,7 %	8,43	1 755
31	Physiotherapy	0,0 %	11,26	1 940
NHH	NHH	1,3 %	4,85	85 758

Average treatment period



Number of treatment days



Statutory audit of the annual financial report for 2020

FIZA

EKONOMIKA ■ PORADENSTVÍ ■ AUDIT ■ DAŇOVÉ PORADENSTVÍ

Zpráva nezávislého auditora o přezkoumání hospodaření státní příspěvkové organizace Nemocnice Na Homolce za rok 2020

10. 2. 2021

Auditorská společnost

FIZA, a.s. se sídlem Hrozňatova 3, 615 00 Brno, IČ 26252325, číslo oprávnění 377.

Auditor

Ing. Jiří Ficbauer, CSc., MBA, číslo oprávnění 0431

Název, sídlo a IČ státní příspěvkové organizace

Název: Nemocnice Na Homolce
Sídlo: Roentgenova 2, PSČ 150 30 Praha 5
IČ: 00023884

Období, za které bylo provedeno přezkoumání

Ověřovaným účetním obdobím je rok 2020. Toto účetní období bylo uzavřeno dnem 31. 12. 2020.

Vymezení odpovědnosti

Za vedení účetnictví, za jeho úplnost, průkaznost a správnost odpovídá ředitel státní příspěvkové organizace. Naším úkolem je, na základě provedeného ověření, zpracovat zprávu a vyjádřit názor na účetní závěrku a hospodaření státní příspěvkové organizace.

Rozsah přezkoumání

Předmětem přezkoumání je účetní závěrka státní příspěvkové organizace za rok 2020. Přezkoumání hospodaření také zahrnovalo ověření údajů:

- v účetní závěrce za rok 2020;
- o dodržení zásad hospodaření státní příspěvkové organizace v roce 2020;
- o plnění příjmů a výdajů rozpočtu;
- o ostatních peněžních operacích;
- o tvorbě a použití peněžních fondů;
- o nákladech a výnosech hlavní a hospodářské činnosti.

Předmětem přezkoumání bylo rovněž nakládání s majetkem ve vlastnictví státní příspěvkové organizace, zadávání a uskutečňování veřejných zakázek, stav pohledávek a nakládání s nimi, ručení za závazky fyzických a právnických osob, zastavování movitých a nemovitých věcí ve prospěch třetích osob a zřizování věcných břemen k majetku.

Přezkoumání hospodaření bylo naplánováno a provedeno výběrovým způsobem s ohledem na významnost jednotlivých skutečností tak, aby auditor získal přiměřenou jistotu pro své vyjádření.

Přezkoumání bylo provedeno v souladu se zákonem č. 93/2009 Sb., o auditorech a o změně některých zákonů (zákon o auditorech). Dále bylo provedeno v souladu se standardem ISAE 3000 „Ověřovací zakázky, které nejsou auditem ani prověrkami historických finančních informací", přičemž byla současně přiměřeně aplikována i ustanovení dalších standardů ISA. Dále byl proveden s přihlédnutím zejména k:

- zákonu č. 563/1991 Sb., o účetnictví, ve znění pozdějších předpisů,
- zákonu č. 218/2000 Sb., o rozpočtových pravidlech a o změně některých souvisejících zákonů (rozpočtová pravidla), ve znění pozdějších předpisů;
- vyhlášce č. 410/2009 Sb., kterou se provádějí některá ustanovení zákona č. 563/1991 Sb., o účetnictví, ve znění pozdějších předpisů, pro některé vybrané účetní jednotky, (dále také jen „vyhláška č. 410/2009 Sb.);
- Českým účetním standardům pro některé vybrané účetní jednotky, které vedou účetnictví podle vyhlášky č. 410/2009 Sb. (účinným od 1. 1. 2010);
- Zákonu č. 134/2016 Sb., o zadávání veřejných zakázkách, ve znění pozdějších předpisů a
- dalším navazujícím normám, předpisům, zákonným ustanovením a obvyklým postupům.

Rozsah provedených prací na přezkoumání hospodaření státní příspěvkové organizace nesplňuje požadavky pro vydání auditorského výroku, a proto tato zpráva není zprávou auditorskou, ale je zprávou ověřovací.

Výrok auditora

Při provedení přezkoumání hospodaření státní příspěvkové organizace byl prověřen stav účetnictví, účetních výkazů a ostatní skutečnosti ověřující správnost hospodaření, a nebyly zjištěny žádné významné nedostatky.

Auditor je toho názoru, že hospodaření státní příspěvkové organizace a její účetní závěrka podává ve všech významných ohledech věrný a poctivý obraz aktiv, závazků, vlastních zdrojů krytí stálých a oběžných aktiv, cizích zdrojů a finanční situace státní příspěvkové organizace k 31. prosinci 2020 a výsledku hospodaření za rok 2020 v souladu se zákonem o účetnictví a příslušnými předpisy České republiky.

Při provádění přezkoumání hospodaření státní příspěvkové organizace nebyly zjištěny významné nedostatky ani rozpory se závaznými právními předpisy, a proto vyslovuje auditor výsledek přezkoumání státní příspěvkové organizace

bez nedostatků

Ing. Jiří Ficbauer, CSc., MBA
auditor
číslo oprávnění 0431

FIZA, a.s.
auditorská společnost
číslo oprávnění 377

3

INFORMATION DISCLOSURE

Information disclosure pursuant to Act No. 106/1999 Coll., on Free Access to Information

NA HOMOLCE
NEMOCNICE

Annual Report for 2020
on Information Disclosure pursuant to Act No. 106/1999 Coll., on Free Access to Information

In accordance with the provisions of Section 18 of Act No. 106/1999 Coll., on Free Access to Information (hereinafter referred to as the "Act"), Na Homolce Hospital, Company Identification Number: 00023884, based at Roentgenova 37/2, 150 00, Prague 5 (hereinafter referred to as "NHH") publishes this Annual Report for 2020.

In connection with for information received on the basis of the Act (hereinafter referred to as the "Request"), NHH hereby publishes the following:

a. **The number of submitted requests for information and the number of decisions issued on the denial of a request**
In 2020, NHH received three (3) requests for information. No decision to reject or partially reject the request has been issued.

b. **The number of appeals filed against the decision**
In 2020, NHH did not receive any appeal against the decision on the request.

c. **Judgements regarding the review of the lawfulness of the decision on the request and an overview of the expenses incurred in connection with court proceedings in accordance with the Act**
In 2020, NHH received one (1) judgement regarding the review of the lawfulness of the decision on the request. This judgement constitutes Annex No. 1 to the Annual Report. In connection with the proceedings on this judgement, NHH spent a total of CZK 13,068 in 2020 (in words thirteen thousand sixty-eight Czech crowns) including VAT. There are currently no further proceedings regarding the review of the lawfulness of the decision on the request.

d. **List of granted exclusive licenses**
No exclusive licenses were granted in connection with the requests received in 2020.

e. **The number of complaints filed under Section 16a of the Act, reasons for filing and the manner of their settlement**
In 2020, NHH did not receive any complaint pursuant to Section 16(a) of the Act.

f. **Other information related to the implementation of the Act**
NHH does not have any other information that relates to the application of the Act during 2020.

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