

# Annual report 2012 FN Motol



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## Introductory word

Dear friends,  
there is not a more ungrateful task than to write introductions to annual reports. Every year, they mandatorily state how the last year was either challenging or successful, and they vary according to the Decree of the Ministry's funding. In annual reports it is usual to offer thanks and hopes for the future. I face this task for 13th time in a row. I do not want to blaspheme but rather to approach the last year with humbleness.

The recent years have not been the easiest for the Czech health care. We all do what we can, it is evident that everyone works to the maximum and still it is not enough. Our university hospital, as well as the Czech health care, is standing at a crossroads. Although every path leads to some destination, it is still difficult to decide, whether this is the right destination. Is the objective to achieve the maximum economic efficiency? Or is it the achievement of the maximum satisfaction of the patients? Is not the aim meeting the needs of the employees? Is not the further development the only true aim of the hospital? Or are all those objectives correct? Where is the answer?

We are living in Europe, in the midst of the greatest economic crisis in the last 80 years and financial resources are being reduced rather than increased. Nevertheless, we strive to satisfy our patients' needs by offering services in an economically prosperous environment with friendly health professionals. How to achieve this? Inventing a perpetual motion machine seems to be an easier task. The old Roman proverb says that all roads lead to Rome. In the spirit of this maxim the management of our hospital has proceeded. We tried to pass the crossroads so that all the roads would lead to the only comprehensive objective, which is a developing hospital with satisfied patients and staff. It is getting increasingly difficult every year; nevertheless, in 2012 the Motol University Hospital was able to succeed economically - the hospital's accounts are in the black, it can continue reconstructing its paediatric parts from its own resources and increase salaries (especially of health professionals). At the same time according to patients' feedback the Motol Hospital is increasingly considered to be a standard of good health services.

I would almost conclude the report with the typical sentence used in reports by all auditors. The hospital's annual report contains true and unbiased data, accurately depicting the state of the hospital economy. This state is still optimistic. I wish us all many years filled with success rather than problems and threats.

JUDr. Ing. Miloslav Ludvík, MBA  
Director



## Management of the Motol university hospital

Director of the Hospital **Miloslav Ludvík, LLD, MBA**

Deputy Manager for Medical Preventive Care **Martin Holcát, MD, MBA**

Deputy Manager for Nursing Care **Jana Nováková, MBA**

- Staff Nurse

Deputy Manager for Economy **Jiří Čihař**

Personnel Deputy Manager **Jindřiška Feldmanová**

Deputy Manager for Engineering and Technology **Pavel Budinský, MD, MBA**

Deputy Manager for Science and Research **prof. Anna Šedivá, MD**

Deputy Business Manager **Luděk Navara**

## Scientific board

**prof. Marek Babjuk, MD**

Head of Department of Urology, 2nd Faculty of Medicine, Charles University and University Hospital Motol

**prof. Jan Betka, MD**

Head of Department of ENT, Head and Neck Surgery, 1st Faculty of Medicine, Charles University and University Hospital Motol

**assoc. prof. Ondřej Cinek, MD, Ph.D.**

Department of Paediatrics, 2nd Faculty of Medicine, Charles University and University Hospital Motol

**prof. Karel Cvachovec, MD, MBA**

Head of Department of Anaesthesiology and ICM, 2nd Faculty of Medicine, Charles University and University Hospital Motol

**prof. Tomáš Eckschlager, MD**

Department of Paediatric Haematology and Oncology, 2nd Faculty of Medicine, Charles University and University Hospital Motol

**Markéta Havlovicová, MD**

Senior consultant of Department of Biology and Medical Genetics, 2nd Faculty of Medicine, Charles University and University Hospital Motol

**prof. Jiří Hoch, MD**

Head of Department of Surgery, 2nd Faculty of Medicine, Charles University and University Hospital Motol

**Martin Holcát, MD, MBA**

Deputy Manager for Medical Preventive Care of University Hospital Motol

**prof. Václav Chaloupecký, MD**

Paediatric Cardiocentre of University Hospital Motol

**assoc. prof. Zdeněk Kabelka, MD**

Head of Department of ENT, 2nd Faculty of Medicine and University Hospital Motol

**prof. Josef Koutecký, MD**

Department of Paediatric Haematology and Oncology, 2nd Faculty of Medicine, Charles University and University Hospital Motol

**prof. Milan Kvapil, MD, MBA**

Head of Department of Internal Medicine, 2nd Faculty of Medicine, Charles University and University Hospital Motol

**prof. Robert Lischke, MD, Ph.D.**

Head of Department of Surgery, 1st Faculty of Medicine, Charles University and University Hospital Motol

**assoc. prof. Milan Macek, MD**

Department of Biology and Medical Genetics, 2nd Faculty of Medicine, Charles University and University Hospital Motol

**Jana Prausová, MD, Ph.D.**

Head of Department for Radiation Therapy and Oncology

**prof. Lukáš Rob, MD**

Head of Department of Obstetrics and Gynaecology, 2nd Faculty of Medicine, Charles University and University Hospital Motol

**assoc. prof. Miloslav Roček, MD**

Head of Department of Radiology, 2nd Faculty of Medicine, Charles University and University Hospital Motol

**prof. Anna Šedivá, MD**

Senior Consultant of Department of Immunology, 2nd Faculty of Medicine, Charles University and University Hospital Motol, Deputy manager for Science and Research

**assoc. prof. Radek Špišek, MD, Ph.D.**

Department of Immunology, 2nd Faculty of Medicine, Charles University and University Hospital Motol

**prof. Zdeněk Šumník, MD, Ph.D.**

Department of Paediatrics, 2nd Faculty of Medicine, Charles University and University Hospital Motol

**assoc. prof. Josef Zámečník, MD, Ph.D.**

Department of Pathology and Molecular Medicine, 2nd Faculty of Medicine, Charles University and University Hospital Motol

## Director's council committee

**prof. Jiřina Bartůňková, MD, MBA**

*Head of Department of Immunology, 2nd Faculty of Medicine, Charles University and University Hospital Motol*

**prof. Jan Betka, MD**

*Head of Department of ENT, Head and Neck Surgery, 1st Faculty of Medicine, Charles University and University Hospital in Motol*

**prof. Karel Cvachovec, MD, MBA**

*Head of Department of Anaesthesiology and ICM, 2nd Faculty of Medicine, Charles University and University Hospital Motol*

**prof. Jiří Hoch, MD**

*Head of Department of Surgery, 2nd Faculty of Medicine, Charles University and University Hospital Motol*

**prof. Pavel Kolář, Dr., Ph.D.**

*Head of Department of Rehabilitation and Sport Medicine, 2nd Faculty of Medicine, Charles University and University Hospital Motol*

**prof. Milan Kvapil, MD, MBA**

*Head of Department of Internal Medicine, 2nd Faculty of Medicine, Charles University and University Hospital Motol*

**prof. Robert Lischke, MD, Ph.D.**

*Head of Department of Surgery, 1st Faculty of Medicine, Charles University and University Hospital Motol*

**prof. Milan Macek, MD**

*Head of Department of Biology and Medical Genetics, 2nd Faculty of Medicine, Charles University and University Hospital Motol*

**assoc. prof. Miloslav Roček, MD**

*Head of Department of Radiology, 2nd Faculty of Medicine, Charles University and University Hospital Motol*

**Jana Prausová, MD, Ph.D. MBA**

*Head of Department of Radiation Therapy and Oncology of University Hospital Motol*

**prof. Lukáš Rob, MD**

*Head of Department of Obstetrics and Gynaecology, 2nd Faculty of Medicine, Charles University and University Hospital Motol*

**prof. Antonín Sosna, MD**

*Head of Department of Orthopaedics, 1st Faculty of Medicine, Charles University and University Hospital Motol*

**prof. Jan Starý, MD**

*Head of Department of Paediatric Haematology and Oncology, 2nd Faculty of Medicine, Charles University and University Hospital Motol*

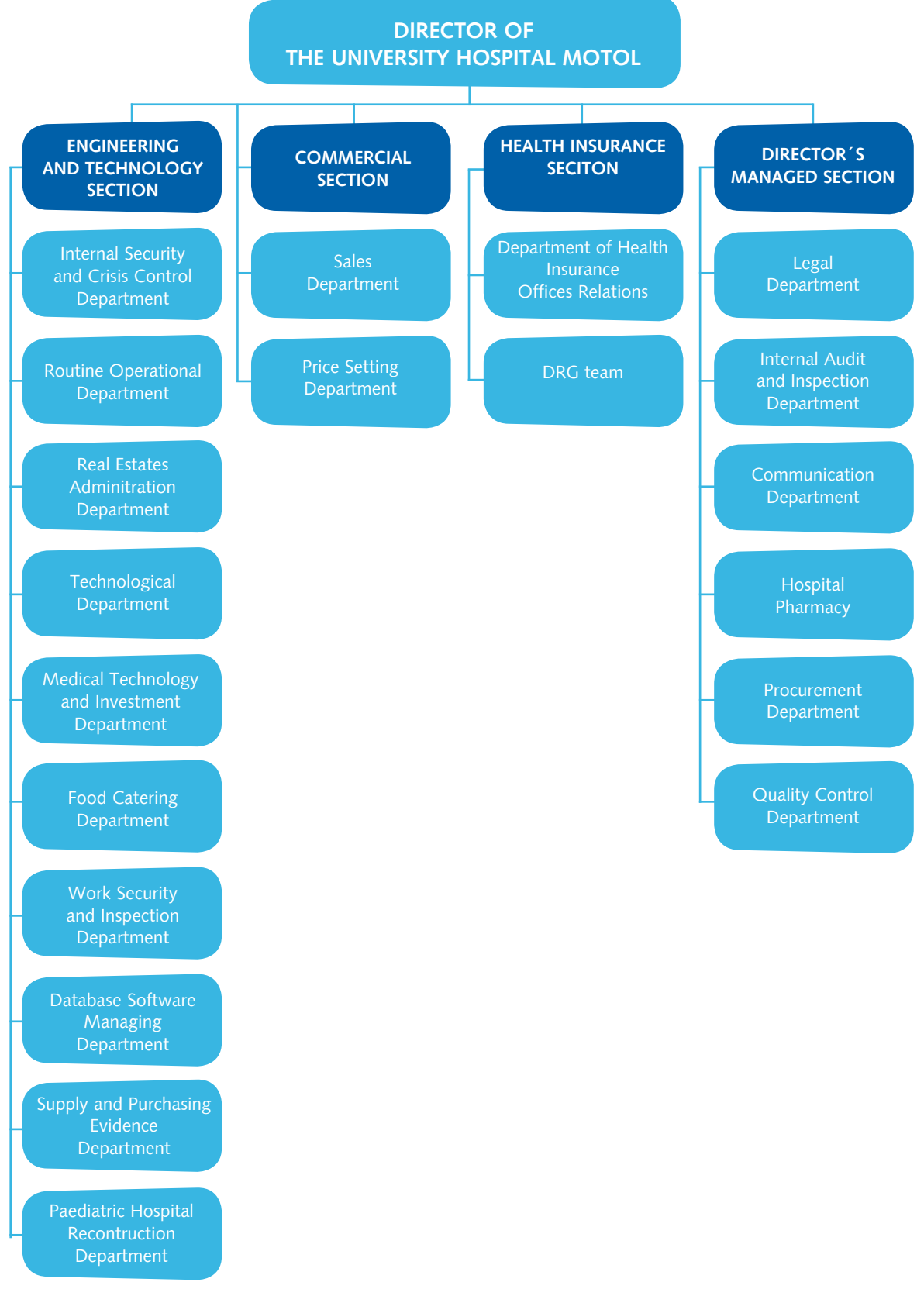
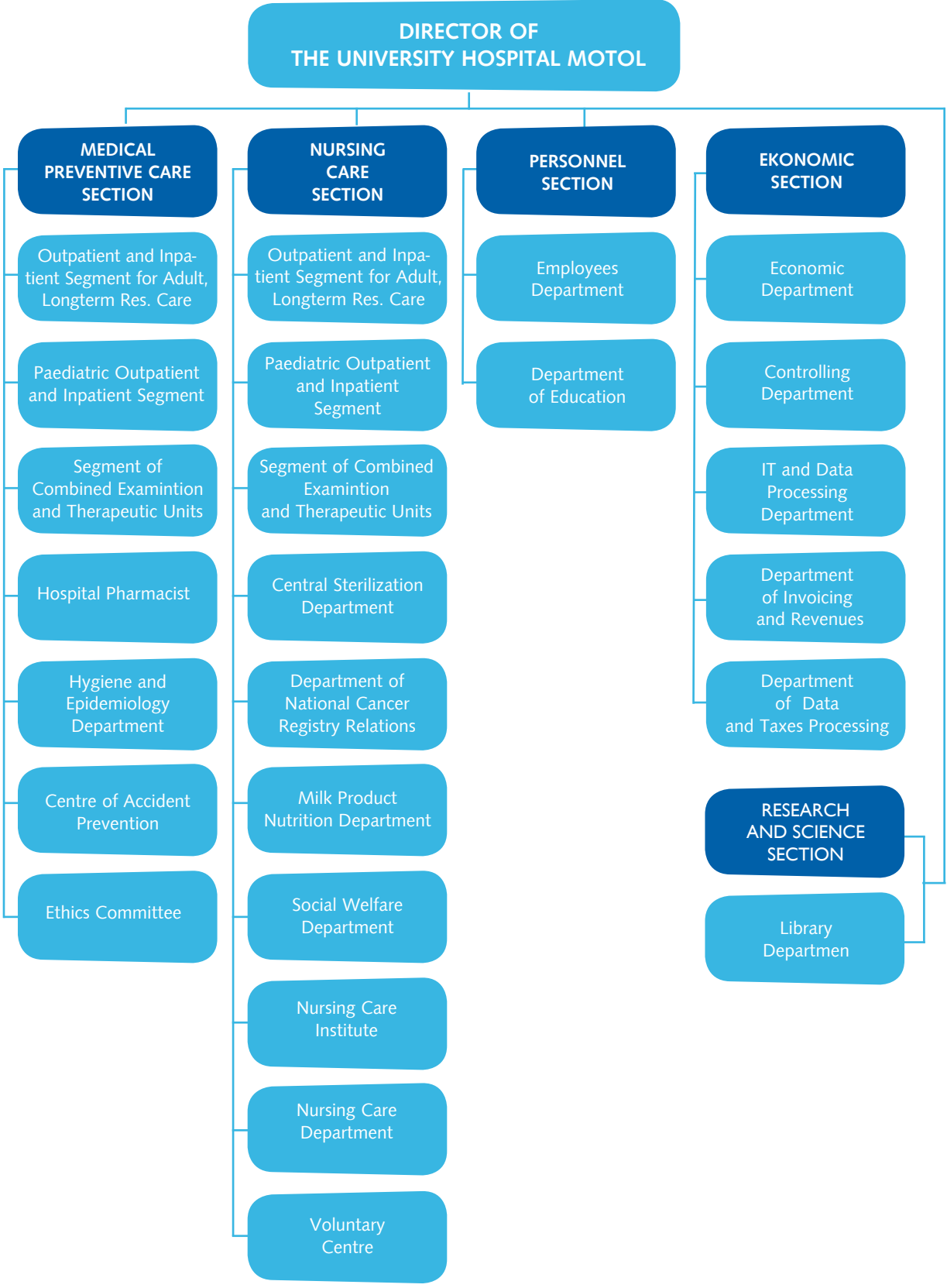
**prof. Jiří Šnajdauf, MD, FEBPS**

*Head of Department of Paediatric Surgery, 2nd Faculty of Medicine, Charles University and University Hospital Motol*

**prof. Tomáš Trč, MD, MBA**

*Head of Department of Orthopaedics, 2nd Faculty of Medicine, Charles University and University Hospital Motol*

# Basic organizational structure





## Basic data to 31. 12. 2012

Hospital Estate Area /m2/	348 000
Assets /in thousand CZK/	11 740 876
Total turnover /in thousand CZK/	7 169 647
Employees /natural persons/	5 642
Employees /employment/	5 015

## Beds

- Of which:	Children	Adults	Total
Standard	428	1 007	1 435
Intensive Care Unit	145	228	373
Acute in Total	573	1 235	1 808
Longterm Residential	-	381	381
Total Beds	573	1 616	2 189

Number of Hospitalisations	78 491
Number of Outpatient treatments	716 366
Number of Treatment Days /excepted Longterm Residential/	468 438
Number of Anaesthesia treatments	38 638
Number of Childbirths	3 390
Death Rate	1,4

## List of Medical Departments

### Paediatric Inpatient Part

#### Department of Paediatrics\*)

Head: prof. Jan Lebl, CSc.

#### Paediatric Cardiocentre

Head: prof. Jan Janoušek, MD, Ph.D.

#### Department of Paediatric Psychiatry \*)

Head: prof. Michal Hrdlička, MD

#### Department of Stomatology \*)

Head: prof. Taťjana Dostálová, MD, MBA

#### Department of Paediatric Surgery \*)

Head: prof. Jiří Šnajdauf, MD, FEBPS

#### Department of Paediatric Haematology and Oncology \*)

Head: prof. Jan Starý, MD

#### - Bone Marrow Transplant Unit

Head: prof. Petr Sedláček, MD

#### Department of Paediatric Neurology \*)

Head: prof. Vladimír Komárek, MD

#### Department of ENT \*)

Head: assoc. prof. Zdeněk Kabelka, MD

#### - Department of Phoniatics

Head: Eva Vymlátílová Ph.D.

### Adult Inpatient Part

#### Department of Obstetrics and Gynaecology \*)

Head: prof. Lukáš Rob, MD

#### - Department of Neonatology with IRCU

Head: assoc. prof. Petr Zoban, MD

#### Department of Surgery \*)

Head: prof. Jiří Hoch, MD

#### Department of Surgery \*\*)

Head: prof. Robert Lischke, MD, Ph.D

#### Department of Internal medicine \*)

Head: prof. Milan Kvapil, MD, MBA

**Department of Cardiovascular Surgery \*)**

Head: *assoc. prof. Marek Šetina, MD*

**Department of Cardiology \*)**

Head: *prof. Josef Veselka, MD, FESC*

**Department of ENT, Head and Neck surgery \*\*)**

Head: *prof. Jan Betka, MD*

**Department of Nuclear Medicine and Endocrinology \*)**

Head: *prof. Petr Vlček, MD*

**Center of Longterm Residential Care Hospital for Elderly**

Head: *Martina Nováková, MD*

**Department of Neurology \*)**

Head: *assoc. prof. Petr Marusič, MD, Ph.D.*

**Department of Spondylosurgery**

Head: *prof. Jan Štulík, MD*

**Department of Orthopaedics \*\*)**

Head: *prof. Antonín Sosna, MD*

**Department of Pneumology \*)**

Head: *prof. Miloslav Mareš, MD*

**Department of Radiation Therapy and Oncology**

Head: *Jana Prausová, MD Ph.D., MBA*

**Department of Urology \*)**

Head: *prof. Marek Babjuk, MD*

**Common Inpatient Sites of Paediatric and Adult Parts****Department of Anaesthesiology and ICM\*)**

Head: *prof. Karel Cvachovec, MD, MBA*

**Department of Chronic Resuscitation and Intensive Care**

Head: *Jiří Procházka, MD*

**Department of Rehabilitation and Sport Medicine \*)**

Head: *prof. Pavel Kolář, Dr., Ph.D.*

**- Department of Rehabilitation**

Head: *Martina Kövári, MD*

**- Department of Pain Research and Treatment**

Head: *Jiří Kozák, MD, Ph.D.*

**- Spinal Unit**

Head: *Jiří Kříž, MD*

**- Department of Sport Medicine**

Head: *assoc. prof. Jiří Radvanský, MD*

**Department of Ophthalmology \*)**

Head: *prof. Dagmar Dotřelová, MD, FEBO*

**Department of Neurosurgery \*)**

Head: *assoc. prof. Michal Tichý, MD*

**Department of Orthopaedics \*)**

Head: *prof. Tomáš Trč, MD, MBA*

**Common Examination and Therapeutic Units****Department of Radiology \*)**

Head: *assoc. prof. Miloslav Roček, MD*

**Department of Clinical Haematology**

Head: *Ivana Hochová, MD*

**Blood Bank Department**

Head: *Květoslava Petrtýlová, MD*

**Department of Biology and Medical Genetics \*)**

Head: *prof. Milan Macek, MD*

**Department of Immunology \*)**

Head: *prof. Jiřina Bartůňková, MD*

**Department of Medical Chemistry and Clinical Biochemistry \*)**

Head: *prof. Richard Průša, MD*

**Department of Medical Microbiology \*)**

Head: *Pavel Dřevínek, MD, Ph.D.*

**Department of Pathology and Molecular Medicine \*)**

Head: *prof. Roman Kodet, MD*

**Department of Psychology**

Head: *Jaroslava Raudenská, Dr., Ph.D.*



**Department of Rheumatology**

Head: Ivana Vavřincová, MD

**Department of Therapeutic Nutrition**

Head: Marieta Balíková

**Transplantation Centre**

Head: Jaroslav Špatenka, MD

**Outpatient Sector****Central Operating Theatres – paediatric part**

Head: Karel Klíma, MD

**Central Operating Theatres – adult part**

Head: Petr Příklad, MD

**Department of Dermatovenerology**

Head: Alena Machovcová, MD, MBA

**Emergency Department for Children**

Head: Marie Mikulecká, MD, MBA

**Emergency Department for Adults**

Head: Jiří Zika, MD

**Department of Pediatric Dermatology**

Head: Štěpánka Čapková, MD

**Department of Primary Care**

Head: Jaroslava Kulhánková, MD

\*) 2nd Faculty of Medicine, Charles University in Prague and Motol University Hospital

\*\*) 1st Faculty of Medicine, Charles University in Prague and Motol University Hospital

## Medical preventive care

### Paediatric inpatient part

#### Department of Paediatrics, 2nd Faculty of Medicine, Charles University and Motol University Hospital

Head physician: Prof. Jan Lebl MD

Senior consultant: Jana Tejnická, MD, MBA

Head nurse: Bc. Jitka Kaplická

**Basic characteristics:**

The department provides diagnostics, treatment and dispensary care for paediatric patients from the whole Czech Republic in almost all branches of internal medicine. In the course of 2012, a total of 4,319 patients were hospitalised there (about 20 % more than in 2011) and the outpatient treatment was provided for 25,065 clients. Eleven patients underwent the kidney transplantation (once from a living donor) and another ten were prepared for the liver transplantation in the IKEM (Institute for Clinical and Experimental Medicine). At the endoscopic operating theatre, 787 interventions were performed and at the department of elimination methods, 4,894 performances were achieved. From 1st July 2012, several specialized centres from the outpatient clinic of the MUH, including Obesity and Comprehensive care center, became a part of the Department of Paediatrics.

**Specialised outpatient centers:**

- Nephrology, including the department for children after TX of the kidneys
- Elimination methods
- Gastroenterology and hepatology including the facility for children after TX of the liver
- Centre for patients with home parenteral and enteral nutrition
- Allergology and pneumology including the department for patients with cystic fibrosis
- Diabetology and endocrinology
- Cardiology including echocardiologic outpatient center
- Rheumatology
- Obesity
- Comprehensive care center
- Anthropology

**New methods and procedures:**

- Nephrology group introduced a method of molecular genetic diagnosis of renal cysts syndrome (DNA analysis of HNF1- beta gene), it also introduced an investigation of circulating permeable factor causing nephrotic syndrome.

It continues with a unique elimination method – immunoabsorption in children.

- Pneumology team continues to diagnose patients with primary ciliary dyskinesia. The CF-working group was awarded by the status of „ Highly specialized centre for healthcare for patients with CF“.
- Gastroenterology team significantly increased the amount of endoscopic examinations. The team prepared 10 patients for the liver TX and it also took care of seven patients on a long-term home parenteral nutrition.
- Diabetology team in cooperation with the Neonatology team introduced continuous glucose monitoring in newborns of diabetic mothers. A database system for monitoring of the control (compensation and treatment) of children’s diabetes in the Czech Republic (called ČENDA) was established.
- Endocrinology group successfully developed a programme for diagnosis of musculoskeletal diseases. A programme for investigations of bone density using peripheral quantitative CT densitometry in patients with CF and IBD was launched.

#### **Unique technological equipment:**

Peripheral quantitative computed tomography (CT) for densitometry Stratec XCT – 2000, Mechanograph Stratec Leonardo.

Body Composition Monitor- unique device for determination of the optimal weight of dialysis patients.

#### **Important event in 2012:**

Diabetology was awarded the title „Centre of Excellence for Pediatric Diabetes“. Members of working group of the Paediatric endocrinology were awarded the prize for the best publication in the field of paediatric endocrinology in 2012. The CF-working group was included in the Clinical Trials Network under the auspices of the European Cystic Fibrosis Society.

#### **Paediatric Cardiac Centre of Motol University Hospital**

*Head physician: Prof. Jan Jan Janoušek, MD*

*Senior consultant of the dept. of Cardiology: Prof. Václav Chaloupecký, MD*

*Senior consultant of the dept. of Cardiosurgery: Prof. Tomáš Tláškal, MD*

*Senior consultant of the dept. Functional Diagnostics: Petr Tax, MD*

*Head nurse: Mgr. Dana Křivská*

#### **Basic characteristics:**

Paediatric Cardiac Centre is the only cardiological and cardiosurgical complex centre for children with a nationwide competence. It is concerned mainly with diagnostics and treatment of congenital cardiac defects in children and it also collaborates with other departments in the treatment of adult patients with congenital cardiac disease. Preference of non-invasive diagnostic procedures (ECHO, MRI, Ct) and primary corrections of defects at an early age are characteristic features of this workplace. In the year 2012 the Paediatric Cardiac Centre

performed 511 surgeries (+ 23 open arterial duct ligation in low birth weight newborns at other workplaces), 320 catheterisations (including 210 interventional catheterisations), 836 patients were hospitalized and outpatient treatment was provided for 5,136 patients. These numbers represent an increase in the amount of surgeries and outpatient examinations compared to previous years, reflecting the relocation of the department to a new room with more suitable capacity. Despite this increase, the number of patients on the waiting list for surgeries is approximately the same - 145 patients at the beginning and 140 patients at the end of the year 2012. As well as in the previous year, the department provided also medical care for foreign patients within the Medevac Humanitarian Programme.

#### **Specialised outpatient facilities:**

- Clinical cardiology
- Electrophysiology and cardiostimulation
- Prenatal cardiology
- Connective tissue disease

#### **New methods and procedures:**

- 3D echocardiography
- percutaneous pulmonary valve implantation
- interventional treatment of native coarctation of the aorta
- Nikaidoh surgery for general transposition of the great arteries
- catheter cryoablation for arrhythmogenic substrates
- standard non-fluoroscopic navigation for catheter ablation of arrhythmias by LocaLisa system
- intracardiac ultrasound (ICE)

#### **Unique technological equipment:**

- Toshiba bipolar sciascopic device
- 3D transesophageal echocardiography Philips
- three-dimensional electroanatomic mapping system of arrhythmias CARTO
- Medtronic CryoCath Cryoablation system

#### **Important event in 2012:**

- Prize for the creative performance of the year: V. Chaloupecký: General recommendations for physical activity and sports in children and adolescents with cardiovascular disease (recommended procedure of the Czech Society of Cardiology).
- Charitable mission of the team both of cardiologists and cardiac surgeons in the Mater Hospital in Nairobi, Kenya (October 2012, surgeries of 12 patients without any loss of life)
- Czech Insurance Company Runtour - participation in running races and a subsequent gift from the Czech insurance Company Foundation, used for

buying of software facilities for magnetic resonance examinations of the heart in children.

### Department of Paediatric Psychiatry, 2nd Faculty of Medicine, Charles University and Motol University Hospital

Head physician: Prof. Michal Hrdlička, MD

Senior consultant: Jiří Koutek, MD

Head nurse: Hana Palkovská

#### Basic characteristics:

This department is the only independent clinical department in this field in the CR. It is concerned with diagnostics, treatment and prevention of mental disorders in paediatric and adolescent patients, it is focused mainly on autism in children, food intake disorders, hyperkinetic syndrome, psychotic conditions and suicidal tendencies in children and adolescents. Another part of the department is the Family Centre, specialising in family therapy. The department is also both pregraduate and postgraduate teaching facility. Specialisation in paediatric and adolescent psychiatry and adult psychiatry are accredited for the postgraduate course of studies. In 2012, a total of 6,050 interventions were performed on the outpatient basis, 1,906 consultancies together with 439 hospitalised patients.

#### Specialised outpatient facilities:

- Family Centre, specialising in family therapy of paedopsychiatric patients

#### New methods and procedures:

- The department further developed especially diagnostics of infantile autism in a form of short-term hospitalisations of pre-school children with their parents in cooperation with other workplaces of the Motol Hospital. In 2010 the department joined the international scientific research consortium COST surveying early diagnostics of disruptions of autistic spectrum and for the project, the Department of Paediatric Psychology acquired a financial subvention from The Ministry of education, youth and sport for years 2011-2014. Last year, a new diagnostic method for autism spectrum disorders - Autism Diagnostic Observation Schedule (ADOS) was put into use. Since 2012, the ADOS has been already routinely used at the clinic and a total of 53 patients were tested throughout the year 2012.
- Complex therapy of food intake disorders; the importance of the department in this field is nationwide and it participates in the research with other workplaces;
- Diagnostics and full therapy of psychotic conditions is of supra-regional importance;
- In 2012, a research on suicidal behaviour and self-harm in children and adolescents, focusing on the detection of risk factors and identical and different characteristics of these autoaggressive acts. The research was supported by

grants from The Ministry of Health of the Czech Republic.

- A research on early markers of bipolar disorder in children at high risk is under way.

### Department of Paediatric Stomatology, 2nd Faculty of Medicine, Charles University and Motol University Hospital

Head physician: Prof. Taťjana Dostálová, MD, MBA

Senior consultant: Milan Hubáček, MD

Head nurse: Mgr. Václava Jirků

#### Basic characteristics:

Paediatric and adolescent stomatology directed at both healthy and handicapped patients – a multidisciplinary cooperation of practical dentist, paedodontologist, parodontologist, prosthetist, orthodontist, dentoalveolar as well as craniomaxillofacial surgeons in treatment of congenital and acquired developmental defects, injuries and tumors. The centre for distraction osteogenesis of the facial skeleton with congenital defects and articular central for total endoprostheses of the jaw articulation. In cooperation with the Neurosurgery, the Department of Paediatric Stomatology provided treatment of inborn and additional defects of splanchno-neurocranium. A development of a method of microscopic craniomaxillofacial surgery is under way.

In 2012, a total of 33,951 outpatient examinations and 953 one-day surgical interventions / 519 dental rehabilitations under total anesthesia and 434 surgical procedures/ were performed at the department. A total of 828 patients were hospitalised at the inpatient section and 1,125 surgeries were performed there, including 310 dental rehabilitations in handicapped patients under total anesthesia.

#### Specialised outpatient facilities:

- Maxillofacial surgery /with specification on distractions of congenital defects/
- Diseases of the jaw articulation
- Oncology
- Diseases of the salivary glands in children
- Prosthetics
- Implantology
- Parodontology
- Orthodontics

#### New methods and procedures:

- use of resorbable osteosynthetic materials for injuries and in reconstructive surgeries in children
- use of new augmentation materials (MEDPOR)
- care for patients with clefts (general stomatological care)



- orthognathic surgical methods including special counselling and a 3D reconstruction
- dental implantology and guided bone regeneration with a special reference to young handicapped patients
- treatment of the teeth of handicapped patients under general anaesthesia and analgosedation
- surgery of the jaw articulation including subtotal and total endoprosthesis (TEP TMK)
- distraction of the facial skeleton in children with congenital defects

#### **Unique technological equipment:**

- Diagnocam 2170 /digital camera system for the diagnosis of dental lesions /
- Beefill /special device for endodontics/

#### **Important event in 2012:**

- Prize for the best poster Laser Florence 2112 - 26th International Congress Laser Medicine Er: Yag and Cth: Yag Laser Radiation Contact versus Noncontact Enamel Ablation Laser in Medical Science Impact Factor: 2004 - 2012, Vol 27, No 6, p.

### [Department of Paediatric Haematology and Oncology, 2nd Faculty of Medicine, Charles University and Motol University Hospital](#)

*Head physician: Prof. Jan Starý, MD, PhD*

*Senior consultant: Vladimír Komrská, MD*

*Senior consultant: Vratislav Šmelhaus, MD*

#### **Basic characteristics:**

The work of the department is focused on diagnostics, treatment and research of oncological diseases in childhood, benign diseases such as anaemia, haemorrhagic conditions and congenital coagulation disorders (haemophilia). Further diseases requiring bone marrow transplantation such as congenital disorders of the immune system or metabolic defects are treated here.

In 2012, a total of 14,045 examinations and treatments were performed at the specialised outpatient facilities, 2,764 patients with oncological diseases and 1,337 patients with benign diseases were treated. Newly were diagnosed: 193 children with malignant solid tumors, 45 children with leucaemia, 285 patients with benign tumors, 552 children with non-oncological disease. The total number of hospitalised patients was 2,164 plus 1,368 relatives who accompanied them.

Totally, 35 operations of bone marrow were performed - 18 from donors not related to the patient (including 4 cord blood grafts), 7 bone marrow were offered from siblings and 10 operations were autologous.

#### **Specialised outpatient facilities:**

- Oncology
- Dispenzarisation after treatment of solid tumors
- Bone tumor centre
- Clinic for hemangiomas
- Haematology outpatient clinic
- Haematology stationary ward
- Congenital disorders of blood coagulation and haemorrhagic conditions
- Care for patients after bone marrow transplantation

#### **New methods and procedures:**

- Introduction of the SNP array method for comprehensive genetic analysis of neuroblastoma in order to include patients in the treatment scheme (a condition for our participation in the international study).
- Introduction of a method for detection of residual disease in adult patients with mantle cell lymphoma for a nationwide study - in cooperation with the Department of Pathology and the Molecular Medicine of the MUH and the Department of Internal Medicine of the General University Hospital in Prague.
- Introduction of the BRAF gene mutation analysis and a method of MLPA (VHL, RET and SDHX gene status) in pheochromocytoma.

#### **Unique technological equipment:**

- Ion Personal Genome Machine<sup>®</sup> (PGM<sup>™</sup>) Sequencer- a table sequencer of a new generation working on the principle of massively-parallel sequencing
- ThermoBrite- hybridization device, in particular for FISH and CGH
- Proox Model C21 – a system for cell cultivation under controlled oxygen concentration
- xCELLigence- a device for monitoring of cell growth in vitro in real time

#### **Important event in 2012:**

- The employees of the department organized an international conference of The European Group for Blood and Marrow Transplantation (EBMT) „The 8th Meeting of the EBMT Pediatric Diseases and Inborn error WP“, 7 – 9th June in Prague and „The 6th International Symposium on MDS and Bone Marrow Failure Syndromes in childhood“, 7 – 9th November in Prague. Both conferences were attended by approximately 200 experts from Europe and also from other world countries.
- Publishing activity of the employees of the department in 2012: 78 publications about the overall IF = 315.934 were published
- A study, which was created in European laboratory cooperation within the EuroFlow project and whose author is Assist. Prof. Kalina, an employee of the Department of Paediatric Haematology and Oncology (Kalina T, Flores-Montero J, van der Velden VH, et al. EuroFlow standardization of flow

cytometer instrument settings and immunophenotyping protocols. Leukemia. 2012 Sep;26(9):1986-2010.) was published in the prestigious journal Leukemia. It deals with the standardization of examination by flow cytometry in the diagnosis of hematological malignancies.

## Department of Paediatric Surgery, 2nd Faculty of Medicine, Charles University and Motol University Hospital

Head physician: Prof. Jiří Šnajdauf, MD, FEBPS

Senior consultant: Richard Fryč, MD

Head nurse: Mgr. Ilona Mayerová

### Basic characteristics:

In frame of specialised skills – neonatal surgery, thoracic surgery, oncosurgery, proctology, urology, surgery of the liver, portal hypertension, biliary tract, extrophy of the urinary bladder and polytraumas in children – the department provides care for paediatric patients from the whole country and super-counselling also for foreign patients.

In 2012, 2,741 patients were hospitalised there in total, of which 2,116 were operated. The total number of outpatient children was 16,223 (including 6,440 children in constitutional emergency service).

### Specialised outpatient facilities:

- Thoracic surgery
- Oncosurgery
- Surgery of the liver, biliary tract and pancreas
- Neonatal surgery
- Urology
- Proctology
- Traumatology
- Burns
- Paediatrics
- Consultation for home parenteral nutrition
- Psychological consultation centre

### New methods and procedures:

- Introduction of new innovative method of esophaegal lengthening in congenital esophaegal atresia (successfully performed in 5 patients). The stubs are being extended outside the thoracic cavity. Doctors managed to extend and maintain patient's own esophagus instead of replacing the rests of esophagus by stomach.
- In the intersex surgery was in two patients used a technique of complete contraction of urogenital sinus, i.e. the urethra and vagina in vaginoplastice (external vaginal opening) instead of a lengthy separation of both structures.
- Laparoscopy – pyeloplasty, splenectomy

### Unique technological equipment:

- Duet Encompass – a modern video device for urology and the EMG of the pelvic floor
- Thoracoscope
- CUSA
- New harmonic scalpel
- Ligasure coagulation

### Important event in 2012:

- A workshop with the video from the operating room on the topic: Treatment of the vesicoureteral reflex by endoscopic injection Vantris under the urethral opening, took place on 1st June 2012 there. Surgeries were conducted by prof. Chertis from Jerusalem, Israel. Twelve physicians from the Czech Republic and Poland took part in the workshop.

## Department of Paediatric Neurology of 2nd Faculty of Medicine, Charles University and University Hospital in Motol

Head physician: Prof. Vladimír Komárek, MD

Senior consultant : Věra Sebroňová, MD

Head nurse: Zlatica Pitoňáková

### Basic characteristics:

The department provides diagnostics and treatment of paediatric patients from the whole Czech Republic in all branches of paediatric neurology and it serves as both a pregraduate and postgraduate teaching workplace. A part of the department are standard beds, ICU beds of a lower type, outpatient clinics, laboratories for electrophysiology and specialized centres. In 2012, a total of 1,228 children were hospitalized there out of 1,580 admissions. At the outpatient facilities 16,372 clinical investigations were provided. In electrophysiology laboratory, 5,972 examinations including 375 long-term video-EEGs were performed.

### Specialised outpatient facilities:

- Centre for epilepsy and epilepsy surgery
- Centre for hereditary neuropathy
- Center for hereditary ataxias
- Neuromuscular consulting centre
- Centre for neurocutaneous diseases
- Demyelination consulting unit
- Centre for botulotoxin application
- Clinic for sleep disorders in children

### New methods and procedures:

- New investigative and therapeutic procedures, particularly in anti-NMDA-R

encephalitis were introduced. In addition to the investigation of antibodies and conventional immunosuppressive therapy of the I. and the II. line, our department in cooperation with hematologists and immunologists applied with a surprisingly positive effect a new medicine of the III. line as the world's first department.

- The main predictors of successful epilepsy surgery were determined and new preoperative procedures in children with refractory epilepsy were introduced on the basis of the international grand-aided project: Contact Programme „Evaluation of the importance of ictal SPECT in the diagnosis of epilepsy surgery candidates“, now successfully completed. The project was being solved by the department between years 2008-2012 together with the Brain Institute, Miami Children's Hospital in Florida.
- The DNA analysis of the SPRED1 gene in patients with NF1 was introduced in patients with TSC and a project of early diagnosis and targeted treatment of complications of rapamycin analogs to influence the development of the SEGAs and secondary epileptic encephalopathy was introduced in frame of the Neurocutaneous programme in cooperation with the Department of Biology and Medical Genetics.
- The neuromuscular project now includes an experimental study of the treatment of muscular dystrophy of the type: Duchenne / Becker (DMD / BMD) - exon skipping 5.
- In the sleep laboratory, a comprehensive video-EEG monitoring with online esophageal pH-metry was conducted and the CPAP system was implemented in patients with severe obstructive sleep apnea syndrome.
- Important discoveries of the molecular cause of the two neurological diseases - HSAN (SPTLC2 gene) and PCH1 - OPCA + SMA and a new diagnostic testing of 3 new genes - BSCL2, Marvel2, EXOSC3 were introduced.
- In cooperation with the Department of Imaging Methods, the investigation of MRI diffusion tractography (DTI) was conducted not only in children with dysphasia and refractory epilepsy, but also in preoperative investigations in epilepsy surgery.

#### **Unique technological equipment:**

- Video-EEG system for the pre-operation monitoring of 128 channels in children with refractory epilepsy, polysomnography system with on-line esophageal pH measurement;

#### **Important event in 2012:**

- 15th anniversary of the establishment of the unique DNA laboratory for investigation of Charcot-Marie-Tooth (CMT) hereditary neuropathy, which helped to clarify the causes of CMT in 1,486 patients from 757 families with mutations of different genes.
- The team of Professor Seeman received for their medical research and development the Honourable prize from the Minister of Health of the Czech Republic for the year 2012 (grant. NS/10552-3).

#### **Department of E.N.T., 2nd Faculty of Medicine, Charles University and Motol University Hospital**

*Head physician: Assist. Prof. Zdeněk Kabelka, MD*

*Senior consultant: Michal Jurovčík, MD*

*Head nurse: Adriana Roškaňuková*

#### **Basic characteristics:**

The department is concerned with diagnostics and both surgical and conservative treatment of the E.N.T.- related diseases in children from birth up to 18 years of age. As a super-consulting workplace, it provides medical care for children with diseases difficult to diagnose and treat from the whole country. The Centre for cochlear implants in children is a part of the phoniatic section of the department. The department is still the only place in the Czech Republic that performs the cochlear implant surgeries in children. In cooperation with a plastic surgeon, the department provides surgeries for newborns with cleft face defects.

In 2012, 1,986 surgeries were performed here, 2,190 patients were hospitalised and outpatient treatment was provided for 16,190 patients.

The Phoniatic section and rehabilitation centre for cochlear implants in children is another part of the E.N.T. department. This workplace is focused mainly on selection of candidates for cochlear implants in children and on pre-operative and longterm postoperative care for patients with cochlear implants for who it provides full phoniatic, logopedic and psychological care including programming of speech processors. Further it actively ensures supplementary logopedic rehabilitation in the place of their residence throughout the whole Czech Republic. The head of this removed workplace is Eva Vymřáčilová, Ph.D.

#### **Specialised outpatient facilities:**

- Otolaryngology – in the Centre for cochlear implants
- Solution of developmental defects of the neck and the head
- Monitoring of glandular swelling
- Phoniatic outpatient clinic
- Logopedic (speech therapy)
- Thyroidology
- Diagnosis of GERD

#### **New methods and procedures:**

- A methodology for measuring of esophageal impedance, which extends options of the current pH-metry;
- Application of the BAHA system in clinical practice, it is a unique application of bone hearing aid, a part of it is imbedded into the skull behind the ear. After its incorporation (osseointegration) a special external hearing aid can be connected, it provides significantly better auditory perception for indica-



- ted patients than conventional bone hearing aids.
- The introduction of a high-frequency tympanometry in routine treatment of the tympanic cavity in the youngest children, where conventional devices show false negative results;
  - Sleep monitoring in apnoeics / PSG /;
  - Custom Sound Suite 1.0 - a new type of processor tuning and recording of the implant functions- was introduced. A new version of Custom Sound Suite 1.3 with extended functions was used.
  - A diagnostic method on the basis of DPOAE – CochleaScan and the use of the bone (BC) module in technology of the SSEP measurement were introduced. Both methods significantly contribute to refined acoustic diagnostics in youngest children.
  - The programme of early detection of secretory otitis in newborns with cleft defect; it is a study with a multi-branch participation. The first results confirm a hypothesis of presence of a middle secretion in patients with cleft defects in early postpartum period.
  - The introduction of wireless module for automatic pre-operative measurement of STR and NRT for cochlear implantations.

#### **Unique technological equipment:**

- Impedancemetry device
- Polysomnograph
- Maico MI 34, a high frequency tympanometer
- CO2 Laser with a mikromanipulator
- The newest type of Bienair drill
- CochleaScann on the DPOAE basis – a new technology of objective audiometry
- BioMarker device – possibility of objective measurement of cognitive abilities in paediatric patients
- NRT/Neural Response Telemetry/ module in pre-operative measurement of the C1 function
- Screening AABR device
- Shaver / microdebrider / with an attachment to pharynx and larynx
- Harmonic scalpel

#### **Important event in 2012:**

- Methodical instruction for newborn hearing screening and the subsequent care for hearing impaired was approved by the Ministry of Health of the Czech Republic;
- 8 publications / 7x in peer-reviewed journals, 1x with IF /;
- In cooperation with the Institute of Postgraduate Medical Education, organization of two day courses „What life brings in the field of paediatric E.N.T.“ for pediatricians and otolaryngologists, March and November 2012.

## COMMON INPATIENT DEPARTMENTS OF PAEDIATRIC AND ADULT PARTS

Department of Anaesthesiology and ICM, 2nd faculty of Medicine, Charles University and Motol University Hospital

Head physician: Prof. Karel Cvachovec, MD, MBA

Senior consultant: Tomáš Vymazal, MD

Head nurse: Mgr. Taťána Maňasová

#### **Basic characteristics:**

The department provides anaesthesiological and resuscitation care for both paediatric and adult patients in accordance with the needs and requirements of the MUH. With its number of physicians, other nursing staff as well as the range of its activities it is the biggest workplace in the CR. This workplace provides a specialized care requested by health centres of a lower type in the whole republic. It is a leading and coordinating centre for the postgraduate education of doctors and nurses, it provides training for anaesthesiologists and other specialists. It also ensures teaching of students in the Master´s degree programme and the Bachelor´s course at 2nd Faculty of Medicine and in international educational projects.

In 2012, a total of 1,382 patients were hospitalised there, of which 794 patients were adults, 550 children and 38 patients (both children and adults) needed chronic intensive care. There were performed a total of 38,638 anaesthesiological interventions, including 11,397 interventions in children.

#### **Specialised outpatient facilities:**

- In the paediatric part there is a pre-anaesthesiological unit, that examined 4,753 patients.

#### **New methods and procedures:**

- Wide-range use of echocardiography in patients undergoing cardiosurgical operation;
- Latest ventilation techniques using transpulmonary pressure measurements
- Extension of sonographic techniques in nerve block anesthesia and safe vascular inputs ensuring in adults and children
- Introduction of sonography in early diagnosis of bleeding into cavities in traumatized patients
- Extension of hemocoagulation investigation at the bedside - TEG, ROTEM for early diagnosis of coagulopathy
- Introduction of ECMO support in conditions of serious pulmonary failure
- Introduction of IABP as a method of circulatory support outside cardio-anesthesia

- Continuous replacement of the renal function together with haemoabsorption (CPFA);
- Use of videolaryngoscope method in case of difficult intubation, including one-use intubation instruments and subserviences;
- Use of combined neuroaxial blockades in replacements of the major joints (hip, knee), including an education for employees in specialized workplaces;
- Routine use of neuromuscular blockade reversal after anesthesia
- Use of non-invasive ventilation techniques for the treatment of breathing insufficiency both in children and adults;
- Using of 10% solution of sodium chloride in the therapeutic protocol in the brain edema;
- Routine monitoring of cerebral oxymetry during surgeries in extracorporeal circulation and using of deep hypothermia;
- Pre-operative preventive administration of Levosimendan to manage the perioperative heart failure;
- Comprehensive therapeutic protocol to manage the diastolic heart failure;

#### **Important event in 2012:**

- Launching of reconstruction of the adult inpatient department
- Consolidation of personnel composition and acquiring of the scientific degree Ph.D
- A successful end of the internal grant of the MUH
- A number of scientific publications in peer-reviewed and impacted journals

Department of Chronic Resuscitation and Intensive Care is a part of the department of Anaesthology and ICM, 2nd Faculty of Medicine, Charles University and Motol University Hospital, since 1st April 2010

#### **Department of Chronic Resuscitation and Intensive Care**

*Senior consultant: Jiří Procházka, MD*

*Head nurse: Blanka Eliášová*

#### **Basic characteristics:**

Intensive care for patients with longterm ventilation, disconnecting from the ventilator, stabilisation of haemodynamics, restoring of the internal environment, neurorehabilitation, physio- and ergotherapy, recondition with mobilisation; artificial nutrition, basal stimulation.

#### **Specific features:**

- Consulting services for patients and their families in crisis, training of alternative communication, development of a programme for domestic artificial lung ventilation (DALV) and dispensary supervision in patients with DALV;
- Training for domestic enteral nutrition – PEG, training of patients for the care of chronic tracheostoma and tracheostomal cannula;

- Acute consulting service for emergencies in the building 21; training of physiotherapists in the Bachelor's course specialised in patients who need chronic resuscitation and intensive care.

#### **Unique technological equipment:**

- Miniature capnometer for monitoring of the training of spontaneous breathing and outpatient monitoring of patients with DALV;
- Electrolarynx for the training of alternative voice in tracheostomy.

#### **Department of Rehabilitation and Sport Medicine, 2nd Faculty of Medicine, Charles University and Motol University Hospital**

*Head physician: Prof. Pavel Kolář, Ph.D*

*Senior rehabilitation physiotherapist: Mgr. Kateřina Míková*

Department of Rehabilitation, Spinal Unit, Section of Sport Medicine and Pain Treatment and Research Centre are parts of the department.

#### **1. Department of Rehabilitation**

*Head physician: Martina Kővári, MD*

*Head nurse: Bc. Hana Jirků*

#### **Basic characteristics:**

The department is concerned with rehabilitation for adult and paediatric patients with vertebrogenic disorders, neurological and internal diseases, after orthopaedic surgeries and injuries of the locomotor apparatus and spinal surgeries. It also provides some special rehabilitation programmes. In 2012, 615 patients were hospitalised at the inpatient section of the department and its outpatient part examined 2,773 new patients.

#### **Specific features of the workplace:**

Some physicians and physiotherapists participate in interdisciplinary super-consulting programmes for patients with cystic fibrosis, DMO (poliomyelitis), hereditary motoric-sensitive neuropathy, swallowing disorders, faecal incontinence and spasticity. Specialised prosthetic care and prescription of suitable aids for patients after amputations in frame of the whole MUH.

Some physiotherapists participate in the multidisciplinary team of the Neurootology, specialized in patients with dizziness and disorders of stability.

#### **New methods and procedures:**

- In cooperation with the Department of Neurology, the evaluation of autonomous neuropathy and physical condition of patients with hereditary neuropathy,
- Measurement of changes of the activity of the oesophagus with consequent

changes of afferentia in the locomotor system (in cooperation with the Department of Surgery of 1st Faculty of Medicine and Bohunice hospital, a part of the University Hospital in Brno).

- Use of biofeedback (elektro-tactil language stimulation) in patients with cerebellar impairment.
- Use of biofeedback in patients with faecal incontinence (in cooperation with the Department of Gastroenterology)
- Launching of a new electrophysiology laboratory, providing the EMG examination and the examination of evoked potentials.
- In the fall of 2012, a new regional centre for spasticity was launched, created in collaboration with the Department of Neurology; newly, botulinum toxin is being applied at the department.
- Rehabilitation programme of swallowing disorders created in collaboration with the Department of ENT has been successfully developed.

#### **Unique technological equipment:**

- Use of spirometer for measurement of occlusal pressures;
- „Brain port“ device for diagnostic of vertiginous conditions;
- „Balance master“ device for the therapy of stability disorders and vertiginous conditions;

#### **Important event in 2012:**

- Active participation of the employees of the department in the national congress of neurology and rehabilitation international symposia (e.g. 1st Joint World Congress of ISPGR and GaiT and Mental Function, Trondheim, Norway).
- Historically the first organization of a postgraduate examination in the field of rehabilitation and physical medicine at our department.
- Organization of a conference on the anniversary of prof. Kučera, MD. and prof. Máčka, MD.
- Professorship of Ass. Prof. PaedDr. P. Kolář, Ph.D.
- Significant publications in scientific international magazines such as: Neuro-Rehabilitation, Journal of Orthopaedic and Sports Physical Therapy, Journal of Neurological Science.

## **2. Spinal unit**

*Head physician: Jiří Kříž, MD*

*Head nurse: Bc. Hana Jirků*

#### **Basic characteristics:**

Spinal unit provides therapeutic and rehabilitation care for patients in the subacute stage after spinal injuries and also for patients in the chronic stage after the injury of the spinal cord with health complications. In 2012, 66 patients after acute spinal lesion and another 35 spinal patients in the chronic stage and with acute complications were hospitalised here, and 230 patients were

treated on the outpatient basis.

#### **New methods and procedures:**

- Development of an electronic form in accordance with the International standards for neurological classification of spinal cord injury.
- Introduction and testing of a form for assessing of spasticity in spinal patients

#### **Unique technological equipment:**

- Vibrostimulation device, used in cooperation with the Department of Urology.
- Medelec Synergy EMG / EP device for electrophysiological laboratory of the Department of Rehabilitation and Sport Medicine.

#### **Important event in 2012:**

- Organization of the 2nd Course for examination of a spinal patient  
8. – 9th June 2012

## **3. Department of Sport Medicine**

*Head physician: Ass. Prof. Jiří Radvanský, MD*

*Head nurse: Bc. Hana Jirků*

#### **Basic characteristics:**

It focuses on consulting and counselling activities in patients with an excessive or inadequate physical exercise regimen, functional ballast diagnostics in paediatric patients after heart defects surgeries and in adults before elective surgeries. It provides special sport investigations and superconsiliary activities in course of licensing for racing sports.

It also provides superconsiliary activities in the field of comprehensive lifestyle changes including

nutrition counseling and physical exercise programme in patients with civilisation diseases (metabolic syndrome, obesity, diabetes mellitus) and pediatric patients with chronic diseases, restricting sport activities.

The department performs specialized load testing before the movement therapy, under the leadership of physiotherapists.

There were performed 2,060 outpatient and consiliary examinations, 1,600 sport examinations and 2,950 hours of controlled physical activity of patients

#### **New methods and procedures:**

- Diagnosis of safe load intensity in individualized physical activity and determination of energetic strain of motion for motor-disabled persons
- Analysis of body composition by the bioimpedance method
- Determining of the risk of postoperative complications and elective surgeries by spiroergometry with the help of a winch



**Unique technological equipment:**

- Analyser of breathing gases exchange with differential paramagnetic sensor

#### 4. Centre for Pain Treatment and Research

Head physician: Jiří Kozák, MD., PhD.

Head nurse: Lenka Gavendová

**Basic characteristics:**

A comprehensive therapy of chronic pain, using therapeutic methods from psychological to highly sophisticated instrumental methods, super-consulting services in frame of the MUH as well as the whole country. In 2012, a total of 7,384 patients were treated, including 20 using of neuromodulation techniques and 13 radiofrequency methods.

The workplace has a multidisciplinary character in care of chronic pain, it is one of the six neuromodulation centres in frame of the Czech Republic (a reference center), it is also a postgraduate educational workplace in the field of algiology and neuromodulation techniques. The department runs a consulting telephone service „Line against pain“. Primarily, the department develops neurostimulation technology (CSC) and radiofrequency procedures in the treatment of painful conditions.

**Important event in 2012:**

- Active participation in the Czech – Slovak dialogues on pain – Jindřichův Hradec
- Organization of the „Prague neuromodulation day „ in the Na Homolce Hospital
- Publications – Pain - algiology monograph, second revised edition
- Scientific articles published in medical journals, 5 articles in Czech and one in foreign journals

#### Department of Ophthalmology, 2nd Faculty of Medicine, Charles University and Motol University Hospital

Head physician: Prof. Dagmar Dotřelová, MD, FEBO

Senior consultant: Milan Odehnal, MD, MBA

Head nurse: Bc. Jana Králíčková

**Basic characteristics:**

Department of Ophthalmology provides preventive, diagnostic, conservative and surgical care for patients from the birth till old age. In the field of paediatric ophthalmology, the department serves as a superconsultant centre in the region of the Czech Republic, but also in Central and Eastern Europe. In the field of adult ophthalmology it provides a wide spectrum of up-to-date modern diagnostic-therapeutic interventions, including cataract and vitreo-retinal surgery. The department is an accredited institution in the field of specialized

medical education.

In 2012, 1,080 surgeries and 520 examinations were performed in hospitalised children, 410 surgeries in hospitalised adult patients. In total, more than 30,000 patients were treated here and over 2,000 patients were cured for the injuries of the eye and its vicinity. The most frequent surgical interventions were cataract operations in adults, operations of strabism and examinations of children in general anaesthesia.

**Specialised outpatient facilities:**

- Paediatric ophthalmology
- Centre for immature babies with retinopathy
- Centres for strabology, glaucoma, cataract and oncology
- Adult ophthalmology
- Vitreoretinal centre, Centre for diabetology, cataracts, glaucoma and for plastic surgery
- Orthopedic outpatient centre

**New methods and procedures:**

- Confocal microscopy for observations of structures of cornea
- Combination of cryopexy and laser photocoagulation of the retina is a new form of the treatment for atypical forms of retinopathy in immature infants
- Application of multifocal toric lens
- Modern outpatient treatment of glaucoma by selective laser trabeculoplasty
- Surgery of eyelid implants in children with lagophthalmus of European importance

**Unique technological equipment:**

- Retcam – it allows to preserve and reproduce a three-dimensional image of the retina
- Confoscan - confocal microscope, which allows monitoring and studying of corneal endothelial cells „ in vivo“

**Important event in 2012:**

- The Department of Ophthalmology received a permanent license to ophthalmology training in the field of strabismus and binocular vision at the national level. The licence was awarded by the Scientific Council of the Czech Medical Chamber and the presidency of the Committee for Pediatric Ophthalmology.
- The department has become a centre for application of Lucentis and Osurdex medicine in the treatment of macular edema in diabetic retinopathy and after retinal vein occlusion
- The department has been involved in the institutional support of the MUH by the new project „Changes of corneal nerve fibers in diabetic patients: screening of changes by using corneal confocal microscope.“

## Department of Orthopaedics, 2nd Faculty of Medicine, Charles University and Motol University Hospital

Head physician: Prof. Tomáš Trč, MD, MBA

Senior consultant: Daniel Rybka, MD

Head nurse: Helena Hlásková

### Basic characteristics:

The department provides diagnostic and therapeutic care in terms of orthopaedics and traumatology for both paediatric and adult patients not only in the catchment area, but also superconsiliary and consulting services in the whole Czech Republic.

In 2012, a total of 1,267 paediatric and 2,540 adult patients were hospitalised here. 1,080 interventions in paediatric patients and 2,547 interventions in adults were performed here, in total the department of Orthopaedics performed 3,627 surgeries. The treatment on an outpatient basis was provided for 19,628 children and 14,315 adult patients, in total the department of Orthopaedics examined 33,943 outpatient patients.

The department further participates in the development and implementation of new methods in orthopaedics, traumatology, sport medicine and new biotechnologies used in the treatment of the locomotor apparatus (cartilages, ligaments, tendons and bones). At the present time, the employees of the department are investigators of several grant projects at the national as well as international level.

### Specialised outpatient facilities:

- Onco-orthopaedics
- Scoliosis
- Sport traumatology for both children and adults
- Specialised arthroscopic interventions
- Neurogenic defects
- Congenital skeletal defects
- Primary and revise endoprosthetics
- Complex surgery of the humeral joint
- Arm surgery (specialized for subsequent care)

### New methods and procedures:

- Replacement of the hip bone and humerus (shoulder) of the „resurfacing“ type – the so called „sparing surgery“ in which only the damaged part of the joint surface is replaced
- Surgery of the hip bone and knee by means of the so called „mini-invasive approaches towards the hip joint
- Use of the navigation in endoprosthetic surgery of the knee and hip joint, including the methodology
- Prolongation of long bones by using of the self-adjustable intramedullary ISKD nail

- Modelling of the head by navigated hip luxation for the treatment of femoroacetabular impingement
- Transplantation of cartilages using cultured chondrocytes
- Anterior cruciate ligament replacement with hamstring tendons, using the double BTB graft method
- Use of mesenchymal stem cells in the treatment of diseases of articular cartilages, combination of the ASK intervention of microfractures and application of a joint blockade
- Use of autologous blood plasma (growth factors obtained by the thrombocyte centrifugation in the treatment of bone cartilage degeneration (PRGF)
- Use of the PRGF cell method in the treatment of enthesopathies
- Rupture of the rotator cuff of the humerus treated with the help of PRGF
- Arthroscopic surgery of hip, ankle and wrist joint
- Complex therapy of foot deformities in children and adults

### Unique technological equipment:

- Footplate – a device for diagnosis of foot arch injury
- Modern surgical instrumentation for navigated surgery of large joints
- The latest type of arthroscopic device
- Songraph for diagnostics of congenital hip dysplasia and other bone diseases
- Centrifugation system of blood plasma in order to obtain the PRGF

### Important event in 2012:

- The head of the department Prof. Tomáš Trč, MD, MBA. was appointed professor in June 2012.
- Ass. Prof. Alena Schejbalová, MD, PhD. successfully completed the habilitation at the Scientific Council of the 2nd Faculty of Medicine, Charles University and was appointed associate professor.
- The head of the department Prof. Tomáš Trč, MD, MBA. received a honorary membership from the Society of Czech Physicians on the occasion of the 150th anniversary and became a member of the committee.

## Department of Neurosurgery, 2nd Faculty of Medicine, Charles University and Motol University Hospital

Head physician: Ass. Prof. Michal Tichý, MD

Head nurse: Gabriela Šuláková

### Basic characteristics:

The department is focused on specialised neuro-surgical acute or planned care for paediatric and adult patients; it provides consulting services in the whole range of its specialisation. It also provides education for pre- and postgraduate study courses and scientific and research activities. In 2012, a total of 1,224 patients were hospitalised in both paediatric and adult parts, 1,159 patients were operated and the outpatient treatment was provided for 5,112 patients.

**Specialised outpatient facilities:**

- Neurosurgery for children
- Neurosurgery for adult patients

**New methods and procedures:**

- Measurement of neurophysiological functions in surgeries of brain and spinal cord with the help of a multimodal device, intraoperative stimulation of brain centers in young children;
- Continuing of programmes in solution of age-limited tumors and congenital defects of the CNS;
- Continuing of implantation of baclofen pump for the treatment of generalised spasticity;
- Continuing of the treatment programme for refractory epilepsy – resection epileptosurgical surgeries and implantation of vagal nerve stimulators;
- Orientation towards mini-invasive methods in the treatment of degenerative diseases;
- Vertebroplasty and stentoplasty in the therapy of osteoporotic spinal fractures in cooperation with the Department of Imaging methods and the Department of Rehabilitation and Sport Medicine;
- Radiofrequency neuromodulation used in painful conditions (vertebral, peripheral nerves);
- Using of highly specialized multimodal monitoring in patients with craniocerebral injury in the field of neuro-traumatology;
- Within the neurovascular programme, the surgical programme and endovascular techniques are both developed in cooperation with the Department of Imaging methods. Also decompressive craniectomy in patients with ischemic diseases is performed in collaboration with the Department of Neurology.
- Working out and using of frame and frameless stereotaxy- use in case of implementation of deep brain electrodes and brain biopsies.

**Unique technological equipment:**

- Electromagnetic neuronavigation without fixation of the head is provided in new central operating rooms for children (including frameless stereotaxy);
- Cerebral neuronavigation BrainLab, integrated with the Pentero microscope (Zeiss). The SW equipment enables the fusions of functional brain monitoring (MRI, SPECT, tractography etc.);
- Neuro-monitoring device Nicolet Endeavor for the intra-operative follow up of neurophysiological functions;
- Ultrasound applicator of the fixation of absorbable osteosynthesis SonicWeld.
- Stereotactic frame device Radionics
- Neuroendoscopic device

**Important event in 2012:**

- In March 2012 there was a decision of the Minister of Health of the Czech Republic to establish the Department of Neurosurgery, 2nd Faculty of Medicine, Charles University and Motol University Hospital.

## ADULT INPATIENT PART

### Department of Obstetrics and Gynaecology, 2nd Faculty of Medicine, Charles University and Motol University Hospital

*Head physician: Prof. Lukáš Rob, MD*

*Senior consultant: Roman Chmel, MD*

*Head nurse: Bc. Libuše Hofmannová*

**Basic characteristics:**

The clinical department provides care in the full range of its specialisation – gynaecology and obstetrics – including methods of assisted reproduction and specialised interventions in the field of oncological gynaecology, senology and uro-gynaecological diagnostic examinations as well as interventions. The department is a certified Perinatology Centre, including complete care for extremely immature neonates with a regional and nationwide competence. In 2012, 10,353 patients were hospitalised there and a total number of surgeries was 6,170. At the department, 3,480 infants were born from 3,369 deliveries.

**Specialized outpatient facilities for:**

- Oncogynaecology and Colposcopy;
- Urogynaecology;
- Senology;
- Endoscopy;
- Centre for assisted reproduction;
- Ultrasound diagnostics and Fetal Medicine
- Prenatal Diabetology;
- Cardiopathies and Haematological diseases in pregnancy

**New methods and procedures:**

- In the therapy of vulvar carcinoma, in the standard therapeutic procedure the preoperative detection and extirpation of the sentinel lymphatic node (an alternative to a complete inguinal lymphadenectomy) has been introduced there, which will significantly reduce postoperative morbidity in patients (mainly lymphoedema of the lower limbs).
- In the treatment of carcinoma of the cervix, less radical procedures based on detection of the sentinel node were introduced, reducing the extent of the surgery and thus also postoperative morbidity for specific groups of women (mainly lymphoedema of the lower limbs, disorders of continence and evacuation of the bladder).



- Among the treatment procedures for young women in the early stage of cervical cancer, who are planning to become pregnant, fertility sparing treatment algorithm was put into operation.

**Unique technological equipment:**

- Therapeutic CO2 laser for the treatment of pre-cancerous changes in the vulva and vagina
- LigaSure- coagulation

**Important event in 2012:**

- Opening of completely renovated delivery room - November 2012.
- Organization of the International Conference for Oncogynaecology - 16th Bauer day.

Department of Neonatology with ICRU (intensive care and resuscitation unit) is a part of the department of Gynaecology and Obstetrics.

**Department of Neonatology with ICRU**

*Head physician: Ass. Prof. Petr Zoban, MD*

*Head nurse: Dana Šmídlová*

**Basic characteristics:**

The department of Neonatology is a part of the Perinatology Centre with regional and nationwide activity. This workplace provides care for neonates in the rooming-in regimen and further, a specialised intensive resuscitation care to immature babies including extremely immature and pathological neonates regardless their gestation age.

In cooperation with paediatric surgical disciplines, it ensures the care for neonates with congenital developmental defects (CDD).

The department belongs to medical centres with the nearest specific mortality of neonates below 1000 g in the Czech Republic.

In 2012, a total of 3,467 live born infants were born there (compared to 3,314 newborns in 2011), of which 327 with low birth weight, thereof 87 infants with birth weight below 1500 g - it is 26 % more than last year. At the ICRU/ICU, 431 neonates were treated in 2012. A total of 91 infants had congenital developmental defects. Outpatient treatment was provided for 222 newborns.

**Specialized outpatient facilities:**

- Children at risk and Comprehensive care centre

**New methods and procedures:**

- In cooperation with the Department of Paediatric Stomatology and the Department of Plastic Surgery of the University Hospital in Královské Vinohrady

(Prague 10), a programme of an early correction of clefts of the lip and palate in neonates (up to 7th day post partum) continues here. In 2012, a total of 37 corrections were performed (from the year 2010 there is an increase of 14 %).

- Continuation of the programme of a non-invasive support of breathing in neonates, with reduction of the length of mechanical pulmonary ventilation to a minimum (INSURE).
- The department performs a whole-body hypothermia in the treatment of neonates with perinatal asphyxia.

**Unique technological equipment:**

- EEG monitor for continuous monitoring of electrophysiological activity of the CNS
- Therapeutic unit for comprehensive controlled treatment of whole-body hypothermia in neonates with asphyxia
- New „bed-side“ ABL Radiometr with enhanced software for extended range of biochemical analytes.

**Important event in 2012:**

- XXVIII. Neonatological days with international participation, Ostrava 2012 - Štechová K., Černý M., Umanová T. et al.: Continuous monitoring of newborns by using the CGMS (case report).
- XXIX. Conference of the Perinatal Medicine Section of the Czech Gynecological and Obstetrical Society, České Budějovice 2012 - P. Zoban: Current problems of late morbidity in newborns at risk in the Czech Republic (requested lecture)
- X. Czech Paediatric Congress with international participation, Liberec 2012 - P. Zoban: Newborn with low birth weight: aftercare (requested lecture)
- IX. Symposium of practical neurology, Brno 2012 - Zoban P.: Paediatric cerebral palsy from the neonatologist's point of view (requested lecture)
- P. Zoban – received the Award „Purple Heart“ from the Czech Neonatology society for his contribution in the field of care for premature newborns on the occasion of the World Prematurity Day, 20th November 2012.

**Department of Internal Medicine, 2nd Faculty Medicine, Charles University and Motol University Hospital**

*Head physician: Prof. Milan Kvapil, MD, MBA*

*Senior consultant: Vladimír Srnský, MD*

*Head nurse: Jarmila Schmittová*

**Basic characteristics:**

Department of Internal medicine provides full diagnostic and therapeutic care almost in the whole range of its specialisation, for hospitalised patients from the catchment area and super consulting services for patients from the whole

Bohemia. It offers pregraduate education for Czech and foreign students of 2nd Faculty of Medicine from the 3rd to the 6th year of their studies as well postgraduate course in frame of the discipline.

In 2012, the department provided outpatient treatment for 56,754 patients, 5,261 patients were hospitalised.

#### **Specialised outpatient facilities for:**

- General internal medicine (including consulting services)
- Gastroenterology (including endoscopy and sonography)
- Diabetology
- Nephrology (including peritoneal dialysis)
- Cardiology (incl. ECHO)
- Angiology (incl. DUS examination of arteries and veins)
- Podology
- Nutrition
- Lipidology
- Rheumatology
- Endocrinology

#### **New methods and procedures:**

- Advisory centre for pelvic floor disorders which carries out the examinations of patients with anal sphincter incontinence was put into operation.
- High-Resolution Manometry of esophagus and rectum was performed in practice. It is used in the diagnosis of gastroesophageal reflux disease, achalasia and fecal incontinence.
- Measurement of transcutaneous oxygen tension (TcPO<sub>2</sub>) by the TCM device was performed in practice.
- SLEDD method (Sustained Low-Efficiency Daily Diafiltration) was introduced in the treatment of cardio-renal syndrome.
- The PICC team of nurses (for implementation of central venous catheters by peripheral route) was established at the Metabolic Unit, also taking care for all types of long-term vascular entry.
- Endocrinology outpatient centre was launched.

#### **Unique technological equipment:**

- Devices for subcutaneous glucose levels measurements (CGMS): IPRO II, IPRO I, Realtime, DexCom

#### **Important event in 2012:**

- Prof. Schück was awarded a number of awards: the IKEM Medal, the Medal of the 2nd Faculty of Medicine, Charles University, the Josef Hlávka's Price, the Medal of the Society of Czech Physicians and the Price of the Pioneer of European Nephrology / ERA-EDTA / in Paris.
- Prof. Schück is the co-author of the article „The Clinician and Estimation of Glomerular Filtration Rate by Creatinine-based Formulas: Current Limitations

and Quo Vadis“ in the Clin J Amer Soc Nephrol journal (with the IF of 5.227).

- Prof. Schück is the co-author of the thesis „Importance of serum Na<sup>+</sup> and Cl<sup>-</sup> Difference in Acid-Base Status Classification“ published in the Anesth Analg journal.
- Prof. Matoušovic is the co-author of the article „IgA Nephropathy: Molecular Mechanism of the Disease“, published in the Annu Rev Pathol journal (with the IF of 20!).
- Ass. Prof. Chlumský is the co-author of the thesis „Oral rivaroxaban for the treatment of symptomatic pulmonary embolism“, published in the N Engl J Med journal.
- Ass. Prof. Horáčková et al. published a textbook „Preventive Nephrology in examples.“
- Ass. Prof. Keil with his team published a textbook for medical students, „Selected Topics in Gastroenterology“.
- As. Drabek, MD. with his team published a textbook for medical students „Selected Topics in Hepatology.“
- A monograph of prof. Perušičová „Prediabetes, Prehypertension, Dyslipidemia and Metabolic syndrome“ was published.
- Prof. Perušičová published the book „Diabetes mellitus and the senses“
- As. Piňhová, MD published the book „Diabetes mellitus and reproductive functions“
- Organization of the 8th Symposium „Cardiabetes or What is new on the way from obesity through diabetes up to cardiabetes“ in Prague.
- Organization of the traditional three-day seminar: the 18th Graduate seminar „News in diabetology.“ in Poděbrady.
- The attestation course of gastroenterology and the one-day course „Introduction of the Ovesco Clip into routine practice“ were organized at the department.
- The 3D instructional film focused on the application of the Ovesco Clip in gastroenterology, created in cooperation with the Garant Company was presented at the national congress in Karlovy Vary.

#### **Department of Surgery, 2nd Faculty of Medicine, Charles University and Motol University Hospital**

*Head physician: Prof. Jiří Hoch, MD*

*Senior consultant: Zbyněk Jech, MD*

*Head nurse: Bc. Růžena Macháčková*

#### **Basic characteristics:**

In 2012, the Department of Surgery, 2nd Faculty of Medicine, Charles University and Motol University Hospital provided a complete surgical, outpatient, consulting and hospital care for its patients in the whole range of its specialisation – i.e. general and abdominal surgery, abdominal and thoracic traumatology. During the year 2012, the department of plastic surgery was launched

within the Department of Plastic Surgery. The department participated in the pregraduate and postgraduate education, and in the solution of research projects.

In 2012, the outpatient treatment was provided for 20,197 patients, 2,947 patients were hospitalised and 2,440 patients underwent a surgery.

#### **Specialised consulting centres for:**

- Proctology
- Patients with colostomy – an educational and training centre
- Diseases of the pancreas and the biliary tract
- Endocrine surgery
- Mammology
- Lymphology
- Lymphedema treatment
- Endoscopy, Anorectal manometry
- Plastic Surgery

#### **New methods and procedures:**

- Plastic Surgery in the whole range of the discipline, including microsurgery.
- Comprehensive care for patients with breast cancer, including the plastic reconstruction of the breast.

#### **Unique technological equipment:**

- The unit for electrocoagulation and dissection - LigaSure - improving and extending the laparoscopic and conventional surgery.
- The scintillation detector for the identification of the sentinel lymph node during breast and malignant melanoma surgeries.

#### **Important event in 2012:**

- Course of endosutures; Certified educational course „Comprehensive care for patients with breast cancer“; ConvaTec Academy – certified educational course for nurses working with patients with stoma
- Leadership of the IGA multicentric grant in the Czech Republic in frame of the „NT13726 Parametric TME quality monitoring as a tool to reduce local recurrences after surgeries of rectal cancer.“
- Initiating and conducting of a multicentre study of stoma tools.
- Thirteen physicians and eight foreign students underwent the postgraduate training.
- Foreign guests: one from the Cancer Center from the Kaunas University.
- One habilitation was successfully defended at the department.

### **3rd Department of Surgery, 1st Faculty of Medicine, Charles University and Motol University Hospital**

*Head physician: Prof. Robert Lischke, MD, Ph.D.*

*Senior consultant: Jiří Tvrdoň, MD*

*Head nurse: Mgr. Ida Lecnarová*

#### **Basic characteristics:**

The department is the biggest workplace of abdominal surgery in the Czech Republic - the center of excellence, it provides comprehensive care in many fields of thoracic surgery (surgery of lung, trachea and respiratory tract, chest wall and chest deformities, oesophagus, mediastinum, myasthenia gravis, diaphragm).

The department is the only centre in the Czech Republic with the Pulmonary transplantation programme. It is also the only accredited medical centre for thoracic surgery of the second degree.

It provides medical care in the whole range of abdominal surgery (surgeries of esophageal reflux disease, diaphragmatic hernia, esophageal achalasia, a surgery of the stomach and small intestine, liver, biliary tract and pancreas, a surgery of the colon and rectum, hernia surgeries, minimally invasive laparoscopic techniques, thoracic and abdominal traumatology and endocrinology). In 2012, 3,175 surgeries were performed here, 3,666 patients were hospitalized and outpatient treatment was provided for 27,041 patients. At the department, 20 pulmonary transplantations were performed in 2012.

#### **Specialised outpatient centres for:**

- Lung transplantation
- One-day surgery
- Diseases of intestines and rectum
- Endocrinology
- Diseases of veins and lower extremities
- Diseases of livers, biliary tract and pancreas
- Diseases of oesophagus and stomach
- Diseases of lungs, mediastinum and chest wall
- Diseases of mammary gland
- Internal clinic

#### **New methods and procedures:**

- Preparation of the programme Ex vivo lung perfusion and reconditioning, a method to increase the number of suitable grafts for lung transplantation;
- Introduction of a surgical rectoscope for the mini-invasive surgery in the rectal region;
- Introduction of an endoscopic application of absorbable stents in diseases of oesophagus, stomach and respiratory tract;
- Introduction of the use of radio-frequency ablation Habib in hepatic surgery



- and surgery of parenchymatous organs;
- Introduction of surgery of varixes with the help of radio-frequency ablation (RFA).

**Unique technological equipment:**

- Cardiohelp- centrifugal pump for extracorporeal membrane oxygenation
- Videobronchoscopy, gastroscopy
- Surgical rectoscope for mini-invasive interventions in the rectal region;
- Hemron – a device for the outpatient treatment of hemorrhoids;
- Device for radio-frequency ablation Habib, together with the department of imaging methods
- Harmonic scalpel, electrocoagulation and dissection unit LigaSure

**Important event in 2012:**

- 3th December 2012 – Press conference on the occasion of the 15th anniversary of the Pulmonary transplantation programme in the Czech Republic and performing of the 200th lung transplantation and the first lung retransplantation in the Czech Republic.
- 30th November 2012 – Organization of the Meeting of thoracic surgeons of the Czech Republic with an international participation.

### Department of Cardiology 2nd Faculty of Medicine, Charles University and Motol University Hospital

Head physician: Prof. Josef Veselka, MD, FESC

Senior consultant: Jana Páleníčková, MD

Head nurse: Bc. Jana Kovalčíková

**Basic characteristics:**

The department provides comprehensive cardiological care for hospitalised and outpatient patients. It is directly related to the Department of Cardiosurgery and Angiosurgery.

In 2012, an outpatient treatment was provided for approximately 24,000 patients, almost 4,000 patients were hospitalised. At the department, 2,800 selective coronarographies, 1,001 percutaneous coronal interventions, 400 peripheral arterial angioplasties, 7,500 echocardiographic examinations, 820 ergometric or spiroergometric examinations, 170 pacemaker implantations, 110 electrophysiological examinations and catheter ablation, 50 ICD implantations and 2,300 duplex ultrasound examinations of the peripheral vessels were performed.

**Specialised outpatient facilities for:**

- Congenital and acquired cardiac defects,
- Cardiac failure
- Hypertrophic cardiomyopathy
- Electrophysiology and cardiac pacing

- Angiology

**New methods and procedures:**

- Implantation of fully biodegradable stents in coronary arteries- the first performance of this type in the Czech Republic
- Extension of using the fractional flow reserve technique in patients with a stable AP and angiographic findings at the borderline level
- Catheterisation implantation of biological valve in the aortic position
- Direct transarterial aortic valve implantation – the first performance of this type in the Czech Republic
- Valvuloplasties of all cardiac valves
- Alcohol septal ablation - the largest set in the Czech Republic
- Radiofrequency ablation of the interventricular septum in patients with hypertrophic cardiomyopathy - the second intervention of this type in the world
- Carotid stenting - the largest set in the Czech Republic
- Using of the proximal-protection system during the stent implantation in the carotid bed
- Catheterisation occlusion of atrial septal defect and patent foramen ovale (PFO)
- Catheterisation occlusion of para-valvular leak and aortic valve
- Method of controlled hypothermia in resuscitated patients
- Imaging of the heart by 3D echocardiography
- Programme of endomyocardial biopsy
- Treatment of rhythm disorders with the help of 3D electroanatomical mapping
- Renal denervation programme for the treatment of resistant hypertension
- Programme for cardiological examination of marathon runners

**Unique technological equipment:**

- CARTO - a device for a three-dimensional electroanatomic mapping
- Echocardiographical device with a 3D transesophageal echocardiography
- Echocardiographical device including an intracardiac echocardiography
- Lucas Compression System – a device for external cardiac compressions

**Important event in 2012:**

- Publications: 6 abstracts and 12 articles in international journals.
- Monograph: Veselka J. (the editor) - Hypertrophic cardiomyopathy: from the basic research to clinical management InTech, Rijeka, 2012.
- Organization of the annual symposium Prague Intervention VI. with an international participation.
- Organization of the seminar Cardiomyopathy - What should a physician know before the attestation in cardiology.
- Organization of the seminar Arrhythmology for practice -Ventricular arrhythmias.
- The TCT 2012 (The Transcatheter Cardiovascular Therapeutics), Miami, USA-

the Featured Clinical Trials section - presentations of the TIPS 3 study (international randomized multicentre study).

- The TCT for Asia and Pacific 2012, Seoul, South Korea- the Late Breaking Trials section - Carotid artery stenting without post-dilatation.

### Department of Cardiosurgery, 2nd Faculty of Medicine, Charles University and Motol University Hospital

*Head physician: Ass. Prof. Marek Šetina, MD*

*Senior consultant: Milan Horn, MD*

*Head nurse: Drahomíra Vrbová*

#### **Basic characteristics:**

The Department of Cardiosurgery provides comprehensive care in the whole range of its specialisation: cardiosurgery and vascular surgery. It ensures a 24 hour surgical service for all emergencies of the cardiovascular system including traumas.

In 2012, the outpatient care was provided for 4,987 patients and 817 major surgeries were performed, of which 376 were cardiac and 441 vascular interventions.

#### **Specialised outpatient facilities for:**

- Cardiology
- Cardiosurgery
- Vascular diseases
- Congenital heart defects in adults
- Arrhythmology – after surgical treatment of atrial fibrillation
- Treatment of ischaemic defects of lower extremities
- Clinic for patients after surgical treatment of infective endocarditis

#### **New methods and procedures:**

- Video-assisted mini-invasive surgery of valvular diseases
- Video-assisted mini-invasive surgery of some congenital cardiac defects (e.g. defect of the atrial septum)
- Comprehensive care for adult patients with congenital heart disease
- Surgical treatment of infectious endocarditis, including the treatment of drug addicts in cooperation with the Department of Infectious Diseases of the MUH and the Department of Infectious Diseases of University Hospital at Bulovka
- Hybrid mini-invasive solution of polymorbid patients with ICHS (PCI – stent + MIDCAB – monobypass from the minithoracotomy without the extracorporeal circulation)
- Development of methods of mechanical cardiac support
- Reconstructive (sparing) surgeries of the aortic valve
- Revascularisation of the myocardium without using the extracorporeal circulation

#### **Unique technological equipment:**

- Maquet Cardiohelp - a portable device for mechanical cardiac support on the principle of centrifugal pumps
- Toshiba ECHO - echo device with 3D imaging

#### **Important event in 2012:**

- Active participation of physicians from the department on many medical events in the Czech Republic as well as abroad: Annual Congress of the Czech Society of Cardiology; Days of Cardioanesthesiology with an international participation; Annual conference of the Working Group for Acute Cardiology of the Czech Society of Cardiology; Annual Symposium of the Working group for congenital heart disease in adulthood of the Czech Society of Cardiology; The day of the South Bohemian Cardiac Centre; Prague Intervention, International meetings in Chelyabinsk, in Astana.
- Doctor Janský was the main organizer of the 10th conference of the Working Group for Acute Cardiology of the Czech Society of Cardiology in Karlovy Vary.

### Department of ENT, Head and Neck Surgery, 1st Faculty of Medicine, Charles University and Motol University Hospital

*Head physician: Prof. Jan Betka, MD*

*Senior consultant: Pavol Jablonický, MD*

*Head nurse: Jana Jandová*

#### **Basic characteristics:**

The clinical department provides a complete spectrum of examinations and treatment of diseases in the ENT field. Surgical methods are performed in the full extent including super-specialised interventions, in most cases for the whole Czech Republic. In the year 2012, 3,363 patients were hospitalised, of which 1,548 at the ICU. The department performed 58,536 outpatient medical services for 16,156 patients. In our operating rooms, 3,323 surgeries were performed and next 212 patients of Motol University Hospital underwent the operation outside the clinic. In 2,610 patients there were performed further specialised audiometric examinations, and a total of 8,698 operations were undertaken. Objective audiometry was performed in 324 patients and otoacoustic emissions in 360 patients. The examination of the statoacoustic apparatus was performed in 874 cases and the ENG examination in 152 patients.

#### **Specialised outpatient facilities for:**

- Oncology
- Kophosurgery
- Rhinology
- Endocrinosurgery

- Otolaryngology
- Hearing aids
- Laryngo-phonosurgery
- Voice prostheses
- Snoring-related problems and sleep disorders
- Sonography
- Salivary glands disorders
- Swallowing disorders
- Neurosurgery and cranial base
- Centre for lasersurgery
- Centre for surgery of the thyroid and parathyroid glands
- Centre for cochlear implant
- Center for head and neck oncosurgery
- Center for rehabilitation in patients after total laryngectomy

#### **New methods and procedures:**

- Operation of the sentinel node in carcinoma of the oropharynx and the oral cavity with help of the gamma probe detection;
- Investigation by means videostroboscopy in patients prior to microlaryngoscopy and phonosurgical interventions;
- Identification of the target structure in the course of cochlear implantation by means of EABR.
- endoscopic resection of esophageal diverticula
- endoscopic diagnostics of respiratory tract tumors and tumors of swallowing pathways, with the help of MBI

#### **Unique technological equipment:**

- CO2 Laser, Dioxi Laser
- Harmonic scalpel, radio-frequency scalpel;
- Endoscopic equipment for the mini-invasive interventions of the thyroid gland and in the operation of the cranial base and the inner auditory meatus;
- Videostroboscope, ENG Video
- Neuronavigation, radionavigation

#### **Important event in 2012:**

- Czech-American ENT days - international interactive surgical course, organized in collaboration with St. Luis University, USA ( 21. - 25.5).
- 74th Congress of the Czech society of Otolaryngology and Head and Neck Surgery, Mikulov (13. - 15.6)
- 12th ENT Forum, Prague, with invited lecture of professor Heinrich Ir, MD, Erlangen (18.10.).
- 25th international course of endoscopic endonasal surgery (EES, FES, FESS), Prague (30.10 - 2.11).
- As. MD. Petr Lukes, Ph.D. – Price of Prague Medical Report magazine for young authors to 35 years for the article: Lukes P. "Comparison of Helicobac-

ter Pylori genotypes Obtained from the oropharynx and Stomach of the Same Individuals - A Pilot Study."

- As. MD. Zdeněk Fík - Albert Schweitzer Prize for Medicine 2012, third prize.
- MD. Zdeněk Fík, Ph.D. student at 1st Faculty for work Valach J, Fík Z (both authors Contributed equally).
- Strnad H, Chovanec M, slug J, Cada Z, Szabo P, Sachova J, Hroudová M, Urban M, M Steffl, Paces J, Mazánek J, Vlcek C, Betka J, Kaltner H, Andre S, Gabius HJ, Kodet R, Smetana K, Jr., Gal P, Kolar M (2012) Smooth muscle actin-expressing stromal fibroblasts in head and neck squamous cell carcinoma: Increased expression of Galectin-1 and induction of poor prognosis Factors. *Int J Cancer*. Mar 24th 2012 doi: 10.1002/ijc.27550.
- As. MD. Eliska Rotnáglová, Ph.D. – Kutvirt's price for doctors to 35 years - Rotnáglová E, R Tachezy, Saláková M, Prochazka B, E Košl'abová, Vesela E, Ludvíková V, E Hamšíková, Klozar J. HPV involvement in tonsillar cancer: prognostic significance and clinically.

#### **Department of Nuclear Medicine and Endocrinology, 2nd Faculty of Medicine, Charles University and Motol University Hospital**

*Head physician: Prof. Petr Vlček, Ph.D.*

*Head nurse: Jana Richterová*

#### **Basic characteristics:**

The interdisciplinary workplace of Nuclear medicine and Endocrinology which is, besides standard diagnostics by means of radioisotope methods, focused on diagnostics, treatment and dispensary care of patients with differentiated carcinoma of the thyroid gland and severe forms of thyroid orbitopathy and on therapy of <sup>131</sup>I-MIBG from the whole Czech republic. The department also serves as an educational centre, it accredited in specialisation of Endocrinology and Nuclear Medicine. Last year it provided care for 18,500 patients, 1,000 of which were hospitalised. The outpatient facilities provided 4,000 investigations and therapeutic applications of radioactive pharmaceuticals. The department is a centre for the treatment with TAO inhibitors of the growth hormone, diagnostics and therapy of DTC using human recombinant THS (as the only in the CR) and the treatment of tumours of neuroectodermal origin MIBG (the only in the CR).

#### **Specialized outpatient facilities for:**

- Endocrinology and diagnostics of differentiated carcinoma of thyroid gland (DTC); the dispensary has over 11,700 patients (this is one of the greatest ensembles in the world)
- Clinic for thyroid microcarcinoma
- Consulting for medullary thyroid carcinoma (MTC)
- Clinic for thyroid ophthalmopathy (TAO)
- Nuclear medicine clinic



**New methods and procedures:**

- Diagnostics and treatment of differentiated carcinoma of the thyroid gland using human recombinant thyreostimulation hormone;
- Diagnostics using a hybrid combination of X-ray (CT) scanning and isotope (SPECT) imaging;
- Use of Somatuline and combined immunosuppression in the treatment of most severe forms of thyroid orbitopathy.
- Introduction of new radiopharmaceuticals in clinical practice Tectrotyd-99m;
- Clinical testing of new pharmaceutical for the therapy of medullary carcinoma (Astra-Zeneca).
- Providing of genetic testing in patients with familial forms of medullary thyroid carcinoma.

**Unique technological equipment:**

- Symbia TruePoint SPECT/CT T

**Department of Long-term treatment - Aftercare Centre**

*Senior consultant: Blanka Mašková, MD*

*Head nurse: Květoslava Simmerová*

**Basic characteristics:**

Department of Long-term treatment - Aftercare Centre was established on 1 April 2012 by merging the original two sites of LTT 1 and LTT 2. The department has a total of 381 beds on 13 inpatient stations. It specializes in geriatric medicine, on the follow-up care, the care of patients after trauma, surgery, chronic internal diseases, cerebrovascular accidents, etc., without age restrictions.

Our department specializes in wound healing, nutrition, physiotherapy and occupational therapy. Clinical psychologist and speech therapist are available to all patients. ACC-LTT works with volunteer centre that organizes educational and entertaining programs for patients such as art workshop, singing, theatre or animal assisted therapy.

Department received accreditation of the first degree for teaching geriatrics, is engaged in postgraduate medical education in geriatrics and participates in teaching of internal medicine and bachelor's degree nurses.

**New methods and procedures:**

- Participation in international studies MIDFRAIL dealing with non-pharmacological options for improvement of diabetes type II. at geriatric patients.

**Important event in 2012:**

- Active employee participation on XVI gerontological days - Ostrava (17. -19.10.), Congress general practitioners Prague (18.10.) and Congress Sister in practice (Olomouc)
- MD. Krupková J. - Nutrition geriatric patients

- Internal Medicine Practice 3/12

- MD. Nováková M. - Fragility geriatric patients - possible solutions (article)

**Department of Neurology, 2nd Faculty of Medicine and Motol University Hospital**

*Head physician: Ass. Prof. Petr Marusič, MD, Ph.D.*

*Senior consultant: Aleš Tomek, MD*

*Head nurse: Hana Havlíčková*

**Basic characteristics:**

Neurological Clinic provides comprehensive diagnostic and therapeutic care of patients with diseases of the nervous system. The main programs developed on the highest possible level in the Czech Republic are cognitive, epileptological, vestibulological, neuromuscular, Neuroimmunological and neurovascular program. In addition to care for the catchment area is selectively provided superconsiliary care for patients from all over the country.

In 2012, the department provided outpatient examination for 38,955 patients. A total of 1,901 patients were hospitalised, 413 at the ICU for Neurology and 112 on video-EEG monitoring unit.

**Specialised outpatient facilities:**

- Centre for diagnostics and treatment of demyelination diseases;
- Centre for epilepsy - advisory centre for seizure disorders;
- Ictus Center of Motol Hospital, Cerebrovascular clinic and laboratory neurosonology;
- Centre for disorders of cognitive functions;
- Centre for Neuromuscular Diseases;
- Centre for Parkinson's disease and other extrapyramidal disorders;
- Advisory centre for neurocutaneous diseases;
- Advisory centre for vertiginous states;
- Advisory centre for neuroAIDS;
- Advisory centre for myoskeletal medicine;
- Centre for headaches;

**New methods and procedures:**

- Endovascular treatment of acute ischemic stroke as a routine medical procedure. (Cooperation with KZM).
- Development and implementation of special MR protocol for patients with multiple sclerosis (Cooperation with KZM).
- Examination of measure of atrophy of critical brain structures with MRI volumetry and the introduction of examination integrity of white matter diffusion tensor imaging (DTI) in cooperation with the Motol University Hos-

pitalKZM.

- Development of MR images using automatic volumetry in patients with cognitive impairment and epilepsy. (cooperation with KZM)
- CSF laboratory (in collaboration with the Institute of Immunology) Diagnostics-encephalitis-autoimmune antibodies against onconeural well-characterized antigens (Hu, Yo, Ri, MA2 (Ta), CV2 (CRMP5), amphiphysin) by Western blot method with a subsequent automated semiquantitative evaluation - Diagnosis, detection of antibodies against membrane and synaptic antigens (NMDAR, AMPA1R, AMPA2R, GABABR, Caspro-2 LGI-1) by indirect immunofluorescence on cells transfected with genes for the relevant antigens.
- Diagnosis of neurodegenerative diseases.
- In collaboration with the Laboratory of Molecular Diagnostics Hospital Na Homolce - Examination TOMM40 gene polymorphisms in patients with Alzheimer's disease; introduction of the indicator model MxA protein levels in routine practice in patients with multiple sclerosis treated with interferon.
- Hospitalization program of rehabilitation of balance disorders using biofeedback (BrainPort) in collaboration with the Department of Rehabilitation.
- Creation of programs for the rehabilitation of strabismus, amblyopia and functional programming Hess screen version in cooperation with the Department of Cybernetics, CTU in Prague and Motol Hospital Eye Clinic;
- Examination otolith system using the „cervical myogenic evoked potential“.
- Testing of thin fibers of peripheral nerves method for determination of thermal threshold using the Peltier element.
- Synchronization of neuropsychological battery by tests used at the Mayo Clinic (Rochester, USA), implementation of new questionnaires used to detect early stages of Alzheimer's disease.
- The protocol for patients with suspected normotensive hydrocephalus including the implementation of a standardized lumbar infusion test.
- Introduction of methods Pupillometry - Advanced Option examination of existing equipment for videooculography (VOG).
- Extension of personalized medicine in the secondary prevention of cerebrovascular disease, including the identification and titration of dabigatran exposure.
- The introduction of computer-based testing methodology spatial memory, including virtual reality.
- In collaboration with the Institute of Neuroscience second Faculty stem cell transplantation in patients with spinal cord lesions, and amyotrophic lateral sclerosis - phase clinical trial.

#### **Unique technological equipment:**

- Toshiba ultrasonographic device 500 applications for examination transcranial and extracranial arteries and peripheral nerves with a 3D display along with MR / CT data

- 128-channel EEG system NicoletOne video EEG monitoring
- Rotating armchair NYDIAK for electronystagmography - ENG testing;
- Two systems for videoEEG monitoring Schwarzer/BrainLab and Schwarzer/Stellate;
- FAN Study system for a complete evaluation of functioning of the autonomous nervous system including the test on an inclined plain.
- Experimental laboratory for testing spatial memory and spatial orientation (Blue Arena) - in cooperation with the Institute of Physiology

#### **Important event in 2012:**

- Participation on organization of the 23rd Czech and Slovak neuromuscular Congress in Brno, 40th Czech and Slovak cerebrovascular Congress in Spindleruv Mlyn and organizing international training days in neurotology.
- Monograph: „neurointensive care: A Practical Guide“ (main editor prim Tomek, editor dr. Sramek, the authors of chapters doc. Marusič, dr. Krýsl, dr. Urbanova, dr. Schwab).
- Monograph „Diabetes mellitus and pain“ (as. Mazanec).
- Chapter in the monograph „Advanced Topics in Neurological Disorders“: Methods of Measurement and Evaluation of Eye, Head and Shoulders (as. Black)
- The most important specialized publications Nedelska-Z, Anđel R, Laczó J, Vlcek K, Horinek D, Press J, K Sheardová, Bures J, Hort J. Spatial navigation impairment is proportional to right hippocampal volume. Proc Natl Acad Sci U.S.A. 2012 Feb 14; 109 (7) :2590-fourth (IF 9.681)

#### **1st Department of Orthopaedics, 1st Faculty of Medicine, Charles University and Motol University Hospital**

*Head physician: Prof. Antonín Sosna, MD, PhD.*

*Senior consultant: Ass. Prof. Stanislav Popelka, MD, PhD.*

*Head nurse: Mgr. Jana Sládková*

#### **Basic characteristics:**

1st Department of Orthopaedics provides both conservative and surgical care for adult patients in the full spectrum of orthopaedic interventions and traumatology of the locomotors apparatus with the exception of the spine and paediatric orthopaedics.

The department has 142 beds of which 14 at the ICU, 30 for traumatology and 20 are septic.

A total of 5,256 patients were hospitalised in 2012 and the outpatient care was provided for 57,956 patients. Total number of operations made was 4,899

#### **Specialised outpatient facilities:**

- Joint replacement
- Surgery of major joints
- Surgery of the hand and the leg

- Arthroscopy of the shoulder, wrist, hip, knee and ankle joint
- Sport traumatology
- Septic orthopaedics
- Rheumatology
- Oncology
- General traumatology

#### **New methods and procedures:**

- Research and development of new joints implants in cooperation not only with domestic but also foreign partners;
- Introduction of routine use of reverse shoulder arthroplasty
- New techniques in wrist surgery
- New replacement was developed for the metatarsophalangeal joint of the thumb, which was put into practice
- RS Scan International - pedobarograf - functional load measuring foot before and after surgery

#### **Important event in 2012:**

- The appointment of a professor of orthopedics: Doc. MD. Pavel Vavřík, PhD., Doc. MD. I. Landor, MD., Doc. MD. David Jahoda, PhD., Doc. MD. David Pokorný, Ph.D.
- Released Books by Landor, Vavřík, Sosna, Gallo et al.: Revision hip surgery, Maxdorf

### **Department of Spindylosurgery of Motol University Hospital**

*Senior consultant: Prof. Jan Štulík, MD*

*Head nurse: Bc. Dagmar Šeborová*

#### **Basic characteristics:**

Specialized department has been treating injuries and diseases of the spine, including the consequences. In a year 2012 total of 1,371 patients were operated, 1 462 patients were hospitalised and outpatient care was provided for 11,127 patients.

#### **Specialised outpatient facilities:**

Treatment of injuries and diseases of the spine.

#### **New methods and procedures:**

- Mobile total replacement of the cervical and lumbar intravertebral disc M6
- Dorsal dynamic stabilisation of the lumbar spine (Agile Horizon, Dynesys, DSS);
- Occipitocervical fixation (Vertex, Vertex max, S4C, Peak Summit SI);
- Total spondylectomy C2;
- Mini-invasive approaches to the thoracic and lumbar spine, translaminar fixation (TLP Signus);

- Transsacral spondylodesis AxiaLIF;
- SI desis of the joint DIANA.
- The navigation O-ARM
- Vertebral body replacement Obelisc, ADD Plus

#### **Unique technological equipment:**

- O – ARM – device for 3D imaging of the spine in the course of surgical intervention and a navigation spinal system
- NIM – ECLIPSE – device for peroperative monitoring of neurological functions
- Surgical microscope Carl Zeiss

#### **Important event in 2012:**

- 10-year anniversary of the Department spondylosurgery Motol University Hospital.
- Lectures:
  - Cervical spine course, Aesculap Academy, Liberec, Czech Republic;
  - 28th Annual Meeting AANS / CNS, Orlando, Florida, USA
  - ANNS Annual Scientific Meeting, Miami, Florida, USA
  - EuroSpine, Amsterdam, Holland
  - SRS 47th Annual Meeting, Chicago, Illinois, USA
  - Spondylosurgical Congress, Brno, Czech Republic
- Publications:
  - Acta chirurgiae orthopaedicae et traumatologiae Czechoslovaks
  - Surgical treatment of atlantoaxial osteoarthritis (AAOA): a prospective study of 27 patients
  - Spinal concussion: a retrospective study of 24 patients
  - Metatropic dysplasia as a cause of atlantoaxial instability, spinal stenosis and myelopathy: case report and literature review
  - Cell replacement cervical intervertebral disc Prodisc-C: a prospective monocentric four-year study
  - Unstable injury to the upper cervical spine in children and adolescents

### **Department of Pneumology, 2nd Faculty of Medicine, Charles University and Motol University Hospital**

*Head physician: prof. Miloslav Marel, MD, Ph.D.*

*Senior consultant: František Petřík, MD*

*Head nurse: Mgr. Jana Zelenková*

#### **Basic characteristics:**

Department of Pneumology is concerned with diagnostics, treatment, evaluation and research of diseases of the lower respiratory tract with orientation to intensive pneumological care, interventional bronchology, comprehensive care for patients with CHOPD, treatment of patients with cystic fibrosis, oncology



including biological therapy, sleep medicine, examination of patients prior to lung transplantation and the treatment of tobacco addiction. In 2012, 1,860 patients were hospitalized, outpatient treatment was given to 10,934 patients, bronchoscopy was performed 1,378 times and 1,224 times was given chemotherapy.

**Specialised outpatient facilities for:**

- Diseases with bronchial obstruction
- Cystic fibrosis
- Interstitial pulmonary disease
- Oncology
- Transplantations
- Treatment of tobacco addiction
- Patients with sleep breathing disorders

**New methods and procedures:**

- Measurement of exhaled nitrous oxide (FENO) which monitors the inflammatory activity in asthmatic patients;
- Biological therapy of bronchogenic carcinoma which improves prognosis of patients with advanced stages of the disease;
- Introduction of expandable nitinol stents coated with Y in patients with critical stenosis of the lower respiratory tract;
- Endo-bronchial ultrasonography (EBUS) which facilitates puncturing of the mediastinal nodes under the ultrasonographic monitoring in the real time.
- Cryocauter use during bronchoscopy, which allows you to draw more biopsies and alternative cryocauter at disobliteration large airways

**Unique technological equipment:**

- Niox MINO – device for measurement of the exhaled nitrous oxide
- Ultrasound bronchovideoscope Olympus BF-UC 160F-OL8

**Important event in 2012:**

- Two research projects were initiated under grants FN Motol: 1st The incidence of lung disease in autopsied deaths at the University Hospital. Effect of sildenafil on pulmonary function, exercise tolerance and quality of life in adult patients with cystic fibrosis
- Motol CF center, which also includes our clinic, was enrolled in the prestigious European Cystic Fibrosis Clinical Trial Network.
- Multiple active participation at the World Congress on Lung Cancer in Vienna (M. Marel).
- Head of Department prof. Marel was awarded Teacher of the Year

**Department of Radiation Therapy and Oncology of Motol University Hospital**

*Senior consultant: Jana Prausová, MD, Ph.D., MBA*

*Head nurse: Bc. Drahomíra Nikodémová*

*Senior laboratory technician: Alena Čuprová*

**Basic characteristics:**

This department provides a complete care for oncological patients in the field of anti-tumorigenic medicamentous therapy and radiation therapy. It belongs to Complex oncological centres in the CR that provide a highly specialised care. Department is accredited for specialist training in clinical oncology and radiation oncology.

In 2012, a total of 186,714 patients were treated on the outpatient basis, 3,098 of newly admitted (of which 1,989 to chemotherapy and 1,109 to radiotherapy),

2,987 patients were hospitalised, the number of irradiated fields was 136,507, number of brachytherapy applications was 646 and number of applied cycles of chemotherapy was 8,641.

**Specialised outpatient facilities for:**

- Dispensary care for patients after the treatment was completed
- Checking of patients during chemotherapy
- Checking of patients during teletherapy
- Chemotherapy application
- Checking of patients during brachytherapy

**New methods and procedures:**

- Periodic adjustment of protocols of the treatment of malignancies with the introduction of new molecules chemotherapy, new combinations of chemotherapy and biological therapy. Improving symptomatic therapy, improvement of pain treatment, monitoring nutrition of patients, the use of growth factors for the treatment and prevention of decrease in the number of blood cells during cancer treatment.
- Introduction of central venous access (ports) and peripheral PICC in all patients with chemotherapy applications.
- Cooperation in clinical studies and grants with an international participation which solve new therapeutic methods in solid tumours and hemoblastomas.
- Participation in the patented project of an application of directed antracyclines together with the Institute for Microbiology of the Czech Academy of Science, the Institute of Macromolecular Chemistry.
- Participation in the research project together with genetic workplaces in the search for families with a genetic risk of malignancies.
- Cooperation with the Institute of Immunology and Department of Urology, Motol University Hospital in application preparation SNP01 - established cen-

ter for the treatment of prostate cancer.

- Improvements and full use of IMRT method (intensity modulated radiotherapy) which allows for a higher dose in the target volume, sparing healthy tissues
- Implementation of IGRT techniques (image guided radiotherapy) – based on control of the present position of the patient during radiotherapy and possible correction according to reference position during the radiation simulation of Irradiation plan. Use of the function of dynamic wedges in linear accelerators allows for a better 3D (three dimensional) planning. Possibility of fusion of the scans from MRI and CT examination with the planning CT scans to develop a more precise radiation plan.
- Improvements and full use of fractionated stereotactic radiotherapy. Department implemented a new method for prostate brachytherapy.

#### **Unique technological equipment:**

- Two linear accelerators Clinac 2100 C/D, Varian medical Systems (photon beams 6MV, 18MV, electron beams 6, 9, 12, 20 MeV) with a multilamellar collimator (MLC) Millenium MLC-120 and with an electronic imaging system (EPID – electronic portal imaging device) for the check of correct position of the patient during therapy. One of these accelerators is equipped with an additional kV source for exact imaging of the patient's positioning during therapy (OBI -on-boarding imaging).
- Linear accelerator Clinac 600 C/D, Varian Medical systems (photon beams 4MV) with a multilamellar collimator (MLC) Millenium MLC-120 and an electronic imaging system (EPID). This accelerator is equipped with a micro-multilamellar collimator (m3 micro-MLC) and accessories for stereotactic radiation.
- Radio therapeutic simulator Acuity EX, Varian Medical Systems for preparation of radiation therapy.
- CT device Brilliance Big Bore, Philips for the therapy planning.
- Verification system Aria through which are interconnected linear accelerators, simulator, planning systems for external radiotherapy (Eclipse), stereotactic radiation (iPlan) and brachytherapy (Brachyvision).
- Brachytherapeutic device for HDR brachytherapy with an automatic after loading Gammamed Plus iX. Ultrasonograph ProFocus 2202, B-K Medical and pacing device EXII Tracked Stepper for prostatic brachytherapy. Mobile X-ray machine with C arm BV Pulsera, Philips for localisation of applicators in brachytherapy.

#### **Important event in 2012:**

- Department participated on the organization and lectures on the 3rd PragueOnco colloquium. He actively participated in the implementation of Uro-Oncological symposium and other Czech conferences.
- The department has organized symposium of radiotherapists, oncologists, medical physicists and technicians - Motol days. In 2012 we organized area-

dy XIV. annual, In collaboration with an oncology department of Thomayer hospital on rare tumours.

- Doctors are also actively involved in international events ASCO, ESMO abstracts and posters

#### **Department of Urology, 2nd Faculty of Medicine, Charles University and Motol University Hospital**

*Head physician: Prof. Marek Babjuk, MD, PhD*

*Senior consultant: Jan Jerie, MD*

*Head nurse: Bc. Alena Kašajová*

#### **Basic characteristics:**

Department of Urology provides therapeutic and preventive care in the full range of adult urology. It is specialised in surgical treatment of malignancies of the uropoetic tract including the subsequent oncological treatment. It belongs among top workplaces in the treatment of lithiasis and is a unique workplace for surgical conversion of the sex. In 2012, the treatment was provided for 25,770 outpatient clients, 3,381 patients were hospitalised of which number 1,613 were operated.

#### **Specialised outpatient facilities for:**

- Oncology
- Treatment of lithiasis and chronic infection
- Andrology
- Dysfunction of the lower urinary tract
- Centre for research and treatment of prostate cancer (in collaboration with the Department of Radiotherapy-Oncology and Institute of Immunology)
- Centre for the surgical treatment of transsexualism

#### **New methods and procedures:**

- laparoscopic radical cystectomy;
- Enhancement of nephrectomy technique performed by using the single-port approach (LESS nephrectomy);
- Enhancement of laparoscopic technique of radical prostatectomy;
- Laparoscopic resection of the kidney tumor;
- Enhancement of radical prostatectomy;
- Enhancement of shunt operations after cystectomy;
- Use of new imaging methods for diagnostics of the urinary bladder tumors („narrow band imaging“);
- neuromodulation in the treatment of urge urinary bladder symptoms;
- Introduction of microsurgical method in surgeries of varicocele;
- Use of Ho:YAG laser in surgical interventions;

**Unique technological equipment:**

- Ho:YAG laser
- devices for NBI (narrow band paging), fluorescence cystoscopy
- devices for LESS

**Important event in 2012:**

- Department of Urology has acquired as a second in the country accreditation of European Board of Urology (EBU) and the EBU title-Certified Training Centre.
- Prof. Babjuk elected chairman of the Czech Urological Society JEP
- Prof. Babjuk elected chairman of the Group for the development of recommended practices in the treatment of bladder cancer European Association of Urology

## COMMON EXAMINATION AND THERAPEUTIC UNITS

### Department of Radiology of 2nd Faculty of Medicine, Charles University and Motol University Hospital

Head physician: Ass. Prof. Miloslav Roček, MD

Senior consultant: Radek Pádr, MD

Head of RA: Mgr. Tomáš Schilla

**Basic characteristics:**

In 2012, the Department carried out total of 286,100 examinations in 204,844 patients. The total number of reported points was 195 286 992 On DoR were carried out a total of 267,182 exposures in 2012. Mainly outpatients were examined, who represented more than 60%. In comparison with 2011, the number of CT examinations increased by 10%. Number of MRI scans raised approximately by 5%. Number of examined patients on angiography slightly increased, as well as the number of examinations.

**Specialised workplaces:**

- Magnetic resonance – three devices: testing the whole range except spectroscopy
- CT – three machines with 64 rows of detectors (of which one is „Dual source“)
- New modern angiography Toshiba's Infinix
- Mammography, mammary sonography, stereotax, vacuum bioptome
- Sonography in both children and adults, Doppler sonography
- 6x fully digitized skiagraphy

**New methods and procedures – unique technological equipment:**

- CT angiography, 3D VR visualization
- CT cardio – imaging of the heart, CT coronarography
- CT creating Vol data for neuronavigation, ENT and stomatology
- MR new opportunities for examination of blood vessels, heart function tests, tractography, T2 relaxometry, examination of uncooperative patients, spectroscopy
- Prenatal US and MR diagnostics
- MAMO SONO workplace - ductography, cyst puncture and cut core biopsy under ultrasound control, puncture by device Vacora, preoperative localization by ultrasound and stereotactic navigation
- Radio-frequency ablation and chemo-embolisation of metastases in the liver and lungs
- Implantation of aortal stentgrafts, subintimal recanalisation of peripheral arteries in the lower extremities, treatment of acute and chronic deep venous thrombosis, treatment of vascular accesses to haemodialysis, introduction of translumbar catheters
- Treatment of cerebral malformations in both children and adults
- Ultrasound equipment Toshiba Aplio software, which enables the use of diagnostic contrast agents, especially for dynamic diagnosis of focal liver lesions in particular. This examination plays an important role in children, which avoids radiation load on CT
- Extended use of dictation systems
- Polycom videoconferencing equipment put into service, held the first conference facilities in Czech Republic and other European countries

**Important event in 2012:**

- In 2012 were new fully equipped children's diagnostic center adjusted exposures for paediatric patients in collaboration with paediatrics hospital in Graz.
- In 2012, the department worked at local radiological standards as controlled documentation of all sources of ionized radiation. During 2012, the department produced quality indicators.
- In collaboration with prof. Rainer Rienmüller from University Hospital in Graz, the department organized the 1st European Tutorial of Radiology in Prague. It was a unique course on the national scale and a lot of prominent experts in the field of radiology from the Czech Republic and Europe contributed on it.



## Department of Biology and Medical Genetics of 2nd Faculty of Medicine, Charles University and Motol University Hospital

Head physician: Prof. Milan Macek, MD, PhD

Senior consultant: Marie Havlovicová, MD

Senior laboratory technician: Hana Stouhalová

### Basic characteristics:

This department provides a wide range of preventive and diagnostic medical care in the field of genetics. It determines diagnostics of selected congenital developmental disorders, hereditary tumors, neurodegenerative diseases in children and adults, including disorders of mental development in both prenatal and postnatal periods. The department solves projects in the field of biomedicine research, participates in the undergradual, postgradual and specialising education of doctors and health care professionals, cooperates with a number of foreign workplaces. It also solves a number of projects of the 7th OPPK Framework Program and the European Commission in the field of medical genetics. In 2012, the outpatient´s of our department provided care for 8,449 patients /5,119 families and we have terminated 25 pregnancies from the genetic indications.

DBMG laboratories are accredited by the Czech Institute for Accreditation (CIA) based on the assessment of compliance with the accreditation criteria of the standard DIN EN ISO 15 189 The accreditation is molecular-genetic and cytogenetic examinations.

DBMG Laboratories are also recorded in the registry of clinical laboratories authorization of the National Centre for Clinical Laboratory at Czech Medical Society of Jan Evangelista Purkyně and hold a certificate of compliance audits and the expertise for clinical biochemistry and medical genetics.

Center of Reproductive Genetics DBMG obtained a license for the tissue establishment from the State Institute for Drug Control.

### Specialised outpatient facilities:

- Prenatal genetic consulting
- Neurogenetic consulting
- Genetic consulting for sensoric disorders and non-syndromic deafness
- Genetic consulting for microdeletion syndromes
- Genetic consulting dealing with dysmorphology
- Genetic consulting for infertile and infertile couples
- Genetic consulting for mental retardation and autism
- Genetic consulting for thrombophilic conditions
- Genetic consulting for gastroenterology and hereditary pancreatitis
- Genetic consulting for cystic fibrosis – solved in the section of the Centre for CF

### New methods and procedures:

- Further extension of diagnostics by FISH microdeletion syndrome (15q13.3, several on chr. X, 17q21.3, Alagille syndrome, Langer-Gideon syndrome, de-

letions of the gene COL1A1 on 17q21.33.).

- Microdeletion syndromes - a set of probes is continuously expanding and we are able to hybridize all important loci of human genome.
- Refining diagnosis of sub microscopic aberrations using array CGH different types of oligonucleotide chips by Bluegenome tested. Diagnosis of new micro deletion and micro duplication syndromes based on the results of array CGH: Genomicthe 1q21.1, 15q26, 16p11.2, 16p12.1, 17q21.31, 14q22.3, 16q24.1. In indicated cases are used most accurate commercially available chips for aCGH - oligo 4x180K with loci for testing loss of heterozygosis.
- Department has extended molecular genetic diagnosis group of dysmorphic syndromes with an increased risk of cancer: Noonan syndrome, Costello and CFC. New connection analysis of genes HRAS, NRAS, MEK1, MEK2 and SHOC2.
- In Czech Republic was introduced DNA analysis of genes - SCA28 and SPG7 in patients with ataxia, ATP1A3 (DYT12) in patients with dystonia, CHD7 in CHARGE syndrome, ZEB2 with Mowat-Wilson syndrome, DMD / BMD patients with Duchenne / Becker muscular dystrophy and NF1 patients with neurofibromatosis.
- Since 12th of November used new QFPCR kit Devyser Complete - in 2, 1.2 mix for rapid screening of chromosomal aneuploidy.
- The department performs a molecular genetic analysis of polymorphisms in the gene for the FSH-receptor in hormonal stimulation in assisted reproduction.
- Vitrification of embryos after in vitro fertilization system Vitrolife Rapid-i.
- Examination of Y chromosome microdeletions in patients with impaired spermatogenesis newly using putty Devyser AZF, leading to expansion of the number of examined markers.
- Array CGH method for diagnosis of aneuploidy at blastomeres and polar bodies
- Reliability method aCGH (oligo kits) for quick diagnosis of aneuploidies of chromosomes by MLPA method using pericentromeric and subtelomeric probes, additional options QFPCR or MLPA, investigating only chromosomes - 13,18,21, X, Y was confirmed.
- More accurate diagnosis and assessment of risk of OHSS combined examination of genotypes and Asn680 Ser -29 A / G.
- The department developed a new DNA diagnosis of most common polymorphisms in the gene for LH and LH receptor-Ins LQ and As291/Ser to refine individualized hormone therapy, FSH and LH.
- Introduced a new method of screening for severe preeclampsia in the first trimester examination of placental growth factor PLGF.

### Unique technological equipment:

- Special software of MetaSystems company for the caryotype evaluation and FISH;
- HYBEX – hybridisation device not only for CGH array evaluation;

- Special software for CGH array evaluation;
- Bioanalyser 2100
- inverted microscope Leica AM6000 with Eppendorf micromanipulator Transferman
- laminar box Labox FBB 120 for assisted reproduction
- incubators Embryoscope
- system of continuous monitoring Octax OCTAX Log + guard pH Online
- system of continuous monitoring (KESA)
- inverted microscopes Nikon TE2000

#### **Important event in 2012:**

- Establishment of the National Coordinating Centre for Rare Diseases at Motol University Hospital DBMG.
- Establishment of Centre for the diagnosis and treatment of paediatric and adult patients with cystic fibrosis at DBMG and Paediatrics, Motol University Hospital
- Elaboration of the National Action Plan for Rare Diseases (Government Resolution No. 633 of August 29, 2012) by staff of DBMG FN Motol.
- Elaboration of recommended clinical procedures for hereditary cancer predisposition approved by genetics and Czech Society for Oncology staff of DBMG FN Motol.

### **Department of Clinical Biochemistry, 2nd Faculty of Medicine, Charles University and Motol University Hospital**

*Head physician: Prof. Richard Průša, MD*

*Senior consultant: Jana Čepová, MD, MBA*

*Senior laboratory technician: Mgr. Martina Bunešová*

#### **Basic characteristics:**

The department's laboratory provides over 220 different laboratory examinations. A daily average is about 2,230 biological samples, i. e. 596,412 examinations per month in a 24 hour three shift operation. A number of examinations (MTX, cyclosporine A, tacrolimus, sirolimus, lead, platinum, antimycotics, busulfan, IGF-1 etc.) is performed also for other health institutions. A total number of outputs in 2012 amounted to 7,156,950, which is, by 4% than in 2011. Another section of the department are specialised outpatients facilities focused on hyperlipoproteinemia-related problems, disorders of bone metabolism, nutrition disorders in terms of obesity and malnutrition. In 2012 we treated 6,676 patients in outpatient clinics. The department addresses several grants within scientific research activity.

#### **Specialised outpatient facilities:**

- ambulance dealing with treatment of hyperlipoproteinemia
- ambulance dealing with bone metabolism
- ambulance dealing with nutrition

#### **New methods and procedures:**

- Radioimmunoassay of anti-insulin antibody (anti-IAA)
- Introduction of new parameters in the chemical and microscopic analysis of urine
- Introduction of mutations and examination of risk polymorphisms of atherosclerosis and cardiovascular events by PCR with reverse hybridization
- Determination of chloride in sweat
- Determination of polymorphisms in the genes CYP2C9 and VKORC1
- Determination of SAA (serum amyloid A)
- stat intact PTH during surgery
- capillary electrophoresis of serum proteins

#### **Unique technological equipment:**

- new blood gas analyzer Rapidlab 1245
- Radiometer ABL 837 Flex (at the neonatal intensive care unit)
- Radiometer ABL 825 Flex (2x ARKD2 - replacement for NOVA SP CCX)
- gas chromatogram, coulometer

#### **Important event in 2012:**

- Merging of the Institute of Clinical Biochemistry 2nd Faculty of Medicine and Motol University Hospital with the Institute of Medical Chemistry 2nd Faculty into the Department of Medical Chemistry and Clinical Biochemistry 2nd FACULTY OF MEDICINE, CHARLES UNIVERSITY AND MOTOL UNIVERSITY HOSPITAL.
- Successful completion of the internal audit needs Blood Bank Motol University Hospital (hepatitis, HIV) - SIDC 12/2012
- Successful completion of internal audit quality assurance program for dealing with ionizing radiation - 10/2012
- Training of managerial staff Quality Management - Internal auditor according to ISO 15189 - 10/2012.
- Award lectures, MD. Tesfaye price of the BEST PAPER CONFERENCE, WSEAS, Kos, Greece.
- Czech Society Award of Clinical Biochemistry „for teaching and learning in the field of clinical biochemistry and laboratory medicine in 2011“ to doc. Dr. P. Stern, MD. and collaborators for teaching texts in general and clinical biochemistry for undergraduate courses of study
- Honorary membership for prof. MD. R. Prusa, PhD. the Czech Society of Clinical Biochemistry
- Monograph Guide laboratory findings, the authors R. Prusa et al., (RAABE, Prague, 2012), ISBN 978-80-87553-68-8
- ESF project operating in the Czech Republic, the EU and the Ministry of Education, Investing in Development Education Clinical Biochemistry - an innovative and interactive e-learning lessons

## Department of Immunology, 2nd Faculty of Medicine, Charles University and Motol University Hospital

Head physician: Prof. Jiřina Bartůňková, MD, MBA

Senior consultant: Prof. Hana Šedivá, MD

Senior laboratory technician: Bc. Anna Skalická

### Basic characteristics:

Department of immunology provides full care for both paediatric and adult patients with immunopathological conditions including clinical and laboratory examination as well as dispensary care. Besides the outpatient examination and treatment in the full extent of allergology and clinical immunology, the department provides also a regular therapy and infusion application of the indicated drugs in serious immune disorders at the ward for both paediatric and adult patients. It serves as a basis for pre- and postgraduate education of immunology and is also concerned with research in the same discipline.

The outpatient facilities in 2012 examined 15,320 patients and the laboratories carried out 250,766 examinations of 36,794 patients.

### Specialised outpatient facilities for:

- Immunodeficiencies
- Allergies and autoimmune diseases
- Short stay ward for the therapy of immunopathological conditions
- Super-clean premises for the production of antitumorigenic vaccines and specialized outpatient clinic for their application in clinical studies

### New methods and procedures:

- Extended possibilities of diagnostics of severe immune disorders mainly in examination methods of cellular immunity
- Expansion of examination spec. IgE with molecular allergens Bet v1 and v2
- Production of cancer vaccines (active cellular immunotherapy) and its application in clinical phase I / II
- Expansion of home-care supervision in subcutaneous immunoglobulin
- Clinical studies of immunoglobulin preparations
- Centre for the treatment of difficult asthma treatable Preparation Xolair (anti-IgE antibody), a center for the treatment of hereditary angioedema Preparation Firazyr (bradykinin receptor inhibitor), a center for the treatment of subcutaneous immunoglobulins

### Unique technological equipment:

- Completely equipped laboratory for flow cytometry
- Microscopic workplace including confocal microscope and scanning cytometer

- Clean rooms accredited by SIDC, used for the production of anti-cancer vaccines

### Important event in 2012:

- Takeover allergy and paediatric surgery department of the original vaccination centres child health centres under the Department of Immunology
- Continuation phase I / II clinical trials Immunotherapy for prostate cancer using a vaccine based on dendritic cells in prostate cancer Eudra-CT 2009-017295-24 and Eudra-CT 2009-017259-91
- Continuation phase I clinical study of immunotherapy of ovarian cancer by vaccination with dendritic cells Eudra CT-2010 -021462-30
- Approval of Phase I clinical study of immunotherapy of ovarian cancer vaccination using dendritic cells Eudra CT-2010 -021462-30
- Project initiation of Adoptive T cell immunotherapy for prostate cancer
- Management of the immunodeficiency center of the worldwide network of centers Jeffrey Modell Foundation, USA

## Department of Medical Microbiology, 2nd Faculty of Medicine, Charles University and Motol University Hospital

Head physician: Ass. Prof. Pavel Dřevínek, MD, PhD.

Senior Consultant: Otakar Nyč, MD, PhD.

Senior laboratory technician: Bc. Vilma Klemensová

### Basic characteristics:

Department carries out laboratory diagnosis of bacterial, viral, fungal, parasitic infections. It also provides consulting services in the antibiotic therapy, differential diagnosis of infections and infectious complications. Cooperation in monitoring the incidence of nosocomial infection and monitored for abnormal profiles of antibiotic resistance. It is connected to the European system of surveillance and antibiotic resistance in European studies to monitor the incidence of infections caused by *Clostridium difficile*. Through representatives of the CCC NAP and SKAP CLS JEP is actively involved in the implementation of antibiotic policies in the country. In 2012 the department reported a total of 116,272,552 points.

### New methods and procedures:

- Diagnostics (i) based on PCR: panel 16 respiratory viruses, enteroviruses, panfungal PCR, micromycetes and candidates, (ii) using immunochromatography: astroviruses
- Detection of virulence factors and resistance genes: (i) PCR: MRSA and PVL in *S. aureus*, (ii) MALDI-TOF: carbapenemase
- Molecular typing: *C. difficile* (for the needs of the Czech Republic), *P. aeruginosa* and *B. cepacia* complex (chronic infections in patients with cystic fibrosis)



- Demonstration of neutralizing antibodies against drugs type beta-interferon for MS center CR

#### **Unique technological equipment:**

- Insulator of nucleic Acids for PCR diagnostics Qiacube
- Anaerobic box JOUAN
- IF BX 53 Olympus microscope equipped for photographic documentation
- MALDI-TOF: mass spectrometry equipment for quick and highly reliable identification of bacteria and fungi.
- PCR cyler with high resolution melting analysis

#### **Important event in 2012:**

- Active participation of DMM staff at international conferences: ICAAC (San Francisco 2012); Isha (Berlin 2012); EBMT (Geneva, 2012); Workshops Staphylococci and Staphylococcal Infections (Lyon 2012); IBCWG (Montreal 2012), ECFC (Dublin 2012), workshops CMV (San Francisco 2012)
- Publishing Activity: 11 foreign papers are published, one chapter in foreign monographs, 12 articles in Czech journals, 8 chapters in Czech memoir.

### **Department of Pathology and Molecular Medicine, 2nd Faculty of Medicine, Charles University and Motol University Hospital**

*Head physician: Prof. Roman Kodet, MD*

*Senior consultant: Daniela Kodetová, MD*

*Senior laboratory technician: Vladimíra Kratinová*

#### **Basic characteristics:**

The department is concerned with diagnostics of various types of diseases. It employs methods of classical histology and cytology combined with other special laboratory methods. In 2012, a total of 25,224 patients were examined which represents 450,794 histological slides. The department is both undergraduate and postgraduate teaching workplace. The autopsy section of the department has educational and supervisory functions in the frame of the hospital.

#### **Specialised laboratories for:**

- Electron microscopy
- Immunohistochemistry
- Diagnostics of neuromuscular diseases
- In situ hybridisation
- DNA and RNA analysis
- cytology
- Biopsy
- Necropsy
- pulmonary cytology

#### **New methods and procedures:**

- Since 2008, the Institute is part of the so-called predictive pathology laboratory, which is to deal with the investigation of patients with mammary carcinomas and colorectal carcinoma with regard to the indication for biological treatment.
- Complex screening of the GIST tumours, morphological and molecular diagnostics
- New diagnosis of lung cancer by PCR EGFR gene mutations and breaks ALK gene.
- Analysis of clonality, which uses the STR locus in a gene HUMARA and methyl sensitive restriction enzymes
- Application of new immunohistochemical methods for diagnosis of tumours.

#### **Unique technological equipment:**

- Cyclery for real-time PCR

#### **Important event in 2012:**

- Project institutional support for science of The Ministry of Health of the Czech Republic continues in 2012 at a good level, overall IF for 2012 was 46,457.
- European Congress of Pathologists (ECP) in Prague, the preparation of which involved medical institute.

### **Department of Clinical Haematology Motol University Hospital**

*Senior consultant: Ivana Hochová, MD*

*Senior laboratory technician: Naděžda Hanusová*

#### **Basic characteristics:**

The department is divided into two parts, laboratory and clinical.

The laboratory performs routine and special haematology tests to Motol Hospital with supra-regional powers. In 2012, the laboratory conducted 720,358 performances. The laboratory is the reference laboratory for the diagnostics of paediatric acute myeloid leukaemia and myeloproliferative conditions in children. In adult haematology attention is focused on its morphological diagnosis of myelodysplastic syndrome.

The clinical part of the workplace includes an outpatient section for paediatric and adult part. The clinic is part of the adult day care centre serving the application of blood products and chemotherapy. A total of 11,500 patients were examined in 2012. The Department is teaching medical students and undergraduate students study -field technician.



**New methods and procedures:**

- Procedures for functional analysis of platelets
- Introduction to the methodology of the evaluation of new antithrombotic drugs
- More accurate and faster diagnostics of Willebrand's disease
- Morphological laboratory of the department participates in the International Study of the treatment of paediatric acute lymphoid leukemias Protocol – Interim ALL- BFM 2000
- Grant IGA 9905-4 Changes in coagulation parameters monitored during pregnancy - OKH participating in the project of the European register of patients with myelodysplastic syndrome (EUMDS), which is organized by European LeukemiaNet in cooperation with the European Hematology Association. The department is actively involved in activities CZECH MDS GROUP 2 times a year and holds morphology seminars nationwide.

**Unique technological equipment:**

- Coagulometer (ACL) for the examination of special coagulation tests
- Device for platelet function analysis (PFA Innovance 200)
- Hematologic line Sysmex XE-Alpha N
- Microscope (Olympus, Leica) with camera equipment

**Department of Clinical Psychology of Motol University Hospital**

*Head physician: Jaroslava Raudenská, Ph.D.*

**Basic characteristics:**

The department consists of 29 psychologists with various workloads in both adult and paediatric parts who provide preventive, diagnostic, psychotherapeutic and rehabilitation care for paediatric and adult patients, in- and outpatients and their families in UH Motol.

This department examines annually 13 000 patients. It is accredited by the Czech Ministry of Health in the field of Clinical Psychology and Paediatric Clinical Psychology.

**Specifics of the department:**

- On-going long-term research plan of the quality of life of patients with chronic pain in collaboration with the Centre for Treatment and Research of pain and other workplaces.
- Superregional importance has contributed to research the psychological diagnosis of patients with epilepsy in collaboration with the Center for epilepsy and cognition research in cooperation with the Board of cognitive Neurological Clinic.
- The department is involved in research of food intake and suicidal behavior in collaboration with child psychiatric clinic.

**Important event in 2012:**

- Department organized 10 seminars accredited system of lifelong education in a registered clinical psychologist.
- Employees are actively attended lectures at national and international psychological, psychiatric, psychosomatic and somatic congresses.
- Bibliography: 4 articles in foreign journals with IF, 3 articles in peer-reviewed international journals, two articles in journals with IF Czech, Czech 2 articles in peer-reviewed journals, 4 chapters in books, 10 abstracts, 1 educational guide.

**Blood Bank Department of Motol University Hospital**

*Senior consultant: Květoslava Petrtýlová, MD*

*Senior laboratory technician: Mgr. Martin Matějček*

**Basic characteristics:**

It provides purchasing, storing and expedition of all types of transfusion preparations for patients of UH Motol. In 2012 there was dispatched a total of 44,080 T.U. of all types of transfusion preparations, of which 20,720 erythrocytic preparations, 19,786 of plasma T.U., 3,429 thrombocytic preparations T.U. and granulocytic TP 145 T.U.

The blood bank department carries out basic and special immunohaematological investigations according to requirements of clinics and departments, prenatal examinations for pregnancy counseling Gynecol-obstetric clinic and if needed, it procures transfusion preparations for the intrauterine and replaceable transfusion.

In 2012 was carried out a total of 9,547 of pretransfusion basic tests (blood group), 18,564 antibody screening and 36,975 compatibility tests. Number of specialized immunohematological examinations raised compared to 2011 by nearly 15% to 984 (841 in previous year). Number of irradiation of blood components raised compared to 2011 – 7,734 irradiations.

In the field of autologous donations are carried out mostly blood taking of autologous full blood for patients of orthopedic clinics of Motol Hospital and for patients of hospital na Homolce. In 2012 were carried out a total of 600 autologous donations. The department provides instruction in the 2nd Faculty of Medicine and pre-and post-graduate study in transfusiology for doctors and NZO.

**Specific features of the department:**

- Laboratory section
- Autotransfusion section
- Irradiation device for irradiation of transfusion preparations

**Unique technological equipment:**

- blood cell separator COM.TEC

**Important event in 2012:**

- Authorisation by SIDC of the production of raw materials for further processing LP

**Department of Rheumatology for children and adults**

*Head physician: Pavla Vavřincová, MD, PhD.*

**Basic characteristics:**

Department of Rheumatology for children and adults provides diagnosis, treatment and dispensarization of child and adult patients with rheumatic and other autoimmune diseases. The department provides consulting service for MUH departments as well as for others out of Prague. During 2012, 3,275 outpatient treatments were performed.

**Specific features of the department:**

- The department embodies 2 national centres for biological treatment of rheumatology patients - for children and for adults. Laboratory results and clinical data of patients treated are registered in the ATTRA project, organized by the Institute of Rheumatology in Prague and specialized department of Masaryk University in Brno.
- The department carried out 17 international studies, most of which have been or is involved in clinical international, randomized Type II projects. or III.
- The department is involved in two long-term international projects: P10-262 study to verify the long-term safety and efficacy of Humira in patients with active juvenile idiopathic arthritis (JIA) of polyarticular type; study M 10-444, focused on the treatment of patients with JIA aged 2 - 4 years.

**New methods and procedures:**

- The use of biologic agents certolizumab, golimumab and tocilizumab in patients with rheumatoid arthritis.

**Important event in 2012:**

- In 2012, the separate Department of Rheumatology for children and adults was established and moved to more suitable facilities.
- Employees are actively involved in the presentation of results of ATTRA project in the Czech Republic and abroad on the soil of EULAR and the ACR congresses.

**Department of Central Operating Theatres for Paediatric Patients of Motol University Hospital**

*Head physician: Karel Klíma, MD, Ph.D.*

*Head nurse: Drahomíra Fryčová*

**Basic characteristics:**

The department concentrates all surgical interventions of all surgical as well as non-surgical disciplines from the paediatric part of the hospital with the exception of cardio surgery, in the field of ophthalmology it ensures also surgeries of adult patients. A total number of interventions in 2012 was 7,358. Department carried out 215 of orthopaedic surgeries in adult patients.

**New methods and procedures:**

- Department continues to be made in accordance with the Act. 123/2000 Coll. thorough documentation of all equipment in the patient's medical history, including documentation of sterile supplies and instruments.
- Department prepared the transition of sister operating protocol to electronic form.
- Routine preoperative is consistently implemented safety procedure.
- Disposable surgical masks for all types of operations without exception yielded statistically lower incidence of postoperative complications.
- Based on the results of a comparative study carried out by employees of COS children were transferred to a single preoperative skin disinfection preparation Betadine, which virtually eliminates skin reactions.
- In the second wave, new devices were put into operation in the new operating rooms this year. The result is a high-tech fully centralized facility for all types of surgery in children.

**Unique technological equipment:**

- Neuronavigation, devices for mini-invasive laparoscopic, arthroscopic and endoscopic techniques, ultrasonic aspirator crusher and tumor masses, harmonic scalpel, surgical microscopes, special ultrasonic crusher and extractor lens materials for ophthalmology.

**Important event in 2012:**

- Nurses of the department participated in the conference „Towards modern nursing“. Four nurses have successfully completed post-secondary study program and one nurse acquired bachelor's degree.
- Head physician Klíma gave a lecture on ČSARIM Congress with international participation in Hradec Králové.

## Department of Central Operating Theatres for Adult Patients of Motol University Hospital

Senior consultant: Petr Příklad, MD

Head nurse: Petra Šebestová

### Basic characteristics:

The department provides a background for 9 of 11 surgical workplaces of the adult part of Motol University Hospital; it supplies about two thirds of the personnel. In 2012, 18,545 of interventions were performed. The department also organises further study of nurses in the specialisation of perioperative care.

### New methods and procedures:

- The Surgical Clinic of the 2nd Faculty of Medicine and Motol University Hospital started using the central hall plastic surgery. Regarding the publication was prepared the book „The nurse in perioperative care“ J.Wichsová et al.
- An analysis of operational tools by B.Braun Company as a first step towards the standardization and optimization of operational networks, with the same partner is preparing a pilot project management system operating rooms and sterilization Medix.

### Important event in 2012:

- Mgr. J.Wichsová spoke on VIII. International Congress prevention of nosocomial infections with the statement „Infection at the surgical wound,“ which was later edited and published in the journal Nosocomial infections.
- Regarding the publication was prepared the book „The nurse in perioperative care“ J.Wichsová et al

## Transplant Centre of Motol University Hospital

Head physician: Jaroslav Špatenka, MD

### Basic characteristics:

The centre forms an organizational background for individual workplaces so that they can carry out collections of organs and tissues, transplantations of the kidneys in children and lung transplantations. It cooperates with a Coordination transplant centre (CTC), with all regional TC in the CR and with the Czech Ministry of Health. It is responsible for the specialised tissue bank (STB 85) which is concerned with collection, processing, storing and distribution of cardiovascular tissue from dead donors and bone tissue from living donors. The programs of kidney transplantations in children, collection and lung transplantations and the bank of cardiovascular tissue work with a national competence. In 2012, 7 multi-organ collections from dead donors and 11 kidney transplantations in children were performed (of which one from a living donor) and 21 lung transplants. To bank of cardiovascular tissue were taken 46 hearts and 72 issued transplant grafts to transplant heart valves.

### Important event in 2012:

- Cardiac Surgery of University Hospital Hradec Kralove, in cooperation with our department published their own modification of Ross operation (European Journal of Cardiothoracic Surgery).
- In an animal experiment developed by the transplant team, led by prof. Lischke method of „ex-vivo lung perfusion“ so that it is ready to begin clinical use. The aim is to expand the pool of donor lungs, allow to realize a greater number of lung transplant patients and to reduce mortality on waiting list.

## OUTPATIENT SECTION

### Emergency Department for Children of Motol University Hospital

Head physician: Marie Mikulecká, MD, MBA, Ph.D.

Head nurse: Zdena Čechová

### Basic characteristics:

The department provides a comprehensive evaluation and treatment of acute conditions of children in an unfinished 19th year of life. In service there are paediatric outpatient departments as well as department surgical, ENT, orthopaedic, oral surgery, ocular and neurological. These outpatient departments work during emergency hours, in the morning shift work podiatric departments for acute paediatric conditions, with the exception of those that are brought in by ambulance and treated in the emergency reception SP. During morning shift is also in service paediatric department for foreigners.

Under Medical first aid service were performed a total of 16,237 paediatric examinations in 2012, 21,367 examinations performed by other disciplines, which makes together total of 37,604 examinations. In the emergency intake on both floors, a total of 14,002 examinations were performed. Department as a whole reported 51,606 examinations.

### Unique technological equipment:

- Laboratory equipment enabling rapid diagnosis of diseases indicative directly in the emergency intake.



## Department of Dermatovenerology of Motol University Hospital

Head physician: Alena Machovcová, MD, MBA

Head nurse: Bc. Helena Janoušková

### Basic characteristics:

This is an outpatient department with no connection to the inpatient department of Motol University Hospital. The department provides basic and specialised outpatient and consulting care in the field of dermatovenerology focused on dermato allergology and profession-related skin diseases, prevention and treatment of skin cancer and treatment of psoriasis. In a year 2012, 7,267 patients were treated on an outpatient basis and 24,085 treatments were performed..

### Specialised outpatient facilities for:

- Venereology
- Pigmentary nevi and skin tumours
- Dermatoallergology and professional dermatoses
- Corrective dermatology
- Lymphology
- Acne consulting
- clinic for patients after organ transplantation
- Short stay ward for lamphology
- Short stay ward for phototherapy
- Flebological ambulance
- Clinic for diagnosis and treatment of diseases of nail

### New methods and procedures:

- Examination of pigmented lesions by digital dermoscope
- Examination of the skin perfusion with the PeriScan PIM II device
- Laser surgery corrective and aesthetic dermatology

### Unique technological equipment:

- Digital dermoscope, Digital videocapillaroscope PeriScan PIM II, high-performance laser photons XS Erb: YAG and Nd: YAG.

### Important event in 2012:

- A. Machovcová: How to skin allergies? Hormonal, non-hormonal treatment according to evidence based medicine. ALLERGY 2012. Spring Czech Society of Allergology and Clinical Immunology. Prague, March 8th, 2012.
- A. Machovcová: What is hidden in cosmetics. World Asthma Day. Czech Initiative for Asthma. Prague, May 4th, 2012.
- A. Machovcová: Cutaneous lymphomas: classification and treatment options. National Symposium for the 90th Anniversary CDs and SDS. Prague, November 8th, 2012.

## Dermatological Department for Children

Head physician: Štěpánka Čapková, MD

### Basic characteristics:

Department composed of two clinics treats patients in a field of paediatric dermatology and not only provides consulting services for all inpatient children's department of the hospital, but also superconsiliary service for the whole country. In 2012 there were treated 9,100 patients aged 0-19 years.

### Specific features of the department:

- Doctors provide specialist advice (for emergency patients with severe atopic eczema, neve disease, genodermatozy, hemangiomas). In 2012, in cooperation with pharmacy MUH and the Department of Paediatric Haematology and Oncology our department introduced new treatment of superficial hemangiomas - a non-selective beta-blocker propranolol locally. Treatment was introduced for five months after the first publications in the world literature.

### Important event in 2012:

- Prim. MD. Čapková received in November 2012 President's Award of the Czech Medical Chamber (CLK) for the year 2012 „for her contribution in the field of lifelong education of physicians.“ In the course of 23 lectures on paediatric dermatology courses CLK, on Czech Society of Dermatology events in graduate courses Postgraduate and events of Associations practitioners for children and adolescents.

## Emergency Department for Adults of Motol University Hospital

Head physician: Jiří Zíka, MD

Head nurse: Bc. Renáta Všetěčková

### Basic characteristics:

The department provides emergency medical care to patients with sudden health disorder, forms a link between prehospital and acute hospital definitive care.

The main feature of the work is the sorting patients according to the acuteness and urgency of care and according to the nature of ill health so as to effectively ensure the provision of additional care in the hospital. Patients who were not accepted on a hospital bed in the emergency intake are definitely treated and discharged to outpatient care. At the same department provides quick service in a case of sudden deterioration in health and operates throughout the complex MUH as well as in non-medical areas of the building. During 2012, 16,040 patients were treated there.



## Department of First aid for Adults of Motol University Hospital

Head physician: Jiří Zika, MD

Head nurse: Bc. Dana Černá

### Basic characteristics:

The Department provides an outpatient treatment of acute patients with sudden health disorder after regular working time, to the extent of general practitioner care medicine. On weekdays, one doctor and one nurse have office hours, on weekend shifts are reinforced by another doctor.

When it is necessary, patients are referred for further treatment at the emergency department or specialized outpatient ambulances of the hospital. During 2012, 13,846 patients were treated there.

## Department of Primary Care of Motol University Hospital

Head physician: Jaroslava Kulhánková, MD

Head nurse: Dana Černá

### Basic characteristics:

The department provides both acute and long-term preventive care for the employees, patients registered under capitation from other hospitals, foreigners insured as well without health insurance with the Czech insurance companies and over-standard care for with Czech insurance. The department is a undergraduate and postgraduate educational workplace; it is accredited in the field of General medicine.

In 2012, the Dept. of Primary Care had 25,347 patients.

## Department of Hygiene and Epidemiology of Motol University Hospital

Head physician – epidemiologist: Vilma Benešová, MD

Senior hygiene technician: Mgr. Jana Hrončková

### Basic characteristics:

Activities of the department lie in the application of hygiene and anti-epidemiological care in the specific conditions of the MUH. The priority is the prevention of hospital infections, measures to reduce their incidence, control of the local surveillance and privacy of health in health care.

### Specifics of the department:

The total number of nosocomial infections (NI) of all Division 1,126, ie 1,32 % of total NI released from hospital treatment. It is an increase (from 2011), even if not reality, this indicates an improvement in communication with clinicians and contact physicians for NI and the positive impact of the educational program in general. In 2012 we registered 112 new seizures of MRSA both colonization and with symptoms of infection, which corresponds

to 1,31 per 1 000 patients and indicates a slight decline during last three years. According to current legislation was controlled sterilization technique, made tests against sanitary code of workplace clinics and departments and 640 control handprints were collected for microbiological examination and 3,805 swab to control bacterial environmental cleanliness. Particular attention was paid to the clear spaces, which are regularly monitored by Air Sampler (140 samples). Part of current sanitary surveillance is a prevention of the occurrence of legionella. Total of 282 investigations were performed for diagnosed infections in hospitalized patients, 205 investigations of reportable diseases, in cooperation with public health authorities dealt with a total of 280 community infections. Constitutional disinfector performed 345 spatial disinfections. Our department conducted 299 internal hygiene audits of workplaces.

### New methods and procedures:

- Indicator of quality introduced - monitoring compliance of hand hygiene through whole hospital. Data are available since 2010.
- Cooperation with the Department of Preventive Medicine 2nd FACULTY OF MEDICINE, CHARLES UNIVERSITY AND MOTOL UNIVERSITY HOSPITAL – review compliance with hand hygiene in the framework of WHO. Department rated 17 clinics and 250 health professionals.
- Continued cooperation with Aesculap Academy in education and activities related to the promotion of safety of a medical personnel.

### Important events in 2012:

- The UH Motol held the third annual World Day of hand hygiene; novelty was the extension of this activity to the children's section of the hospital.
- The laboratory was equipped to check the effectiveness of sterilizers by another incubator.
- Department participated of the 5th of accredited course Work in the field of hospital Hygiene and Epidemiology and 2nd part of lectures Management and prevention infection control in healthcare facilities.
- Department represented the hospital at the event SestraFest 2012.

## Pharmacy of Motol University Hospital

Head pharmacist: PharmDr. Petr Horák

Head pharmaceutical assistant: Jaromíra Mariašová

### Basic characteristics:

The pharmacy's priority is to provide effective, quality and safe pharmaceuticals for both hospitalised patients and outpatient clients of UH Motol. The hospital pharmacy provides medicament distribution and individual and collective preparation of sterile medicaments (from the group of cytostatic agents, parenteral medicines without antimicrobial agents and others) and non-sterile (in particular the preparations for paediatric patients), the acquisition of unregiste-

red medicines and provision of medicines for clinical trials.

Pharmacy provides consulting services for patients and health professionals and educational activities, incl. providing internships for students pre and post-graduate.

The hospital pharmacy is involved in formulating medicament policy of MUH - the establishment of a positive list of medicines, ensuring the most cost-effective medicines, etc. It also creates the internal regulations of the Motol University Hospital in the handling of medicaments.

Hospital pharmacy in the ordinary everyday issues about 10,000 packages of medicaments and prepare several hundred individually prepared medicines, including about 150-200 of cytostatic infusions and 30 pieces of individual parenteral nutrition.

In 2012, the pharmacy prepared 9834 samples of individual parenteral nutrition, 278,620 pieces of capsules with drugs and 33,000 cones. Pharmacy started 55 new clinical evaluations involving hospital pharmacies and processed more than 90,000 requests (requisitions) from the clinical departments.

#### **Important events in 2012:**

- Completion of the first stability studies individually prepared drugs (propranolol solutions).
- Purchase of device for the preparation of parenteral nutrition Baxa Exacta-Mix2400

## Nursing care

In compliance with the development of health care, we continued in improving of the quality of care and patients' safety while providing nursing care in the year 2012. We supported the development of a multidisciplinary care through the teamwork of general and pediatric nurses, midwives, physical therapists, nutritional therapists and physicians.

We evaluated the quality of provided care from several points of view, using the audit focused on activities and processes, surveys of patients' satisfaction and quality indicators / falls, pressure ulcers/. In the assessing of the indicators we extended the field of the objective evaluation and focused mainly on preventive measures, including education and communication. In the second half of the year, we launched a project dealing with the issue of reducing the incidence of nosocomial infections in connection with the implementation and management of central venous access. Continuous updating of the nursing standards and guidelines for the improvement of the patient's care is already a commonplace.

In 2012, we completed an introduction of educational activities within the project „The development of communication and management skills of health care providers“ as one of the prerequisites for continuous improvement of health care quality and patients' satisfaction. A seminar focused on the fundamentals of pro-client communication, was attended by 1,572 employees. An innovation course aimed to the management, focused on increasing of the patients' satisfaction, was attended by 131 non-medical employees at the first level of management. Both training sessions met their expectations. For health care providers, the convenient conditions for changing of the management and communication style in direct patient's care were created.

## Social care

Social workers provided social care, consultancy and a wide range of help for almost 3,200 adult and paediatric patients in 2012. The total of 1,257 patients were hospitalized in the subsequent rehabilitation care department. Also, 134 patients from the hospital long-term patients were placed in residential facilities which provide social services. The department participated in the community planning within the municiple of Prague 5.

## Spiritual care

In 2012, spiritual care was through the chaplains provided for 3,153 clients. Compared to the previous period, the number of consultations was almost doubled. It is evident that the steadily increasing interest is not only a matter

of patients, but also their relatives and staff. Also medical staff begins to pay more attention to the spiritual needs of patients. Dealing with spiritual needs becomes a natural part of a holistic view of a human being.

### Volunteers

In 2012, a total of 366 volunteers were registered in the Motol University Hospital. The volunteers were working in the hospital together for 4,644 hours and they paid attention to 6,531 paediatric and adult patients. Among popular activities belonged the Color hospital program, the Post for joy and the Beading.

### Healthy hospital

In 2012 we joined the international project „Recognition Process“. Specifically, the Department of Pneumology second 2nd Faculty of Medicine, Charles University and Motol University Hospital was chosen for the hospital. On a random basis, we were assigned to the control group of the project and in April 2013 we will actively participate.

The hospital, in cooperation with the 2nd Faculty of Medicine, Charles University monitors a prevalence of smoking in the hospital through a questionnaire.

## Quality management

After reaccreditation in the end of 2011 by the United Accreditation Commission (UAC) our hospital faced a new challenge. The Act 372/2011 on health services came into force and soon after came implementing regulations. Legislative changes supported our long-term activities by which we acquired and defended the accreditation certificate of the UAC. New legislation had to be transferred into internal measures of the hospital. The entire year 2012 was therefore marked by revisions of orders and directives in order to apply the provisions of the Act and regulations into control hospital documentation. The legislative process is not completely smooth, already during 2012 occurred amendments, and therefore the updating of internal hospital regulations will extend into the next year. The UAC came also with a change. It prepared a new edition of the standards, and we expect further changes in their implementation in the next year.

An important innovation in 2012 was the introduction of a mandatory reporting of adverse events of the IHS. Hospital has effectively responded to this development. By the decision of the director a team of quality managers was created. Every department has its team of representatives involved in the collection and use of data for the quality management. In the laboratories series of NASKL II certification are carried out and in selected laboratories ISO certification and the ČIA.

Quality indicators show that improving of the quality and safety of health services has real results. In surveys of satisfaction are traditionally high ratings most important indicators of adult patients' satisfaction and ill children's escort. It is particularly confidence-inspiring work of our doctors and nurses, as well as their sensitive approach to pediatric patients, providing information on health status and pain relief.

Interesting is an employee satisfaction survey aimed at young doctors. The emerging physicians expressed 94% satisfaction with the work at the Motol University Hospital. The result suggests that the hospital managed to create the conditions for better and safer provision of health services.

## Scientific research activity

The Motol University Hospital (MUH) consistently and for a long-term supports scientific research activities that are found throughout the range of represented disciplines. In this activity the hospital uses the connection with the 2nd Faculty of Medicine and the co-operation with other research organizations in the Czech Republic and abroad. In accordance with the new trends in the application of the results of scientific research activities the MUH supports innovations and an implementation of results into practice.

Promotion of science, research and innovations in the MUH is realized by combined financing through institutional resources and assigned resources, which are mostly realized in the form of grants.

### Institutional support and research grants:

- Since 2012 the MUH is a recipient of an institutional support by the Ministry of Health. The institutional support of the research organization in the MUH is organized by the system of internal projects undertaken at individual clinics and hospital departments.
- In 2012, the MUH dealt with 17 projects of the Internal Grant Agency (IGA) of the Ministry of Health, as the principal investigator and 45 projects as a co-investigator. Within the institutional support 35 Internal grant projects have been addressed.
- In 2012, the financial means (in CZK) for science and research in the MUH were distributed as follows:

IGA investigator	24,060,000,- CZK
IGA co-investigator	17,575,000,- CZK
TA CR	1,081,000,- CZK
Institutional Support	53,333,000,- CZK

The obtained support for scientific and research activities was 96,049,000,- CZK in total.

- The support for research activities is directly related to the outputs of the RDI as reported in the national database of the Board for Research, Development and Innovation. Results from the BRI outputs are used firstly to a comparison within the Czech Republic, where the MUH holds one of the leading positions and secondly in relation to the distribution of resources in the internal system of grants so that individual research facilities would be supported in accordance with their performance.

- From the data above the RDI derives priorities for the next period. As the most powerful lines of research in the MUH are gradually shown to be paediatric fields, particularly paediatric haematooncology, genetics, children Cardio Centre, from other disciplines neurology, pathology, but also the surgical areas and orthopaedics. We will continue to support the work of strong research groups in these priority areas, which are in line with global trends.
- In recent years the MUH strongly supports the development of innovative therapeutic and diagnostic procedures based on modern technologies, which provide space for the development and clinical testing.

### Combined program of education of doctors, M.D. and PhD Program

The combined Program MD / Ph.D. was listed in 2012 mainly for the above mentioned priority areas. At present time 15 physicians at the MUH study this program in preparation for obtaining the Ph.D. and medical specialization in the field.

### International activities:

Scientific and research activity in the MUH is widely involved in the international activities that are reflected in majority of the mentioned grant projects and subprojects of the scientific research. The MUH participates with the 2nd Faculty of Medicine, Charles University in Prague in researching projects of 7th EU Framework Program and on other international programs.

### Creative initiative:

The Motol University Hospital follows and appreciates the quality and successes in the field of medicine and scientific and research progress. In 2012, the best creative initiative was evaluated for the fifth time and this time the team of the Pediatric Cardiocentre was awarded.

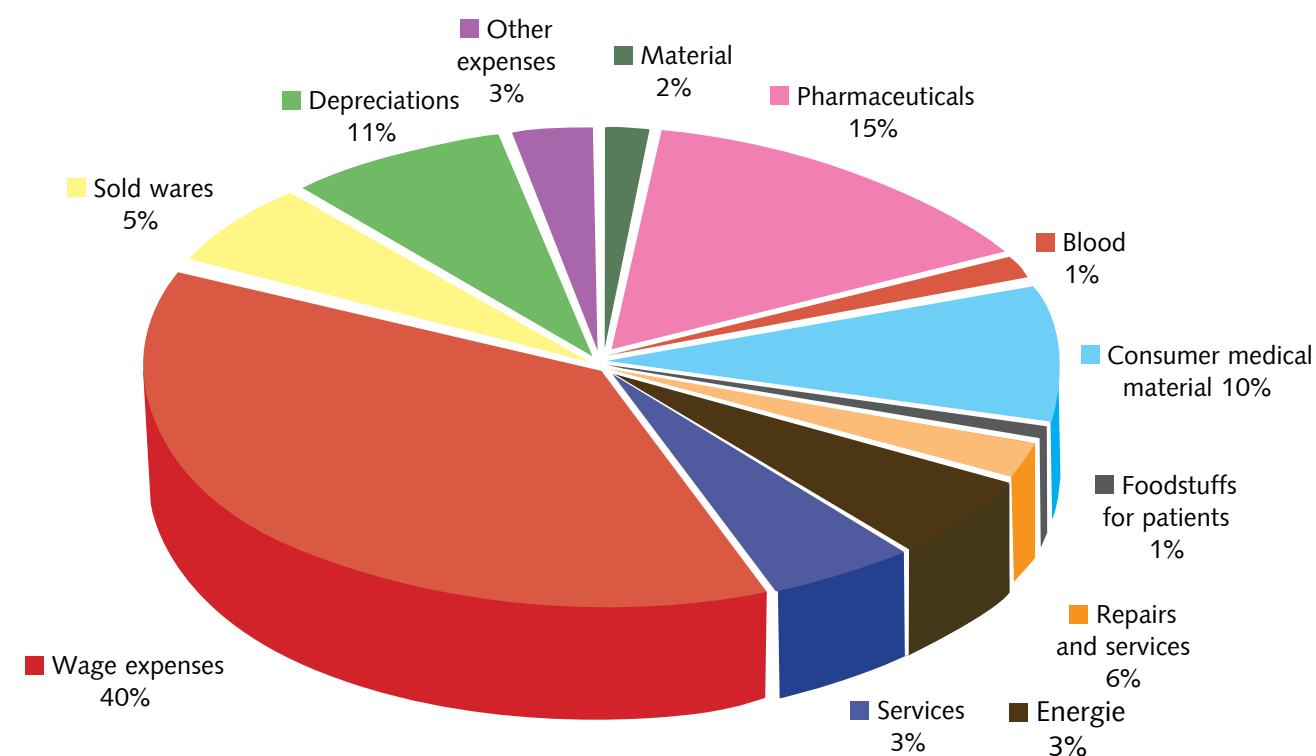


## Economic activities

BALANCE SHEET (in thousands CZK)	situation on 1 <sup>st</sup> Jan 2012	situation on 31 <sup>st</sup> Dec 2012
<b>ASSETS</b>	<b>12,011,918.63</b>	<b>11,740,875.65</b>
<b>Permanent assets</b>	<b>9,814,524.54</b>	<b>9,372,606.33</b>
Long-term intangible assets	14,625.04	9,318.41
Long-term tangible assets	9,795,815.29	9,356,923.45
Long-term financial assets	11.84	12.03
Long-term claims	4,072.37	6,352.44
<b>Current assets</b>	<b>2,197,394.09</b>	<b>2,368,269.31</b>
Reserves	156,258.63	134,834.52
Claims	833,321.61	1,015,127.39
Financial assets	1,207,813.85	1,218,307.40
<b>LIABILITIES</b>	<b>12,011,918.63</b>	<b>11,740,875.65</b>
<b>Own Resources</b>	<b>11,192,879.86</b>	<b>10,915,387.04</b>
Property funds	9,826,449.36	9,381,329.68
Financial and monetary funds	2,803,477.02	2,969,364.71
Economic reset for current accounting period	3,444.14	1,739.17
Accumulated loss from previous years	-1,440,490.66	-1,437,046.52
Economic result in licensing procedure (trading income)		
<b>Foreign sources</b>	<b>816,038.77</b>	<b>825,488.61</b>
Reserves	245.53	488.79
Long-term liabilities	781.25	61,972.83
Current liabilities	818,011.99	763,026.99
Bank accommodations and loans	0.00	0.00

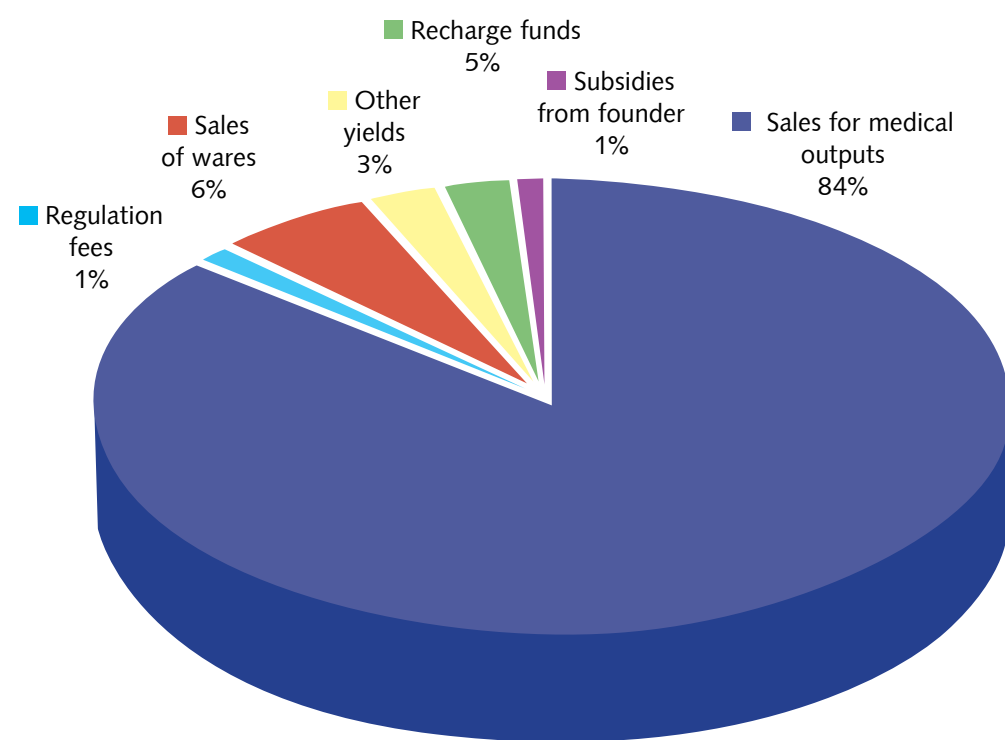
PROFIT AND LOSS STATEMENT (in thousands CZK)	situation on 31. 12. 2012
Material costs	2,646,158.97
Repair and service expenses	611,732.74
Wage expenses	2,888,117.10
Taxes and charges	235.94
Other costs	142,971.84
Depreciations, sold property, reserves and adjusting items	855,751.48
Financial costs	364.88
Cost of indisputable rights (the state budget, local governments, state funds)	0
<b>Total costs</b>	<b>7,145,332.95</b>
Revenues for medical outputs and wares	6,585,146.06
Other revenues	471,386.31
Financial income	10,040.91
Income of indisputable rights (the state budget, local governments, state funds)	103,073.71
<b>Total revenues</b>	<b>7,169,646.99</b>
Economic result before taxation	24,314.04
Income tax	22,574.86
Additional income tax payments	0
<b>Economic result after taxation</b>	<b>1,739.18</b>

## Survey of Expenses for 2012



■ Wage expenses, ■ Sold wares, ■ Depreciations, ■ Other expenses, ■ Material, ■ Pharmaceuticals, ■ Blood, ■ Consumer medical material, ■ Foodstuffs for patients, ■ Repairs and services, ■ Services and energies, ■ Energies

## Survey of Yields in 2012



■ Regulation fees, ■ Sales of wares, ■ Other yields, ■ Recharge funds, ■ Subsidies from founder, ■ Sales for medical outputs

Survey of economic indexes				in thous. CZK
Index	2010	2011	2012	12/11 in %
Yields	6,443,567	6,830,039	7,169,647	104.97
Expenses	6,439,712	6,826,595	7,167,908	105.00
Economic result	3,855	3,444	1,739	50.50
Accumulated loss from previous years	-1,444,346	-1,440,491	1,437,047	-99.76
Tangible investment assets	9,286,739	9,795,815	9,356,923	95.52
Reserves	104,144	156,259	134,835	86.29
Claims	854,598	833,322	1,015,127	121.82
Obligations	680,393	818,012	763,027	93.28
Payroll fund	0	0	0	
Cultural and social services fund	44,641	19,124	18,882	98.73
Reserve fund	54,147	48,907	42,882	87.68
Reproduction fund of inv. Assets	2,619,412	2,735,446	2,907,601	106.29

## I. Liabilities and claims

Short-term trade liabilities 367,329,369.93 CZK  
Short-term trade claims 466,574,656.41 CZK

Long-term liabilities 61,972,835.50 CZK  
Long-term claims 6,352,443.15 CZK

Liabilities after the due date 72,586.32 CZK  
Claims after the due date 39,819,497.13 CZK

Liabilities for employees 136,812,570.86 CZK  
Claims against employees 17,643,740.69 CZK

For a long time, liabilities of the hospital are refunded within 90 – 120 days after the arrival of the invoice. Payments are covered in accordance with the term of maturity and only invoices that have to be solved due to material and time discrepancies, become liabilities after the due date. Long-term liabilities are continuously paid according to the repayment plan, the balance of 61.9 million CZK is registered in the financial statements and it will be completely paid in 2013.

The total state of the claims is stable and it decreased compared to the previous year. Payments from health insurance companies are scheduled and paid within the term of maturity, with a maximum delay of 5 days. Claims after the due date are mostly claims after foreigners that are difficult to collect and these are therefore continuously written off during the reporting period. Their early enforcement and use in court ensures that it does not lead to their limitation.

Financial flows of the Motol University Hospital were balanced for the whole year 2012. The hospital pays its liabilities in the due date and it has no liabilities over 90 days after the due date. During the year, the hospital paid the reconstruction of the University Children's Hospital from its own resources. The payment discipline belongs to priorities of the Motol University Hospital and the records of both liabilities and claims have been thoroughly monitored. The number of liabilities and liabilities after the due date decreased compared to the previous year.

## II. Inventories

The situation on inventories of the MUH:

- material and low value tangible fixed assets	36,055,244.51 CZK
- medicaments	78,470,875.25 CZK

The number of inventories of material and low value tangible fixed assets increased by 7% compared to the same period of the year 2011, which is substantially lower than in previous years. This increase was influenced mainly by the increase in the VAT rate from 10% to 14%.

In the area of the inventories of medicaments, there was an increase of 9% compared to the year 2011. Also here has an impact the increase in the VAT rate. Motol University Hospital ensures the purchase of medicaments and consumer medical material through electronic auctions, in many cases at substantially lower prices, and therefore it also reduces the direct costs per patient.

## III. Assets

acquisition of fixed assets:	362,335,168.66 CZK
acquisition of low value fixed assets:	88,170,860.69 CZK
fixed assets implementation:	530,305,324.88 CZK
low value fixed assets implementation:	79,025,245.76 CZK
disposal of fixed assets:	155,788,461.38 CZK
disposal of low value fixed assets:	27,231,298.36 CZK

In this year, landed estates were sold for CZK 4,999.80.

## IV. Situation on accounts

### Account balances on 31th December 2012

Current account	1,143,386,750.67 CZK
Deposit account	73,446,660.72 CZK
Account of cultural and social services fund	1,434,992.34 CZK

The balance of the the current account on 31th December 2012 was mainly influenced by payments received from health insurance companies in the last days of the year 2012. At the same time the financial resources for the reconstruction of the University Children's Hospital were reserved on the account. These financial resources will be paid continually during the reconstruction of the wing B.

The balance of the deposit account is mainly created from donations in the amount of 38.98 million CZK, the rest of the account are the deposits of patients of the hospital and long-term hospital patients. Account of cultural and social services fund is influenced by its income and output. For the year 2012, the collective agreement was signed and the fund is created and drawn in accordance with the current legislation.

## V. Expenses and yields in 2011 and 2012

### Costs connected directly with a patient

Item	year 2011 in thous. CZK	year 2012 in thous. CZK	growth in thous. CZK	growth in %
Medicaments	1,032,196.80	1,096,935.35	64,738.55	1.07
Blood	85,141.38	95,042.42	9,901.04	1.12
Consumer medicine material	660,016.87	725,440.37	65,423.50	1.10
Foodstuffs for Patients	45,195.40	46,319.13	1,123.73	1.03
Total	1,822,550.45	1,963,737.27	141,186.82	1.08

### Expenses for electricity, water, gas

Item	year 2011 in thous. CZK	year 2012 in thous. CZK	growth in thous. CZK	growth in %
Water	24,740.43	24,600.90	-139.57	1.00
gas (heat energy)	61,959.60	76,638.27	14,678.67	1.24
Electricity	84,420.92	92,381.34	7,960.42	1.13
Total	171,120.95	193,620.51	22,499.52	1.14

#### Other indexes

Item	year 2011 in thous. CZK	year 2012 in thous. CZK	growth in thous. CZK	growth in %
material in general	73,892.43	79,520.36	5,627.93	1.08
material for maintenance	4,004.61	7,260.77	3,256.16	1.82
Linen	10,989.19	11,920.86	931.67	1.09
Repairs and maintenance	232,942.78	245,033.33	12,090.55	1.06
Services	427,678.91	359,071.28	-68,607.63	0.84
Total	749,507.92	702,806.60	-46,701.32	0.94

#### Wages and salaries

Item	year 2011 in thous. CZK	year 2012 in thous. CZK	growth in thous. CZK	growth in %
Wages and salaries	1,999,426.01	2,150,251.00	150,824.99	1.08
Health insurance	178,210.23	191,247.02	13,036.79	1.08
Social security	496,123.33	525,484.01	29,360.68	1.06
Creation of the Cultural and social services fund	19,723.05	21,135.05	1,412.00	1.08
Total	2,693,482.62	2,888,117.08	194,634.46	1.08

#### Revenues for medical outputs

Item	year 2011 in thous. CZK	year 2012 in thous. CZK	growth in thous. CZK	growth in %
Revenues for medical outputs – General Health Insurance	5,807,374.44	5,951,610.08	144,235.64	1.03
Other medical outputs	111,714.29	150,249.96	38,535.67	1.35
Total	5,919,088.73	6,101,860.04	182,771.31	1.03

## VI. Changes in accounting

In the year 2012, the accounting methods were in accordance to the valid legislation for contributory organizations, on the basis of the Act No. 563/1991 Coll., on accounting and its Decree No. 410/2009 Coll. and according to the Czech Accounting Standards, continuously published in 2012. There was a partial change in the chart of accounts and also accounting procedures have changed in the year 2012 according to the approved

legislation.

During 2012, the categorization No. 708 Depreciation of fixed assets was prepared according to the Czech Statistical Office.

In accordance with the Act No. 218/2000 Coll., on budgetary rules, pursuant to the § 58 of the Act, the changes in accounting of the Reproduction Fund for repairs and maintenance were realised in total of 236.10 million CZK and for acquisition of current assets in total of 44.88 million CZK.

Reproduction Fund of assets is a financial fund and its balance is budgeted in the coming years with regard to assets acquired in 2012 and with a view to the future. The situation of the Reproduction Fund on 31st December 2012 is 2 907.60 million CZK.

The Motol University Hospital drew the EU subsidies for projects and these projects were charged separately in the accounting and accounted according to the rules of individual projects. At the end of the year, reserves of sustainability of projects of the EU were created, in accordance with the EU subsidy contracts.

During the year, monthly VAT returns were regularly conducted, summary reports, statements for tax purposes (reverse charge, waste) . At the end of the year, the fixed coefficient for 2013 was established simultaneously with the preparation of the legislative changes due to the amendment to Act No. 235/2004 Coll. on VAT in force from 1st January 2013 (the VAT increase). From 1st April 2012, the specification of the taxation of selected health care services was performed in connection with the amendment of the act on health services.

When processing the financial statements for the year 2012 to the Central System of the State Accounting Information, the cash flow statement together with the statement of changes and the auxiliary analytical overview were created. At the same time, all attachments of the annual statements were prepared in accordance to the valid legislation. Estimated items were created in compliance with § 7 and § 8 of Act No. 563/1991 Coll., On Accounting, as amended. In 2012, margins in accounting of minus items was permitted.

## VI. Conclusion

The economy of the University Hospital Motol to 31st December 2012 was balanced and it ended with a profit of 1.739 million CZK. The economic result before taxation reached 24.314 million CZK. The hospital managed to obtain a positive economic result mainly thanks to the effective management, goal-directed observation of the set limits and systemic regulation measures.



The economic result was partially influenced by the economic activity which used capacitive possibilities of the hospital and it was also negatively influenced by the ongoing reconstruction of the University Children's Hospital. At the same time, the deposit of revenues from health insurance companies partially grew in 2012 and the hospital received supplementary payments for previous years. Following the current reimbursement regulation, active measures were adopted by the Motol University Hospital. It consists of the contractual policy especially towards employee insurance companies and increased number of admitted patients within a declining market of 98 % hospitalized patients in the Czech Republic. Without these important steps, the income of the Motol University Hospital would be in 2012 even lower than in 2010.

Negative impact on the economy of the hospital had the increase in the VAT rate according to the valid legislation and also an imposed tax on some health care services from 1st April 2012. The largest cost increase was an increase in personnel costs by the regulation of the Ministry of Health. By opening of the University Children's Hospital, the Motol University Hospital gradually implemented new assets, which led to an increase in depreciation. In compliance with the fact, that the reconstruction of the University Children's Hospital was realised by using also the funds of the state budget, the hospital will also pay a higher tax on corporate income.

The economy of the Motol University Hospital is balanced and it has no back tax. The management of the Motol University Hospital puts the stress mainly on the observation of provisions to keep the balanced economy for the whole year while maintaining the current range of medical services and improving of the quality of provided health care in accordance with the Statute of the Accreditation.

## Personnel activity

In 2012, the Motol University Hospital employed:  
in revised numbers (RN):

**5,014 employees, of which 4,018 medical professionals**

in natural persons (NP):

**5,642 employees, of which 4,601 medical professionals**

## Profession structure

(NP) Average number in natural persons

(RN) Average number in revised numbers

	2010	2011	2012	2010	2011	2012	INDEX 12/11	
	NP	NP	NP	RN	RN	RN	NP	RN
Total	5,448	5,501	5,642	4,881	4,911	5,014	1.03	1.02
PHYSICIANS	1,105	1,138	1,139	808	824	828	1.00	1.00
PHARMACISTS	26	26	28	25	25	25	1.08	1.00
NURSES	2,136	2,094	2,104	1,992	1,962	1,948	1.00	1.00
MP WITH PROF. QUALIFIC	340	357	378	321	330	349	1.06	1.06
MP WITH SPEC. SKILLS	199	206	213	161	169	169	1.03	1.00
MP UNDER SUPERVISION	636	655	686	611	641	659	1.05	1.03
JOP WITH PROF. QUALIFIC	68	62	53	53	49	40	0.86	0.82
ADMINISTRATION	636	657	687	602	604	641	1.05	1.06
WORKERS	302	306	354	308	304	355	1.16	1.17

## Employees according to age and sex – situation on 31<sup>th</sup> December, 2012

Age	Man	Woman	Total	%
to 20 years	14	24	38	0.67
21 - 30 years	340	952	1,292	22.90
31 - 40 years	438	1,043	1,481	26.25
41 - 50 years	273	946	1,219	21.61
51 - 60 years	309	879	1,188	21.06
61 years and older	170	254	424	7.51
<b>total</b>	<b>1,544</b>	<b>4,098</b>	<b>5,642</b>	<b>100</b>
<b>%</b>	<b>27.37</b>	<b>72.63</b>	<b>100</b>	

## Employees segmentation by education and sex - situation on 31<sup>th</sup> December, 2012

Reached education	Men	Women	Total	%
Elementary	110	134	244	4.32
Trained	111	128	239	4.24
Secondary vocational	198	147	345	6.11
Full secondary vocational	335	2,206	2,541	45.04
Higher vocational	52	227	279	4.95
University	738	1,256	1,994	35.34
<b>of which</b>	<b>38</b>	<b>330</b>	<b>368</b>	
<b>Bachelor degree course</b>	<b>700</b>	<b>926</b>	<b>1,626</b>	
<b>Master degree course</b>	<b>1,544</b>	<b>4,098</b>	<b>5,642</b>	<b>100</b>

## Qualification Structure – situation on 31<sup>th</sup> December, 2012

**1) Health care professionals according to Law 95/2004 Coll.** = physicians and pharmacists: in total 1,167

Of 1,139 physicians, 41 are graduate doctors before introduction and 268 doctors already introduced into the field of specialization, i.e. 27.13 % physicians have only professional qualification. A total of 820 (72,87 %) physicians achieved specialized qualification (i.e. medical certificate of the 2nd degree, extension course, licence from the Czech medical Chamber, certification from the Czech Ministry of Health).

**2) Health care professionals according to Law 96/2004 Coll.** = non-medical health care professions: in total 3,434 of which 2,104 are general nurses and midwives.

Reached education of nurses and midwives	Total	%	with specialisation	%
Secondary health care	1,566	74.43	845	53.96
Higher health care	179	8.51	26	14.52
University – Bachelor degree	263	12.50	120	45.63
University – Master degree	96	4.56	56	58.33
<b>Total</b>	<b>2,104</b>	<b>100,00</b>	<b>1,047</b>	<b>49.76</b>

## Wages area

A total of CZK 2,107,041,796 were spent on wages in 2012 (without payments for work done out of employment). Compared with 2011, there has been an increase of CZK 141,216,594, i.e. 7.2 %.

The increase in the volumes of wage funds compared with 2011 is caused by the elevation of standard wage tariffs of physicians from 5 to 8 thousand CZK from 1st March 2011 and mainly by increase in salaries of health professionals about 6.25 % of the average wage tariff, specified by the Minister of Health. Its aim was to fulfill the Memorandum of the Medical Trade Unions Club - Czech Medical Association and the Ministry of Health on the salary adjustments in the health sector.

The average gross salary in the hospital on 31st December 2012 was CZK 35,016. Compared with the year 2011, it increased by 5 %.

## Development of average salary in last 10 years

	2003	2004	2005	2006	2007
Total	20,938	21,026	21,989	24,625	26,835
Physicians	38,199	38,188	39,951	44,972	48,906
Nurses	19,430	19,447	20,369	22,946	24,860

	2008	2009	2010	2011	2012
	27,711	29,925	30,824	33,356	35,016
	49,199	50,565	51,373	61,510	67,464
	26,724	29,171	30,206	31,307	32,853

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