



# Annual Report 2017

## FN Motol



FN MOTOL

## CONTENTS

INTRODUCTION	4	
MANAGEMENT OF MOTOL UNIVERSITY HOSPITAL	5	
HOSPITAL'S SCIENTIFIC BOARD	6	
BASIC ORGANIZATIONAL STRUCTURE	9	
BASIC DATA	10	
LIST OF DEPARTMENTS	11	
MEDICAL PREVENTIVE CARE	16	
Paediatric inpatient departments	16	
Department of Paediatrics, 2nd Faculty of Medicine, Charles University and MUH	16	
Children's Heart Centre, 2nd Faculty of Medicine, Charles University and MUH	17	
Department of Paediatric Psychiatry, 2nd Faculty of Medicine, Charles University and MUH	19	
Department of Paediatric Haematology and Oncology, 2nd Faculty of Medicine, Charles University and MUH	20	
Department of Paediatric Surgery, 2nd Faculty of Medicine, Charles University and MUH	21	
Department of Paediatric Neurology, 2nd Faculty of Medicine, Charles University and MUH	23	
Department of ENT, 2nd Faculty of Medicine, Charles University and MUH	25	
Department of Anaesthesiology and ICM, 2nd Faculty of Medicine, Charles University and MUH	27	
Department of subsequent intensive care and Department of long-term nursing care	29	
Department of Rehabilitation and Sports Medicine, 2nd Faculty of Medicine, Charles University and MUH	30	
1. Department of Rehabilitation	30	
2. Spinal Unit	32	
3. Centre for Pain Research and Treatment	33	
4. Department of Sports Medicine	33	
Department of Ophthalmology, 2nd Faculty of Medicine, Charles University and MUH	34	
Department of Orthopaedics and Traumatology, 2nd Faculty of Medicine, Charles University and MUH	35	
Department of Neurosurgery, 2nd Faculty of Medicine, Charles University and MUH	37	
Department of Stomatology, 2nd Faculty of Medicine, Charles University and MUH	38	
Adult inpatient departments	40	
Department of Obstetrics and Gynaecology, 2nd Faculty of Medicine, Charles University and MUH	40	
Department of Neonatology with NICU	41	
Department of Internal Medicine, 2nd Faculty of Medicine, Charles University and MUH	42	
Infectious diseases	44	
Department of Surgery, 2nd Faculty of Medicine, Charles University and MUH	45	
3rd Department of Surgery, 1st Faculty of Medicine, Charles University and MUH	46	
Department of Cardiology, 2nd Faculty of Medicine, Charles University and MUH	48	
Department of Cardiovascular Surgery, 2nd Faculty of Medicine, Charles University and MUH	49	
Department of Otorhinolaryngology and Head and Neck Surgery, 1st Faculty of Medicine, Charles University and MUH	51	
Department of Nuclear Medicine and Endocrinology, 2nd Faculty of Medicine, Charles University and MUH	53	
Centre for Spinal Surgery, 1st Faculty of Medicine, Charles University and MUH	54	
Department of Long-Term Care – Aftercare Centre	55	
Department of Neurology, 2nd Faculty of Medicine and MUH	56	
1st Department of Orthopaedics, 1st Faculty of Medicine, Charles University and MUH	59	
Department of Pneumology, 2nd Faculty of Medicine, Charles University and MUH	60	
Department of Oncology, 2nd Faculty of Medicine, Charles University and MUH	62	
Department of Urology, 2nd Faculty of Medicine, Charles University and MUH	64	
Common examination and therapeutic units	40	
Department of Radiology, 2nd Faculty of Medicine, Charles University and MUH	65	
Department of Biology and Medical Genetics, 2nd Faculty of Medicine, Charles University and MUH	67	
Department of Medical Chemistry and Clinical Biochemistry, 2nd Faculty of Medicine, Charles University and MUH	69	
Department of Immunology, 2nd Faculty of Medicine, Charles University and MUH	71	
Department of Medical Microbiology, 2nd Faculty of Medicine, Charles University and MUH	72	
Department of Pathology and Molecular Medicine, 2nd Faculty of Medicine, Charles University and MUH	74	
Department of Clinical Haematology	75	
Blood Bank Department	77	
Department of Rheumatology, MUH	78	
Central Operating Theatres - Paediatric Section, MUH	79	
Central Operating Theatres - Adult Section, MUH	80	
Department of Transplantation and Tissue Bank, MUH	80	
Outpatient Section	81	
Emergency Department for Children, MUH	81	
Department of Dermatovenereology, MUH	81	
Department of Paediatric Dermatology, MUH	82	
Emergency Department for Adults, MUH	83	
Primary Care Department, MUH	84	
Department of Hygiene and Epidemiology, MUH	84	
Hospital Pharmacy, MUH	85	
NURSING CARE	88	
HOSPITAL OMBUDSMAN	91	
SCIENTIFIC RESEARCH ACTIVITIES	92	
ECONOMIC ACTIVITIES	95	
PERSONNEL ACTIVITIES	99	
DONORS AND FOUNDATIONS	101	

## INTRODUCTION

Dear friends,

the same as every year, I am beginning our annual report with a short introduction, even though for the first time I am not quite sure whether I should be the one assessing the past year for Motol University Hospital. The reason is that for 11 months out of the last 12 I held the post of Minister of Health, so I viewed the events of 2017 at Motol Hospital only from a distance. I am very happy to be back and happy that, at the start of the annual report for 2017, I can thank my colleague, Pavel Budinský, MD, for deputising for me and acting as the director, a task he performed with great sacrifice and very ably. He acted for me, exercising all my responsibilities, even during an 8-month planned check by the Supreme Audit Office, comprehensively focused on financial management in 2014-16.

Last year, the hospital continued to modernise its paediatric section, through the next stage entitled “Motol UH—Modernisation and Extension of Medical Centre”. Unfortunately, this project was understandably accompanied by noisy and bothersome demolition work, traffic restrictions on the hospital premises, necessary movement of outpatient departments to other parts of the hospital and therefore worsened orientation in the paediatrics section. Nevertheless, it is the last of the large projects planned in the paediatrics section and I would like to thank staff, patients and other visitors to the hospital for their marked tolerance. Of the other important construction projects I cannot leave out the reconstruction and modernisation of the complex of lecture rooms with the primary aim of improving the teaching conditions for our partner, the Second Faculty of Medicine, Charles University. All the work was done in just under a year and a half and, of the total costs of CZK 140 million, Motol UH contributed CZK 40 million from its own hospital funds.

I'm happy that I can again say that from the viewpoint of economic stability Motol UH continued the tradition of making a slight profit, and it managed to deal with the fact that salary costs continued to increase; salary costs account for 42.5% of the total volume of costs. I obviously regard an increase in salaries in healthcare as a positive trend and am happy that in the Ministry of Health's budget I managed to find funds for a contribution for nurses in nonstop operations totalling CZK 2,000 a month. Nursing staff by beds are the closest and most important element of patient care, partly because it is nurses that are the communication means closest to patients when they are staying in hospital and the burden placed on them is heavy.

Dear friends, you will read in more detail about the individual activities and results of Motol University Hospital in the next chapters. They are marked successes of our healthcare professionals in preventative and subsequent care, scientific research activities and international co-operation in medicine, including important projects and anniversaries. I trust that the “flagship” of Czech healthcare, which Motol UH is regarded as being, will continue to cruise in calm and troubled waters without damage in future years.



Miloslav Ludvík, LLD, MBA  
Director

## MANAGEMENT OF MOTOL UNIVERSITY HOSPITAL

Director of the Hospital	<b>Miloslav Ludvík, LLD, MBA</b>
Deputy Manager for Engineering and Technology acting Director of the Hospital (until 30 December 2017)	<b>Pavel Budinský, MD, Ph.D., MBA</b>
Deputy Manager for Medical Preventative Care	<b>Martin Holcát, MD, MBA</b>
Deputy Manager for Nursing Care—Chief Nurse	<b>Jana Nováková, MBA</b>
Deputy Manager for Economy	<b>Jiří Čihař</b>
Personal Deputy Manager	<b>Jindřiška Feldmanová</b>
Deputy Manager for Science and Research	<b>prof. Anna Šedivá, MD, DSc.</b>
Deputy Business Manager	<b>Jana Baševá</b>



## HOSPITAL'S SCIENTIFIC BOARD

**prof. Marek Babjuk, MD**

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

**assoc. prof. Jiří Bronský, MD, Ph.D**

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

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

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

**assoc. prof. Pavel Dřevínek, MD, Ph.D.**

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

**prof. Tomáš Eckschlager, MD**

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

**Markéta Havlovicová, MD**

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

**prof. Jiří Hoch, MD**

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

**Martin Holcát, MD, MBA**

Deputy Manager for Medical Preventive Care, Motol University Hospital

**prof. Jakub Hort, MD, Ph.D.**

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

**prof. Jan Janoušek, MD, Ph.D.**

Head of Children's Heart Centre, 2nd Faculty of Medicine, Charles University and Motol University Hospital

**assoc. prof. Tomáš Kalina, MD, Ph.D.**

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

**prof. Josef Koutecký, MD**

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

**prof. Pavel Kršek, MD, Ph.D.**

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

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

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

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

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

**prof. Jan Plzák, MD, Ph.D.**

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

**prof. Miloslav Roček, MD**

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

**prof. Anna Šedivá, MD, DSc.**

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

**prof. Radek Špišek, MD, Ph.D.**

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

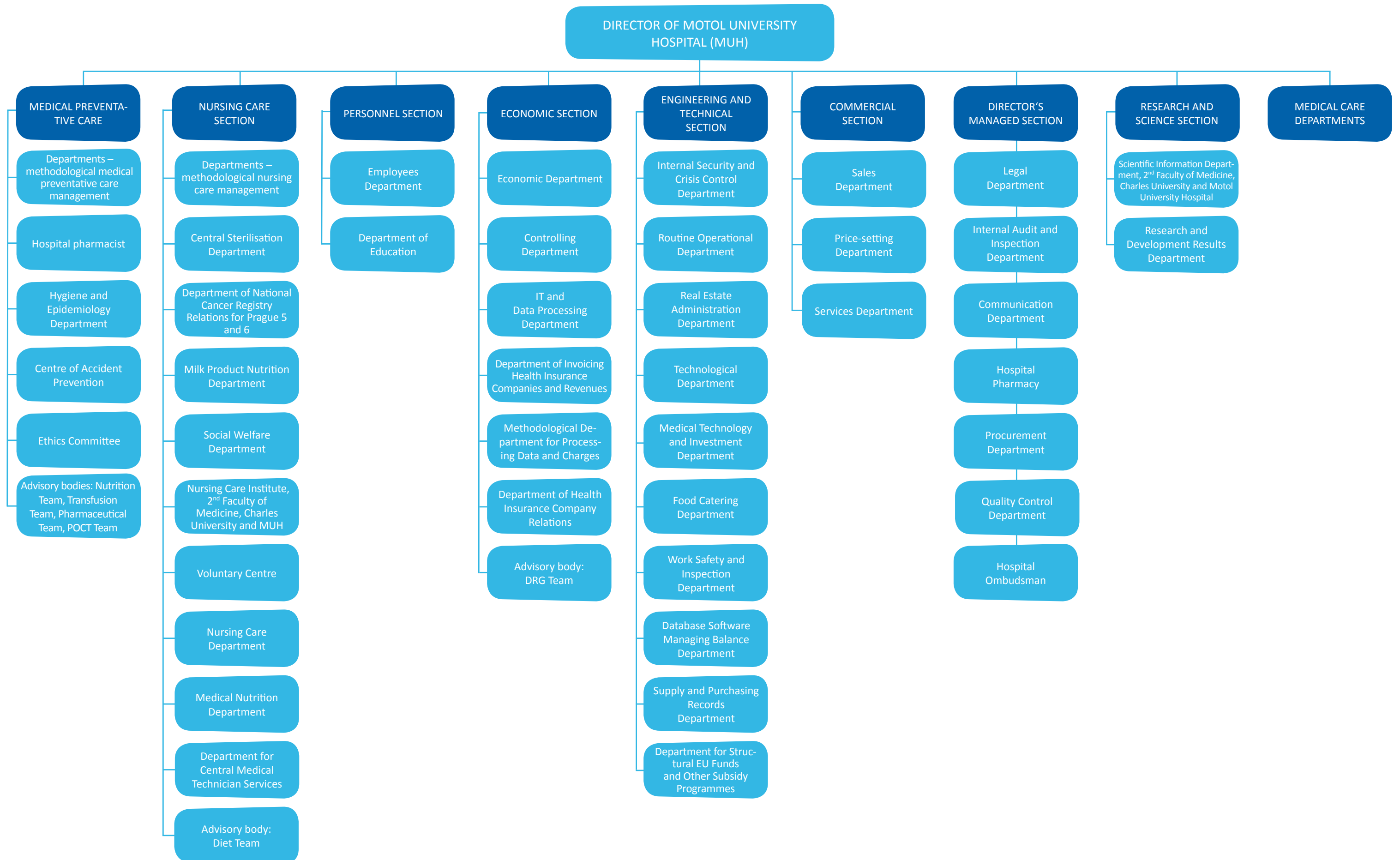
**assoc. prof. Zdeněk Šumník, MD, Ph.D.**

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

**prof. Josef Zámečník, MD, Ph.D.**

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

# BASIC ORGANIZATIONAL STRUCTURE AS OF 31 DECEMBER 2017



## BASIC DATA TO 31. 12. 2017

Estate area (m <sup>2</sup> )	348 000
Assets (in thousand CZK)	10 947 750
Total turnover (in thousand CZK)	8 507 755
Employees (natural person)	5 808
Employees (revised number)	5 191
Beds	2 199

### Beds

- of which	Children	Adults	Total
Standard	421	1017	1438
ICU	150	216	366
<b>Acute in total</b>	<b>571</b>	<b>1233</b>	<b>1804</b>
Aftecare - intensive	4	10	14
- longterm	-	361	361
- intensive nursecare	-	20	20
<b>Total</b>	<b>575</b>	<b>1624</b>	<b>2199</b>

Number of Hospitalisations	79 401
Number of Outpatient Treatments	1 140 794
Number of Treatment Days (without longterm)	479 452
Number of Anaesthesia Treatments	36 219
Number of Childbirths	3 573
Death Rate	1.28

## LIST OF DEPARTMENTS

### Paediatric Inpatient Part

**Children's Heart Centre, Second Faculty of Medicine, Charles University in Prague and Motol UH**

Head: prof. Jan Janoušek, MD, Ph.D.

**Department of Paediatric Psychiatry, Second Faculty of Medicine, Charles University in Prague and Motol UH**

Head: prof. Michal Hrdlička, MD

**Department of Paediatric Surgery, Second Faculty of Medicine, Charles University in Prague and Motol UH**

Head: prof. Michal Rygl, MD, Ph.D.

**Department of Paediatric Haematology and Oncology, Second Faculty of Medicine, Charles University in Prague and Motol UH**

Head: prof. Jan Starý, MD

**- Bone Marrow Transplant Unit**

Head: prof. Petr Sedláček, MD

**Department of Paediatric Neurology, Second Faculty of Medicine, Charles University in Prague and Motol UH**

Head: prof. Pavel Kršek, MD, Ph.D.

**Department of ENT, Second Faculty of Medicine, Charles University in Prague and Motol UH**

Head: Jiří Skřivan, MD

**- Department of Phoniatics at Mrázovka**

Head: Petr Myška, MD

**Department of Paediatrics, Second Faculty of Medicine, Charles University in Prague and Motol University Hospital**

Head: prof. Jan Lebl, MD

### Adult Inpatient Part

**Department of Surgery, Second Faculty of Medicine, Charles University and Motol UH**

Head: prof. Jiří Hoch, MD

**3rd Department of Surgery, First Faculty of Medicine, Charles University and Motol UH**

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

**Department of Internal Medicine, Second Faculty of Medicine, Charles University and Motol UH**

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

**Department of Cardiovascular Surgery, Second Faculty of Medicine, Charles University and Motol UH**

Head: *assoc prof. Vilém Rohn, MD.*

**Department of Cardiology, Second Faculty of Medicine, Charles University and Motol UH**

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

**Department of Otorhinolaryngology and Head and Neck Surgery, First Faculty of Medicine, Charles University and Motol UH**

Head: *prof. Jan Plzák, MD, Ph.D.*

**Department of Nuclear Medicine and Endocrinology, Second Faculty of Medicine, Charles University and Motol UH**

Head: *prof. Petr Vlček, MD*

**Centre for Spinal Surgery, First Faculty of Medicine, Charles University and Motol UH**

Head: *prof. Jan Štulík, MD*

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

Head: *Martina Nováková, MD*

**Department of Neurology, Second Faculty of Medicine, Charles University and Motol UH**

Head: *prof. Petr Marusič, MD, Ph.D.*

**Department of Oncology, Second Faculty of Medicine, Charles University and Motol UH**

Head: *doc. Jana Prausová, MD, Ph.D., MBA*

**1st Department of Orthopaedics, First Faculty of Medicine, Charles University and Motol UH**

Head: *prof. Ivan Landor, MD*

**- Traumatology Department**

Head: *Jaroslav Kalvach, MD*

**Department of Pneumology, Second Faculty of Medicine, Charles University and Motol UH**

Head: *Libor Fila, MD, Ph.D.*

**Department of Urology, Second Faculty of Medicine, Charles University and Motol UH**

Head: *prof. Marek Babjuk, MD*

**Common Inpatient Sites of Paediatric and Adult Parts**

**Department of Obstetrics and Gynaecology, Second Faculty of Medicine, Charles University and Motol UH**

Head: *Roman Chmel, MD, Ph.D., MHA*

**- Department of Neonatology with NICU**

Head: *Miloš Černý, MD*

**Department of Anaesthesiology and ICM, Second Faculty of Medicine, Charles University and Motol UH**

Head: *Tomáš Vymazal, MD, Ph.D., MHA*

**- Department of Subsequent Intensive and Long-term Intensive Nursing Care**

Head: *Kateřina Čadová, MD*

**Department of Orthopaedics and Traumatology, Second Faculty of Medicine, Charles University and Motol UH**

Head: *prof. Tomáš Trč, MD, MBA*

**Department of Rehabilitation and Sports Medicine, Second Faculty of Medicine, Charles University and Motol UH**

Head: *prof. Pavel Kolář, 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 Sports Medicine**

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

**Department of Ophthalmology, Second Faculty of Medicine, Charles University and Motol UH**

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

**Department of Neurosurgery, Second Faculty of Medicine, Charles University and Motol UH**

Head: *assoc. prof. Michal Tichý, MD*

**Department of Stomatology, Second Faculty of Medicine, Charles University and Motol UH**

*Head: prof. Tatjana Dostálová, MD, Ph.D., MBA*

### **Common Examination and Therapeutic Units**

**Department of Radiology, Second Faculty of Medicine, Charles University and Motol UH**

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

**Department of Clinical Haematology**

*Head: Ivana Hochová, MD*

**Blood Bank Department**

*Head: Eva Linhartová, MD*

**Department of Clinical Psychology**

*Head: Mgr. Zuzana Kocábová*

**Department of Rheumatology**

*Head: Rudolf Horváth, MD, Ph.D.*

**Department of Transplantations and Tissue Bank**

*Head: Jan Burkert, MD, Ph.D.*

**Department of Biology and Medical Genetics, Second Faculty of Medicine, Charles University and Motol UH**

*Head: prof. Milan Macek, MD, Ph.D.*

**Department of Immunology, Second Faculty of Medicine, Charles University and Motol UH**

*Head: prof. Jiřina Bartůňková, MD, Ph.D., MBA*

**Department of Medical Chemistry and Clinical Biochemistry, Second Faculty of Medicine, Charles University and Motol UH**

*Head: prof. Richard Průša, MD*

**Department of Medical Microbiology, Second Faculty of Medicine, Charles University and Motol UH**

*Head: assoc. prof. Pavel Dřevínek, MD, Ph.D.*

**Department of Pathology and Molecular Medicine, Second Faculty of Medicine, Charles University and Motol UH**

*Head: prof. Roman Kodet, MD*

### **Outpatient Sector**

**Department of Paediatric Dermatology**

*Head: Štěpánka Čapková, MD*

**Central Operating Theatres – Paediatric Part**

*Head: Bc. Alice Podařilová*

**Central Operating Theatres – Adult Part**

*Head: Mgr. Vladana Roušalová*

**Department of Dermatovenerology and Venerology**

*Head: Alena Machovcová, MD, Ph.D., MBA*

**Emergency Department for Children**

*Head: Jitka Dissou, MD*

**Emergency Department for Adults**

*Head: Lenka Kozlíková, MD*

**Primary Care Department**

*Head: Jaroslava Kulhánková, MD*



## MEDICAL PREVENTIVE CARE

### Paediatric inpatient departments

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

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

*Senior consultant: Jana Tejnická MD, MBA*

*Head nurse: Bc. Jitka Kaplická*

#### Basic characteristics:

The department provides diagnostics, treatment and ongoing monitoring and management of paediatric patients from across the Czech Republic in almost all branches of internal medicine. In 2017, 4,717 patients were hospitalised at the clinic and treatment was provided for 29,261 outpatients. 8 patients underwent a successful kidney transplant (of this 1 from a living related donor), 10 patients were prepared for liver transplants at IKEM (Institute for Clinical and Experimental Medicine) and 4 children underwent successful lung transplants.

#### Specialised outpatient facilities:

The department includes a network of 17 specialised departments (including clinics for children following kidney, liver, and lung transplants) and the department of elimination methods.

#### New methods and procedures:

- The Nephrology Working Group provides care for 9 patients with renal failure on home peritoneal dialysis. In 2017, this treatment started using a new device for automated PD - Harmony. Paediatric patients continued to be treated with haemodialysis, plasmapheresis, immunoabsorption, CVVH, CVVHD and CVVHDF.
- The Pneumology Team (as the only workplace of its kind in the Czech Republic) focused on the diagnosis and treatment of patients with primary ciliary dyskinesia. Patients with cystic fibrosis continued to be treated, with success recorded in the treatment of patients with Kalydeco. The team cares for children on home non-invasive pulmonary support; treatment commenced for 7 new patients. The laboratory for the functional diagnosis of lung diseases performed 5,386 tests.
- The Gastroenterology Team successfully continued its intensive endoscopic programme and developed a method of endoscopic balloon dilatation of oesophageal strictures.
- In 2017, the Working Group for Paediatric Diabetology conducted the world's first study comparing the effectiveness and safety of the hybrid artificial pancreas (OpenAps algorithm) to standard therapy consisting of an insulin pump and continuous glucose measurement sensor in paediatric patients with type 1 diabetes mellitus. The results were presented at the ISPAD 2017 international conference and received a fantastic response.

#### Unique technological equipment:

- The Gastroenterology Team is currently equipped with state-of-the-art equipment, including gastroscopes and colonoscopes for examining children in the youngest age category. Video documentation can be sent to the hospital information system via the encoder.
- The Nephrology Team has put a new device into operation for automated peritoneal dialysis - Harmony.
- The Pneumology Team is the only team in the Czech Republic that examines premature babies, new-borns and infants using a thin and ultra-thin bronchoscope.

#### Important events in 2017:

- Members of the Gastroenterology Team organised the most successful paediatric event in the Czech Republic in 2017- ESPGHAN. Given the number of participants and contributions, it was the largest paediatric gastroenterology conference in the world. The team has become co-investigator on the EU-funded academic study, the PIBD-NET Reduce Risk Trial.
- The medical team of the Infant Department continued the international study PERTINENT focusing on pertussis surveillance in children under 1 year of age in the Czech Republic. They continued in activities related to long-term home parenteral nutrition and the diagnosis of intestinal disorders.
- The Endocrinology Team continued the European Reference Centres for Rare Diseases project and is the only centre in the Czech Republic in the field of endocrinology and rare bone diseases.
- The Pneumology Team organised a national conference on Paediatric Pneumology and co-authored international best practices.
- Members of the Working Group for Cystic Fibrosis participated in a collaborative research project with the University of Lisbon and Regensburg and participated in the EU-ERN-LUNG CF project.
- The members of all working groups represented their workplaces at both national and international scientific conferences. They were the authors or co-authors of numerous books and publications in journals with a defined impact factor.

#### Children's Heart Centre, 2nd Faculty of Medicine, Charles University and Motol University Hospital

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

*Senior consultant, Dept. of Cardiology: Peter Kubuš, MD, PhD.*

*Senior consultant, Dept. of Cardiosurgery: Roman Gebauer, MD*

*Head nurse: Mgr. Dana Křivská*

#### Basic characteristics:

The Children's Heart Centre is the Czech Republic's only comprehensive cardiovascular centre for children nationwide. It mainly deals with the diagnosis and treatment of congenital heart defects in children and cooperates with other workplaces in the treatment of adult patients with congenital heart disease. The centre is characterised by its preference for non-invasive diagnostic procedures (ECHO, MRI and CT SCAN) and primary correction of defects at an early age. In 2017, 482 surgeries were carried out (of this 3 heart trans-

plants), 28 ligations of the open ductus arteriosus in new-borns with low birth weights at other workplaces, 339 catheterisations (of which 243 were interventions). 830 patients were hospitalised (+534 accompanying adults) and 3,993 outpatients were treated. These numbers represent a continuing increase in the number of surgical and catheter interventions compared to previous years, reflecting the move to the new site with greater capacity in 2011, and this despite the lack of staff, in particular, supporting healthcare personnel. In 2017, the department once again provided care for foreign patients as part of the Medevac humanitarian programme in the form of charitable/humanitarian missions to Phnom Penh (Cambodia, 1x - 13 patients), Amman (Jordan, 1x - 25 patients) and Fez (Morocco, 1x - 12 patients). A total of 75 patients underwent surgery.

A definitive agreement on cooperation in the surgical and cardiology treatment of paediatric patients with heart disease was concluded with the Ljubljana University Hospital on 1 November 2017, which will take place in the form of regular visits by Children's Heart Centre cardiac surgeons to Slovenia and the surgical and catheterisation treatment of more complex cases at the Children's Heart Centre.

#### Specialised outpatient facilities:

- clinical cardiology
- electrophysiology and cardiac stimulation
- prenatal cardiology
- connective tissue disease
- heart failure and transplantation

#### New methods and procedures:

- Long-term implantable mechanical heart support programme - 3 patients with terminal heart failure have been successfully treated and later received transplants since 2014.
- Heart transplant programme for children - successfully performed in 4 patients in 2014, 1 patient in 2015, 3 patients in 2016, and 3 patients in 2017.
- Development of tracheal reconstructive surgery programme for congenital malformations of the trachea in cooperation with the Motol University Hospital trachea team (number of procedures: 2 in 2016, 1 in 2017).
- Further development of the mini-invasive cardiac surgery programme.

#### Unique technological equipment:

- Rotaflow centrifugal pump for ECMO and short-term mechanical heart support
- GE Vivid E95 ultrasonic device

#### Important events in 2017:

- Further development of the molecular-genetic study of families with hereditary arrhythmic syndromes and cardiomyopathy using the NGS method, in cooperation with the Department of Biology and Medical Genetics, 2nd Faculty of Medicine, Charles University and Motol University Hospital.
- The Children's Heart Centre became a member of the European Reference Network Guard-Heart dedicated to hereditary arrhythmic syndromes and cardiomyopathies.
- Treatment of the first three fetuses with critical aortic stenosis in the Czech Re-

public by means of foetal valvuloplasty of the aortic valve (in cooperation with the Department of Paediatric Cardiology, Kepler University Hospital, Linz).

- Symposium to mark the 40th Anniversary of the Children's Heart Centre, Prague Symposium on Congenital Heart Disease 2017, Břevnov Monastery, 21-22 September 2017, 250 participants
- A charity auction featuring children's works of art on the topic of the heart at Břevnov Monastery on 21 September 2017 raised more than CZK 300,000, which will be donated towards the reconstruction of the hostel for the family members of patients at Motol University Hospital.
- 12 publications in international journals with an impact factor and 8 chapters in books with a total IF of 71.992. Another 2 chapters were published in peer-reviewed international journals and 6 chapters in national publications.

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

*Head physician: Prof. Michal Hrdlička, MD, PhD.*

*Senior consultant: Jiří Koutek, MD, Ph.D.*

*Head nurse: Mgr. Mária Vacová*

#### Basic characteristics:

Paediatric Psychiatry is the only independent clinical establishment in this field in the Czech Republic. It deals with the diagnostics, treatment and prevention of mental disorders in childhood and adolescence and focuses on childhood autism, eating disorders, attention deficit hyperactivity disorder, psychotic disorders and suicidal behaviour in children and adolescents. The clinic includes a Family Centre that focuses on family therapy. The clinic is an undergraduate and postgraduate teaching facility. It is accredited in the field of child and adolescent psychiatry and adult psychiatry for postgraduate education. In 2017, 6,900 patients were treated on an outpatient basis, with 1,849 consultations and 492 admissions to the inpatient ward.

#### Specialised centres:

Family Centre for family therapy of paedo-psychiatric patients

#### New methods and procedures:

- Routine use of the Autism Diagnostic Observation Schedule (ADOS). Staff were also involved in the translation, standardisation and publication of a CAST screening test for school children (Dudová, I., Beranová, Š., Hrdlička, M., Urbánek, T.: CAST - screening test for autistic spectrum disorders. 1st edition, Prague, National Institute of Education 2013. 54 pages) and translated and published a M-CHAT screening test for children 2 years of age (Dudová, I., Beranová, Š., Hrdlička, M.: Screening and diagnosis of child autism in early childhood, Paediatrics Practice, 14, 2013, No.3, pp. 153-156). Both methods are commonly used in the department.
- From 2016, the department has been addressing the grant AZV 16-31754A focused on the use of modern imaging methods in the study of social and language deficits in neuro-developmental disorders.
- The clinic is continuing unique research of early markers of bipolar affective dis-

order in high risk offspring in the Czech Republic (head researcher: Michal Goetz, MD, PhD). Dr. Goetz received grant support for the next research period (AZV 17-32478A). The department is cooperating with the National Institute of Mental Health in this area.

- Complex therapy of eating disorders, in which the department is of national importance, is continuing. In 2017, the department continued to research eating disorders with early onset of the disease.
- The diagnosis and complex therapy of psychotic states is of supra-regional importance.

#### Unique technological equipment:

- Thymatron DG device for electroconvulsive therapy.

#### Important events in 2017:

- Dr. Goetz was elected as the main organiser and Chair of the International Association for Child Psychiatry and Allied Professions (IACAPAP) world congress to be held in Prague on 23-27 July 2018.

### 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, PhD

Senior consultant: Vratislav Šmelhaus, MD

Head nurse: Bc. Jitka Wintnerová

#### Basic characteristics:

The department focuses on the diagnostics, treatment and research of oncological diseases in childhood, non-malignant blood diseases such as anaemia, haemorrhagic conditions and congenital coagulation disorders (haemophilia). The transplantation unit performs surgeries such as allogeneic and autologous transplantation of haematopoietic stem cells in the treatment of high-risk leukaemia, selected solid tumours, and congenital disorders of the immune system or metabolic defects.

In 2017, 20,024 patients were examined and treated on an outpatient basis. A total of 3,178 patients with cancer and 2,039 patients with non-cancerous disease were treated. The department newly diagnosed 197 children with malignant solid tumours, 39 children with leukaemia and myelodysplastic syndrome, 388 patients with benign tumours, and 457 children with non-cancerous disease. A total of 3,796 patients were hospitalised with 1,674 accompanying adults. In total, 20 allogeneic bone marrow transplants were performed, of which 16 were unrelated donors from registers, 4 from identical siblings, and 15 from autologous grafting (8 children). 4 infusions of mesenchymal cells (2 patients) were administered.

#### Specialised outpatient facilities:

- Oncology
- Late consequences centre
- Department for haemangiomas and lymphangiomas

- Tumours of the CNS (central nervous system)
- Langerhans cell histiocytosis
- Haematology
- Haematology care centre
- Congenital blood coagulation disorders and haemorrhagic conditions
- Care for patients following bone marrow transplantation

#### New methods and procedures

- A method of selective intra-arterial chemotherapy was introduced for indicated patients with retinoblastoma in cooperation with the Department of Radiology.

#### Important events in 2017:

- Markéta Kubričanová Žaliová, MD, PhD. from the department's Laboratory Centre received the Motol University Hospital award for creative work in 2017 for her work „New genetic diagnosis of acute paediatric lymphoblastic leukaemia“.
- Otto Hrodek, MD, DSc., Professor Emeritus of Paediatric Haematology and Oncology, 2nd Faculty of Medicine, Charles University and Motol University Hospital received the Neuron Prize for Lifetime Contribution to World Science in the field of Medicine
- Publishing activity by the department's physicians continued in 2017: 68 publications with a total IF = 377.
- In February 2017, the third annual Paediatric Oncology Day took place in Prague, which was largely organised by the department's staff. More on [www.dendetske-onkologie.cz](http://www.dendetske-onkologie.cz).

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

Head physician: Prof. Michal Rygl, MD, PhD.

Senior consultant: Luboš Zeman, MD

Head nurse: Mgr. Ilona Mayerová

#### Basic characteristics:

The Department of Paediatric Surgery is a leading European centre in paediatric surgery providing comprehensive diagnostic and therapeutic care for children from premature infants to adolescents. The department provides care for paediatric patients from across the Czech Republic within the framework of its fields of specialised expertise – neonatal surgery, thoracic surgery, surgical oncology, proctology, urology, surgery of the liver and biliary tract, congenital defects and paediatric poly-trauma –, as well as super consulting for foreign patients. The clinic has a new-born ICU (12 beds providing full intensive and resuscitative care), ICU for older children (10 beds for intensive care), 2 standard wards (23 and 20 beds) and a series of outpatient departments. In 2017, 2,977 were hospitalised, of which 240 children were hospitalised in the surgical ICU unit for new-borns. A total of 2,089 children underwent surgery. 18,524 children were treated in specialised outpatient departments and 5,565 children in emergency services. A team of 25 physicians and 80 support staff worked in the department in 2017.



### Specialised outpatient facilities:

- Thoracic surgery
- Surgical oncology
- Surgery of the liver, biliary tract and pancreas
- Neonatal surgery, congenital defects, prenatal consultations
- Urology
- Proctology
- Paediatrics
- Counselling for home parenteral nutrition

### New methods and procedures:

- The first surgical treatment of gastroschisis in the Czech Republic using a silicone silo was performed in 2017.
- The first thoracoscopic surgery for pulmonary sequestration in a child in the Czech Republic.
- The spectrum of mini-invasive surgery was extended with thoracoscopic surgery of diaphragmatic hernia, laparoscopic surgery for pyloric stenosis, laparoscopic surgery of the spleen
- Introduction of MRI (magnetic resonance) in the examination procedure for hollowed chest

### Unique technological equipment:

- Manual harmonic scalpel (Covidien/Metronic)
- Duet Encompass – a modern video device for urology and EMG of the pelvic floor with simultaneous connection to an X-ray machine
- A cystoscope with endoresector for infants, which enables mini-invasive surgery of the smallest children (Olympus/Wolf)
- Lone Star retractor for transanal operations, anorectal malformations and pelvic tumours
- A portable ultrasound machine designed for the continuous monitoring of patients following trauma of the abdomen and chest on the ICU bed. The machine was donated by the Kolečko Endowment Fund, which supports children's trauma centres across the Czech Republic in December 2016.
- Mobile pumps for children on home parenteral nutrition (B Braun)
- Mobile pumps for home parenteral nutrition (Nutricie)

### Important events in 2017:

- Prof. Michal Rygl, MD, PhD was appointed as head physician from 2017, and Luboš Zeman, MD was named as senior consultant.
- Jan Trachta, MD, successfully completed his attestation in paediatric urology and defended his international attestation from the European Society of Paediatric Urology (ESPU).
- Richard Škába, MD, PhD. was awarded honorary membership of the Czech Medical Association of J. E. Purkyně.
- The second workshop in reconstructive surgery with international participation took place in January 2017 under the supervision of Professor Imran Mushtaq. The course focused on children with bladder and cloacal exstrophy.

- Cooperation with Takeo Hospital in Cambodia continued in 2017 under the leadership of Dr. Trachta. There was another training cycle and 8 boys with congenital urethral defects underwent surgery.
- Internal Grant No. 6021 "Postnatal Care of Patients with Prenatally Recognised Obstructive Uropathy" was addressed. Coordinator: Jan Kříž, MD.

### Other scientific activities:

- 5 articles in international peer-reviewed journals
- 1x chapter in a book
- 8x article in a national journal
- 22x lecture at a national educational event - congress/seminar
- 9x lecture at an international/foreign event – congress/seminar
- 4x poster at an international/foreign event

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

*Head physician: Prof. Pavel Kršek, MD, Ph.D.*

*Senior consultant: Věra Sebroňová, MD*

*Head nurse: Gabriela Pavlová*

### Basic characteristics:

The department is a reference super-consulting workplace for all paediatric neurological diagnoses throughout the Czech Republic and also provides care for patients from abroad under certain diagnostic and therapeutic programmes (e.g. surgical treatment of epilepsy). There are two fully refurbished wards with a total of 40 beds for patients, including 6 lower-level ICU beds and 6 video/EEG and polygraphic monitoring beds. The department also has a fully equipped electrophysiological laboratory and a clinic with the following specialised outpatient departments. The Department of Paediatric Neurology is also an undergraduate and postgraduate teaching and research centre involved in many interdisciplinary and international projects.

In 2017, 1,015 children were hospitalised of a total of 1,287 hospitalisation accounts, and 17,615 patients were examined on an outpatient basis. The electrophysiological laboratory performed 4,892 procedures, of which 3,363 EEG, 536 EMG, 1,102 EP and 424 long video/EEG and polygraphs. Under the epileptosurgical programme, there were 21 resection operations, 6 invasive video/EEG studies and 2 vagal stimulator implants.

### Specialised outpatient facilities/counselling centres:

- Epileptology counselling centre
- Centre for sleep disorders in children
- Department for new-borns and infants at risk
- Counselling centre for neuromuscular diseases
- Department for the application of botulinum toxin
- Centre for neurocutaneous disease
- Counselling centre for inflammatory and demyelinating diseases
- Neuro-oncology
- Neuro-genetics



- Counselling for hereditary neurometabolic and neurodegenerative diseases
- Psychological and neuropsychological counselling

#### Centres with international accreditation:

- ERN for rare and comprehensive epilepsy (ERN EpiCARE)
- ERN for rare neuromuscular diseases (ERN NMD)
- Hereditary Ataxia Centre (as part of ERN RND)
- Centres recognised by the Czech Ministry of Health/Czech Medical Association of J. E. Purkyně:
  - Centre of highly specialised care for pharmaco-resistant epilepsy
  - Centre for sleep disorders in children

#### New methods and procedures:

- Introduction of genetic testing in patients with malformations in cortical development using methods of massive parallel sequencing in patients with congenital disorders of cerebral cortex development and familial focal cortical dysplasia. The diagnostic method was introduced by Barbora Beňová, MD and the department's DNA laboratory team under the leadership of Prof. Seeman, MD in collaboration with colleagues from the Department of Biology and Medical Genetics, 2nd Faculty of Medicine, Charles University and Motol University Hospital. Cooperation is also progressing with foreign colleagues.
- Introduction of a new method for the treatment of spinal muscular atrophy. An innovative therapy for patients with spinal muscular atrophy (SMA) with nusinersen (Spinraza) was introduced by the Centre for Neuromuscular Diseases under the direction of Jana Hablerová, MD, PhD, which is currently the only available treatment for this serious disease. The department was the first to introduce this treatment programme in the Czech Republic.

#### Unique technological equipment:

- NATUS Quantum 128-channel video/EEG system for monitoring intracranial electrodes

#### Important events in 2017:

- The Ervín Adam Award was presented to Petra Laššuthová, MD, PhD. for the publication: Laššuthová et al., Improving the diagnosis of inherited peripheral neuropathies through gene panel analysis, published in the journal Orphanet J Rare Dis. with IF 3.507 and Laššuthová et al., Severe axonal Charcot-Marie-Tooth disease with proximal weakness caused by de novo mutation in the MORC2 gene, published in the journal Brain with IF 10.292.
- Prof. Pavel Kršek was the historically first representative of the Czech Republic appointed to the board of the European Paediatric Neurology Society (EPNS).
- Jana Haberlová, MD, PhD. was the co-author of the book „Spinal muscular atrophy in context“ focusing on the issue of the serious neuromuscular disease, spinal muscular atrophy (SMA).
- Josef Kraus, MD, PhD. became a member of the Editorial Board of the prestigious journal Clinical Neurophysiology, the official journal of the International Federation of Clinical Neurophysiology (IFCN), IF 3.866

- 25 primary publications in journals with IF, with a total IF 196.7, 15 students in the PhD. and MD-PhD. programme;
- 11 grant projects, including two international projects.

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

*Head physician: Jiří Skřivan, MD, PhD.*

*Senior consultant: Michal Jurovčík, MD*

*Head nurse: Adriana Laudátová*

#### Basic characteristics:

The department is concerned with the diagnostics, conservative and surgical treatment of ENT diseases in paediatric patients from birth to 18 years of age. As a super-consulting workplace, it provides care for children with difficult-to-diagnose or difficult-to-treat diseases in the Czech Republic. The Centre for Cochlear Implants in Children works within the department and its phoniatic section. As one of two departments in the Czech Republic, the department performs surgeries of new-borns with cleft facial defects within the framework of multidisciplinary cooperation. The department is also part of the laryngo-tracheal centre of Motol University Hospital.

In 2017, 2,186 surgeries were carried out at the department, 2,326 patients were hospitalised and 11,187 outpatients were treated.

Part of the clinic is the Department of Phoniatics and Centre for Cochlear Implants in Children. The department primarily focuses on the selection of candidates for cochlear implantation in children and preoperative and postoperative care for long-term users of cochlear implants, who it provides with comprehensive phoniatic, logopaedic and psychological care, including programming speech processors. It further actively provides additional logopaedic rehabilitation in the patient's place of residence in the Czech Republic. The head of the detached department is Petr Myška, MD. A total of 2,246 examinations by outpatient physicians and 3,722 examinations by clinical logopaedists were performed in 2017.

#### Specialised outpatient facilities:

- Otosurgery department
- Audiology
- Clinical evaluation of candidates for cochlear implantation and rehabilitation following cochlear implantation
- Department assessing candidates for Baha implants
- Treatment of developmental defects of the neck and head
- Monitoring glandular swelling
- Phoniatics
- Thyrology
- Comprehensive treatment of lymphangia and haemangioma of the head and neck
- GERd diagnostics
- Somnology
- Plastic surgery

### New methods and procedures:

- Bilateral cochlear implantation since 2014;
- Treatment of choanal atresia using a BD stent;
- Application of a BD stent into the respiratory tract of children;
- Laryngotracheal reconstruction using Monnier LT-molde stents;
- Application of Baha implants in clinical practice;
- Sleep monitoring in apnoeic patients /PSG/;
- New method of diagnosing hearing based on DPOAE – CochleaScann and the use of the bone (BC) module in SSEP measurement technology;
- Programme of timely surgery of cleft defects in early age, the early detection and study of secretory otitis symptoms in patients with cleft defects;
- Introduction of a wireless device for automatic preoperative measurement of impedance and NRT for cochlear implants;
- Expansion of the spectrum of patients in the study of the intranasal application of *Lactobacillus acidophilus* in cleft patients;
- Establishment of a multidisciplinary working group on the complex surgical and conservative treatment of lymphangiomas and haemangiomas of the head and neck;
- Introduction of balloon dilation of tracheal stenosis;
- Introduction of plasma coblation as an alternative to traditional procedures /ToT AT, etc./

### Unique technological equipment:

- plasma generator – plasma coblation
- Aeris balloon catheter - for gentler dilatation of airway stenosis in children
- pH impedance meter
- Maico MI 34 high frequency tympanometer
- Neo Laser with microfibre
- Bienaire high speed bone cutter
- CochleaScann based on DPOAE – new objective audiometry technology
- Wireless unit for preoperative measurement of impedance and NRT for preoperative measurement of CI function, second generation
- Harmonic scalpel – less damaging preparation of tissue, ultrasound principle, low temperatures
- EndoCameleon – variable angle optics
- Shaver /microdebrider/ suitable for laryngeal microsurgery and rhinology
- NeuroStim 3, 3-channel preoperative monitor of peripheral nerves

### Important events in 2017:

- Organisation of a seminar for paediatricians and otolaryngologists at the Institute for Postgraduate Medical Education, „Audiological Problems in Childhood“;
- Interdisciplinary working group on the complex treatment of lymphangiomas and haemangiomas of the head and neck;
- Organisation of an interdisciplinary seminar „Alien bodies in the aerodigestive tract in children“;
- December 2017, organisation of the 4th national phoniatic seminar „The treatment of hearing defects does not always end in complete success“.

- Five lecture days organised for the parents of children - candidates for cochlear implants.
- Participation in the “Roadshow - Otolaryngology and gastroenterology for paediatricians and GPs for children and adolescents“ in cooperation with Akacia in five large cities in the Czech Republic and two in Slovakia;
- Successful defence of the National Agency for Agricultural Research multidisciplinary grant project QJ1210093: New methods for the production, quality control and effects of probiotic foods. Ended with a registered patent for a Dried probiotic product with moisturising effect for special applications.
- Invited participation in the 4th Congress of ORL-HNS, Barcelona, 7 November 2017. Multiple active participation in the 7th Czech-Slovak Congress of Otolaryngology and Head and Neck Surgery, 64th National Congress of the Slovak Society for Otolaryngology and Head and Neck Surgery. 79th Congress of the Czech Society of Otolaryngology, 6-8 September 2017, Martin, cf.
- Award for 2nd best poster: Jurovčík M., Borský J., Černý M., Kotaška K. Skřivan J: Early detection and study of secretory otitis symptoms in children with cleft defects operated at birth. 7th Czech-Slovak Congress of Otolaryngology and Head and Neck Surgery, 64th National Congress of the Slovak Society for Otolaryngology and Head and Neck Surgery. 79th Congress of the Czech Society of Otolaryngology, 6-8 September 2017, Martin, cf.
- Kutwirt Award for Best Publication: Masná M., Kutra R.: Orbital abscess - a possible complication in acute rhinosinusitis, even with consistent conservative therapy. Otolaryngology and Phoniatics. 2016, Vol. 65 Issue 3, p196-200. 5p

### Common paediatric and adult inpatient departments

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

*Head physician: Assoc. Prof. Tomáš Vymazal, MD, PhD., MHA*

*Senior consultant: Radka Klozová, MD*

*Head nurse: Mgr. Taťana Maňasová*

#### Basic characteristics:

The department provides anaesthesia and resuscitation care for children and adults in accordance with the needs and requirements of Motol University Hospital. It is the largest workplace of its kind in the Czech Republic in terms of number of doctors and other medical staff and the range of healthcare services. The department provides specialised care requested by lower-level healthcare facilities throughout the country. It is the managing and coordinating workplace for the postgraduate education of doctors and nurses, teaching anaesthesiologists and doctors in other specialist areas. It also provides education for both medical and bachelor degree students at the 2nd Faculty of Medicine within the framework of international educational projects.

In 2017, 1,293 patients were hospitalised at the department, of which 801 were adults and 492 children, with 79 patients receiving subsequent aftercare. Although the number of administered anaesthesia fell slightly, as did the number of hospitalisations, the medical and economic demands of these patients have increased dramatically. Anaesthesia was administered to 36,219 patients in 2017, of which 11,147 were children.

### New methods and procedures:

- Launch of EMCO programme in the care of critically hypothermic patients received by emergency medical services
- Use of HighFlow Oxygen Therapy in the care of patients with failing respiration in resuscitation care
- Launch of the Centre of Simulation Medicine - 2 elective subjects for physicians
- Standard introduction of long-term paediatric peripheral catheters - PICC;
- The consistent application of ERAS procedures in large abdominal procedures with a clear impact on the quality of hospitalisation in cooperation with the Department of Surgery, 2nd Faculty of Medicine, Charles University and MUH;
- In 2017, 11 multi-organs transplants were performed – in total 26 organs were removed;
- In 2017, 43 patients were hospitalised following lung transplants;
- Routine use of ECMO technology not only in lung transplantation, but also other conditions associated with acute life-threatening lung and heart failure in adult and paediatric intensive care;
- Another heart transplant was performed in a child patient in cooperation with the Children's Heart Centre;
- Routine use of sonography in ultrasound guided vascular puncture and regional nerve blocking techniques in children and adults;
- Progressive implementation of technologies with the aim of introducing paperless documentation in the children's resuscitation unit and children's operating theatres in the future;
- Wide use of echocardiography in patients undergoing cardio surgery and other procedures, including lung transplants, in cooperation with surgeons on the "Ex-vivo lung perfusion before transplantation" project;
- Routine use of Target Temperature Management technology- targeted cooling of patients after circulation arrest;
- Routine investigation of haemocoagulation in hospitalised patients – TEG, ROTEM for early diagnosis of coagulopathy, change in the management of haemorrhagic conditions saving significant amounts of blood derivatives; economic savings in the order of hundreds of thousands of CZK per annum, procedures implemented into MUH internal guidelines;
- Extensive modernisation of instrumentation with respect to the latest ventilation techniques using transpulmonary pressure management;
- Extensive modernisation of anaesthesia room equipment;
- Use of sonography in the early diagnosis of bleeding into cavities in trauma patients;
- Use of state-of-the-art video-laryngoscopy technologies for difficult intubation, including disposable intubation aids and devices;
- Use of a combination of neuraxial blockades during the replacement of large joints (hip, knee), including training personnel at specialised workplaces;
- Use of peripheral blockades in paediatric and adult patients;
- Routine use of the ability to reliably reverse neuromuscular blockades after anaesthesia;
- Use of non-invasive ventilation techniques for the treatment of respiratory insufficiency in children and adults;

- Routine monitoring of cerebral oximetry and cerebral perfusion during surgeries of children and adults, not just during extracorporeal circulation, using deep hypothermia;
- Comprehensive treatment protocol to deal with diastolic heart failure.

### Important events in 2017

- Habilitation of three of the department's physicians
- Participation in the organisation of regular nationwide workshops „Ultrasound in anaesthesia and intensive care“
- Second year of the interdisciplinary seminar with international participation on the topic of PICC in paediatric intensive care
- Publication of 3 book titles
- Award for the textbook Anaesthesia and Intensive Care in Thoracic Surgery as the best professional publication in its field for 2017
- Expansion of technology for electronic documentation of children's resuscitation beds and operating theatres – pilot project
- A total of 7 original works published in both peer-reviewed journals and journals with IF
- Finalisation of the Critical Conditions Manual – Safe Anaesthesia Manual
- Preparation of course material for physicians at the 2nd Faculty of Medicine

Part of the Department of Anaesthesiology and ICM, 2nd Faculty of Medicine, Charles University and Motol University Hospital is:

### Department of subsequent intensive care and Department of long-term nursing care

*Head physician: Kateřina Čadová, MD*

*Head nurse: Mgr. Soňa Hájková*

#### Basic characteristics:

Intensive care for long-term ventilated patients, weaning off the ventilator, haemodynamic stabilisation, modification of the internal environment, neurorehabilitation, physio and occupational therapy, reconditioning with mobilisation; tube feeding, basal stimulation. In 2017, 79 patients were hospitalised. Operations gradually expanded to the full number of beds – Subsequent intensive care 10 + Long-term nursing care 20.

#### Specific features of the department:

- Consulting service for patients and families in crisis, training in alternative communication, development of a home pulmonary ventilation programme (HPVP) and monitoring and management of patients on HPVP;
- Training in home tube feeding – PEG, training patients in the care of chronic tracheostoma and tracheostomy tubes;
- Acute consulting service for emergency cases in building 22 ("former infectious diseases"), training physiotherapists studying a bachelor's degree course in the special issues of intensive care/long-term nursing care for patients.



### Unique technological equipment:

- Hummingbird capnometer to monitor training of spontaneous breathing and patients on home artificial pulmonary ventilation
- Electrolarynx for training alternative speech in patients with a tracheotomy
- Sonography

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

Head physician: Prof. PaedDr. Pavel Kolář, PhD.

Senior physiotherapist: Mgr. Kateřina Míková

The department is divided into: Department of Rehabilitation, Spinal Unit, Department of Sports Medicine and the Centre for Pain Research and Treatment

### 1. Department of Rehabilitation

Senior consultant: Martina Kővári, MD

Head nurse: Mgr. Hana Jirků

#### Basic characteristics:

The department provides physiotherapy and rehabilitation in all aspects for adult and paediatric patients across all medical disciplines.

It provides care for outpatients (adults and children) and hospitalised patients (in individual adult and paediatric clinics and departments at the hospital). Part of the clinic is the Department of Acute Inpatient Rehabilitation. In 2017, a total of 629 patients were hospitalised in the department, 5,500 patients were treated in the outpatient section and 16,600 patients underwent rehabilitation at other workplaces.

#### Specific features of the department:

One of the department's main activities is respiratory physiotherapy. Other specific procedures include, but are not limited to, the treatment of spasticity including the administration of botulinum toxin, pelvic floor therapy, vestibular disorder therapy, visceral rehabilitation, swallowing therapy and diagnostics, etc.

There are other special programmes in the department. Serious forms of child cerebral palsy are assessed at interdisciplinary super-consulting seminars (intended for patients under 18 years of age from across the Czech Republic). The department also participates in the monitoring and treatment of pathological new-borns and patients with hereditary neuropathy.

The Dynamic Neuromuscular Stabilisation diagnostic and therapeutic concept, based on the principles of developmental kinesiology, was developed and put into practice at the department. The concept was developed by Professor Kolář, the head physician of the department. The department participates in teaching this concept in the Czech Republic and abroad.

### New methods and procedures:

- Functional electrical stimulation in patients with central paresis using a neurostimulator of the peroneal nerve called the WalkAide system
- Examination and therapy of standing and walking disorders on a dynamic treadmill with integrated pressure sensors and virtual reality
- Use of biofeedback devices in patients with faecal incontinence, with the possibility of hiring the device and biofeedback for home therapy.
- The ongoing programme of NORA (neurological-orthopaedic-rehabilitation) seminars is a unique programme in the Czech Republic focusing on paediatric patients, especially children with cerebral palsy.
- New development of a comprehensive programme of rehabilitation for paediatric haemato-oncology patients and a system of care for children born prematurely
- Standardised walking tests of children (Time Up and Go Test, 6-minute walking test, etc.), testing on a scale to diagnose central coordination disorders and fine motor testing using the Box and Black test, 9- Peg Hole test, etc.
- Methodological guidelines for rehabilitation care were developed, which have been set up systemically. Progressive training of station nurses and other middle and lower level support staff is underway and rehabilitation nursing audits have been implemented
- Extension of specialised care in the outpatient sector - newly created respiratory outpatient department
- Acquisition of special progressive stretch splints (JAS system) for hospitalised patients with spastic upper limb paresis
- Techniques in Handling and Moving and Kinaesthetic Mobilisation concepts have been newly incorporated into the system of training in the field of rehabilitation care

### Unique technological equipment

- Walk-Aide system for functional electrical stimulation of muscles in central paresis of the leg
- Dynamic treadmill with integrated pressure sensors and virtual reality
- Pablo console - handheld training tool
- "Brain port" device for the diagnosis of vertiginous conditions
- "Balance master" device for the treatment of stability disorders and vertiginous conditions
- "X box" device and "Wee" system for training stability and coordination skills in children
- Myofeedback device for electrical stimulation of pelvic floor muscles
- Sonographic device used to navigate the administration of botulinum toxin in the treatment of spastic patients
- Dolosys Paintracker

### Important events in 2017

- Significant active participation by department staff in 2 Vojta Symposiums to mark the 100th anniversary of the birth of Prof. Vojta – the conferences were held in Cologne and Olomouc



- An application was submitted for re-accreditation of the 3-year Bachelor's degree course in physiotherapy as part of Charles University's institutional accreditation. We are currently processing comments received from the Czech Ministry of Health. Following the approval of supporting documents by the Ministry, the completed application will be forwarded to university management.
- As part of the opening of a new block of lecture halls, part of theoretical training in physiotherapy was moved to new premises
- As. Ondřej Čákr successfully completed habilitation in the field of Rehabilitation and Sports Medicine
- As part of an exchange programme, two students from Slippery Rock University, PA, USA attended the department for 3 weeks (February-March 2017) and two of our students attended their university in the US on a four-week stay (August-September 2017)
- Two students from Finland received a 2-month placement (February-March 2017) at the department under the Erasmus programme
- Several articles with IF were published in foreign language journals as part of the Progress Q41 programme.

## 2. Spinal Unit

*Head physician: Prof. PaedDr. Pavel Kolář, PhD.*

*Senior consultant: Assoc. Prof. Jiří Kříž, MD, PhD.*

*Head nurse: Mgr. Hana Jirků*

### Basic characteristics:

The Spinal Unit provides therapeutic and rehabilitation care for patients in the post-acute stage following spinal injuries and for patients in the chronic stage following spinal cord injuries with serious health complications

In 2017, 70 patients with acute spinal lesions and 25 spinal patients in the chronic stage with acute complications were hospitalised in the unit; approximately 250 outpatients were treated as part of monitoring and management or newly emerging health problems.

### New methods and procedures:

- Continuation of the project "Possibilities for the clinical use of returned reflexes and volitional movement in the period of spinal shock" for the period 2015-2017
- Continuation of the European project "European Multicentre Study of Spinal Cord Injury (EMSCI)". IFP 2001/P 66
- Continuation of the European grant project "Antibodies against Nogo-A to enhance regeneration and functional recovery after acute spinal cord injury, a multicentre European clinical proof of concept trial". H2020, PHC 15-2015

### Unique technological equipment:

- Ferticare Multicept device for vibro-stimulation as part of cooperation with the Department of Urology (donated by the Movement without Assistance Foundation)
- Misonic SonicOne device for the removal of necrotic material and devitalised tissue in skin defects (donated by the Movement without Assistance Foundation)
- Finapres NOVA device for evaluating autonomous nervous system disorders (Grant from the Ministry of Health of the Czech Republic)

- ABPM device – pressure holter (donated by the Movement without Assistance Foundation)

### Important events in 2017:

- The Spinal Unit organised a seminar with international participation on "The prevention and early treatment of decubitus ulcers in patients following spinal cord injury" to mark Spinal Injury Day celebrated worldwide on 5 September 2017.
- Organisation of a course on the examination of spinal patients, a course on physiotherapy for patients with spinal lesions, a course on intermittent catheterisation, and a course on wound healing
- Significant publications in Czech and foreign peer-reviewed journals and journals with IF.

## 3. Centre for Pain Research and Treatment

*Senior consultant: Assoc. Prof. Jiří Kozák, MD, PhD.*

*Head nurse: Lenka Gavendová*

### Basic characteristics:

The Centre for Pain Research and Treatment is a multidisciplinary facility for the care of chronic pain conditions. It is one of six neuromodulation centres in the Czech Republic; it is a postgraduate teaching workplace in pain management and neuromodulation techniques. The department introduced a telephone counselling „Pain Line.“ The centre provides inpatient and outpatient care and is a super-consulting workplace for pain management workplaces in the Czech Republic.

### New methods and procedures:

- The centre has been using multi-contact RF electrodes (Pasha) since 2015, with the possibility of continuous insertion of the electrodes to a radio frequency with a catheter for the application of pharmaceuticals.
- Nerve blocks under USG navigation and a neurostimulator
- Pain testing using a Pain Tracker
- Peripheral nerve stimulation and spinal stimulation

### Important events in 2017:

- Active participation by Assoc. Prof. Kozák in Czech and international congresses and seminars
- Publications in Czech and foreign peer-reviewed journals and journals with IF.

## 4. Department of Sports Medicine

*Senior consultant: Assoc. Prof. Jiří Radvanský, MD, PhD.*

### Basic characteristics:

The department of sports medicine is one of the clinic's outpatient departments. Its activity is mainly functional diagnostics with regional competence (in the case of congenital heart defects with nationwide competence) and derived locomotor recommendations for pre-school children to the elderly, targeted at patients with, for example, advanced civilization diseases in the context of metabolic syndrome or chronic respiratory diseases.

The department performs functional load diagnostics of the circulatory system, even in patients confined to wheelchairs using a windlass ergometer and spiroergometry.

In 2017, approximately 2,322 athletes were examined as part of preventive sports visits, together with 2,125 patients with stress load difficulties. 120 patients underwent controlled locomotor therapy and 82 patients were subject to nutritional intervention.

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

- In 2017, we will introduce stress determination using the rate of blood flow in the aorta in patients with coarctation of the aorta.

#### **Important events in 2017:**

- The department has become the largest training centre in functional diagnostics for the needs of sports medicine in the Czech Republic.

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

*Head physician: Prof. Dagmar Dotřelová, MD, PhD., FEBO*

*Senior consultant: Milan Odehnal, MD, MBA*

*Head nurse: Mgr. Jana Králíčková*

#### **Basic characteristics:**

The Department of Ophthalmology provides diagnostic, preventive and therapeutic care for patients from birth to old age. In the field of paediatric ophthalmology, the department serves as a super-consulting centre in Central and Eastern Europe. The department has two specialist outpatient eye care centres for children and adults. The inpatient department has 25 beds (including beds for mothers or other adults accompanying children). Modern operating theatres adjoin the department's inpatient section.

In 2017, the department performed surgeries for 502 adults and 782 children. The most common surgical procedures were cataract surgery in adults (194). The most common procedures in children were surgery of strabismus, congenital cataracts, cosmetic-functional procedures in the region of the eyelids and examinations under anaesthesia. A total of 6,774 children and 11,404 adults were examined and treated as outpatients.

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

- Paediatric ophthalmology
- Centre for premature babies with retinopathy
- Centre for strabology, glaucoma, cataracts and oncology
- Adult ophthalmology
- Vitreoretinal Centre, Centre for diabetology, cataracts, glaucoma and for plastic surgery
- Orthoptic outpatient centre

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

- New technique for the treatment of the retina in premature babies with retinopathy performed under the direct control of a retinal camera;

- Introduction of a cosmetic-functional operation of the lower eyelids - transconjunctival blepharoplasty
- Intra-arterial treatment with Melfalan was initiated in patients with a malignant retinal tumour (advanced retinoblastoma) in cooperation with the Department of Radiology and the Department of Paediatric Haematology and Oncology;
- The administration of the biological preparation Lucentis (anti-vascular endothelial growth factor treatment) by injection into the vitreous area has been used in the following indications since 2016: diabetic macular oedema, macular oedema after retinal venous occlusion
- New procedure for the intubation of lacrimal pathways in children and adults with obstruction of lacrimal ducts (Ritleng method)

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

- Retinal camera- RETCAM – designed for the examination of young children
- Ophthalmic refractometer designed for diopter examination
- Specialised ultrasound for eye examination in young children

#### **Important events in 2017**

- Multi-author publication, Stem Cell Deficiency: Clinical, Cytological and Genetic Characterisation. Stem Cell Rev. 2017, Nov 13 doi: 10.107/s12015-017-9780-y- IF 4.456
- Authors, Jiří Cendelín, MD, PhD. and Nina Ondrov MD from the Department of Ophthalmology took first place in the Educational Videos section at the XXXV Congress in Lisbon. The topic of their video was traumatic cataracts in childhood
- Nina Ondrová, MD received recognition for best lecture in this block at the 15th International Congress of the Czech Society of Refractive and Cataract Surgery in Ostrava. Another of our physicians, Jiří Cendelín, MD, PhD. took first place in the video competition (topic - traumatic cataracts in children).

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

*Head physician: Prof. Tomáš Trč, MD, PhD., MBA*

*Senior consultant: Daniel Rybka, MD*

*Head nurse: Helena Hlásková*

#### **Basic characteristics:**

The department provides diagnostic and therapeutic care in the field of orthopaedics and traumatology for both paediatric and adult patients, not only in the catchment area, but through super-consulting services throughout the Czech Republic.

In 2017, 1,322 children and 2,133 adults were hospitalised, i.e. a total of 3,455 patients. 24,589 patients were treated in the children's section and 14,157 patients in the adult section, i.e. a total of 38,746 patients.

1,132 surgical procedures were performed for paediatric patients and 2,045 for adult patients, i.e. a total of 3,177 operations.

The department also participates in the development and implementation of new methods and technologies in orthopaedics, traumatology, sports medicine and new biotechnologies

used in the treatment of the locomotor system (cartilage, ligaments, tendons and bones). Department staff are currently investigators on several grant projects at national, as well as international level.

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

- Orthopaedic oncology centre
- Scoliosis
- Sports traumatology for children and adults
- Specialised arthroscopic interventions
- Neurogenic defects
- Congenital skeletal defects
- Primary and revision endoprosthetics
- Complex surgery of the shoulder joint

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

- Treatment of cartilage defects using an artificial collagen-based implant;
- All-inside ACL reconstruction using one of the hamstrings allows knee joint stability to be restored using a mini-invasive arthroscopic technique. The method respects the anatomy of the ACL, allowing balanced and proper toning of the graft. All targeting, channel preparation and grafting is performed from the inside of the joint. Due to minimal trauma, subsequent rehabilitation and the patient's overall recovery are significantly accelerated and facilitated.
- Use of V.A.C. (Vacuum assisted closure) – a system with extended active automatic cleaning of wounds V.A.C ULTA VERAFLUO. Vacuum therapy is combined with flooding the defect with a rinsing or therapeutic solution. The result is significant elimination of the bioburden, demarcation of necrosis and accelerated proliferation of fibrocytes.
- Meniscus transplant by allograft;
- Surgical replacement of the anterior cruciate ligament in children using an open growth joint technique without disturbing the growth plate.

#### **Important events in 2017:**

- Research project 2016-2019 FV1065 in collaboration with Grade Medical „Highly functional nanofiber dressing material with a barrier function and active drug release“. The goal for 2017 was achieved: Encapsulation of active ingredients into liposomes - development and optimisation of methodology. Verification of liposome properties. Verification of the properties of encapsulated substances compared to non-encapsulated. Surface treatment of nanofiber substrates with liposomes and verification of properties.
- Organisation of the international event “VII. Spring Orthopaedic Symposium” in March 2017 at the National Technical Museum in Prague, including professional guarantees on the topic of Paediatric Orthopaedics and Traumatology.
- Organisation of the XX. Traditional Teplice Orthopaedic Symposium in December 2017, including professional guarantees on the topic: Re-implantation of replacement joints.

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

*Head physician: Assoc. Prof. Michal Tichý, MD, PhD.*

*Senior consultant: Jiří Preis, MD*

*Head nurse: Bc. Gabriela Šuláková*

#### **Basic characteristics:**

The department focuses on the specialised neuro-surgical acute or planned care of paediatric and adult patients; consulting services are provided across its field of specialisation. It also provides undergraduate and postgraduate education and conducts scientific and research activities.

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

- Paediatric neurosurgery
- Neurosurgery for adults

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

- Measurement of neurophysiological function during brain and spinal cord surgery using a multimodal device, peroperative stimulation of the brain centre in young children
- Continued implantation of baclofen pumps for the treatment of generalised spasticity in children and adults
- Another broad area is the surgical treatment of craniosynostosis. Thanks to many years of experience and the presence of a maxillofacial surgeon at the workplace, our department is able to treat even the most complex deformities and treats most of these patients from all over the country every year
- Orientation on min-invasive approaches in the treatment of degenerative diseases of the spine.
- Vertebroplasty and stentoplasty in the treatment of osteoporotic fractures of the spine in cooperation with the Department of Radiology and the Department of Rehabilitation and Sports Medicine.
- Radiofrequency neuromodulation for painful conditions (vertebrogenic, peripheral nerves).
- As part of multidisciplinary collaboration with the maxillofacial surgeon, ENT specialist and plastic surgeon, we are engaged in treating large lesions in the base of the skull and face. These are often procedures that are not, or cannot be addressed elsewhere, where a multidisciplinary approach is essential. Reconstruction often follows the resection procedure, with the need to address large soft tissue defects. The reconstruction part of our team has extensive experience in the coverage of such defects through microvascular free tissue transfer.
- Use of highly specialised multimodal monitoring of patients with craniocerebral injury in the field of neuro-traumatology;
- A surgical programme and endovascular techniques are both being developed as part of the neurovascular programme in cooperation with the Department of Radiology. Decompressive craniotomy is also performed in patients with ischemia in collaboration with the Department of Neurology;



- Development and standard use of frame and frameless stereotaxy in the introduction of deep brain electrodes and biopsies of the brain.
- The programme for the treatment of refractory epilepsy at the hospital's Centre for Epilepsy continues. Stereotactic implantation of deep brain electrodes for subsequent long-term video-EEG monitoring for pharmaco-resistant epilepsy and resection epilepsy surgical procedures are performed.
- Endoscopy - development of techniques to address congenital developmental defects in children with hydrocephalus and synostoses; over the last year also in new-borns.

#### Unique technological equipment:

- Medtronic electromagnetic neuronavigational device without the need for fixation of the head on new central operating theatres for children (including frameless stereotaxy).
- Brain Lab cerebral neuronavigational device, integrated with a Pentero microscope (Zeiss) and the company's SW.
- Nicolet Endeavor neuro-monitoring device for intra-operative monitoring of neurophysiological functions
- SonicWeld ultrasound applicator for absorbable osteosynthesis fixation.
- Radionics stereotactic frame device
- Neuro-endoscopic device
- DIGI – LIFE IP digital transcranial Doppler
- Ability to live stream surgical procedures, including connection to the operating microscope and option of videoconferencing

#### Important events in 2017:

- Active participation by department staff in a number of professional events at home and abroad.

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

Head physician: Prof. Tatjana Dostálová, MD, DSc., MBA

Senior consultant: Milan Hubáček, MD

Head nurse: Mgr. Václava Kolomazníková

#### Basic characteristics:

Paediatric and adolescent stomatology with a focus on healthy and handicapped patients - multidisciplinary cooperation between a practical dentist, paediatric dentist, periodontist, prosthetist, orthodontist, dentoalveolar and craniomaxillofacial surgeon in the treatment of congenital and acquired developmental defects, injuries and tumours, children's centre for dis-traction osteogenesis of congenital developmental defects in the facial skeleton and the joint centre for mandibular endo-prosthesis. The diagnosis and treatment of congenital and acquired splanchno-neurocranium defects in cooperation with other departments and institutions (e.g. neurosurgery, ENT, ophthalmology, oncology, plastic surgery, biology and genetics) and the development of microscopic craniomaxillofacial surgical procedures.

In 2017, 27,294 outpatients were treated, with 635 one-day procedures / 259 cases of dental work under general anaesthesia and 376 surgical procedures/. 762 patients were hospitalised in the inpatient department and 783 surgeries were performed, of which 268 involved dental work on handicapped patients under general anaesthesia.

#### Specialised outpatient facilities:

- Maxillofacial surgery /with a focus on congenital developmental defects/
- Mandibular diseases in children and adolescents
- Oncology
- Diseases of the salivary gland in children
- Prosthetics
- Implantology
- Periodontology
- Orthodontics
- Orthodontic surgery with a focus on the treatment of mandibular malformations

#### New methods and procedures:

- care for cleft patients /complex dental care/
- orthognathic surgical procedures, including specialised counselling and 3D modelling, planning and reconstruction
- dental implantology and managed bone regeneration with a focus on young handicapped patients
- dental treatment of handicapped patients under general anaesthesia and analgesia
- mandibular surgery, including subtotal endoprosthesis
- facial skeletal distraction in children with congenital developmental defects
- digital dentistry using an intraoral and facial scanner
- CATCAM technology

#### Unique technological equipment:

- DIAGNOCAM 2170 /digital camera system for the diagnosis of dental lesions/
- PiezoSurgery of hard dental and bone tissues /gentle bone separation/
- SurgicPro – load-analysis implantation system
- CAD/CAM /technology for the creation of dental restorations/
- PC dental arch
- CBCT I-CAT 3D imaging system
- 3SHAPE Trios intraoral scanner

#### Important events in 2017:

- Participation in grant studies:
  - Use of dental imaging technologies in forensic anthropology
  - Reconstruction of hard and soft tissues in the orofacial region (Institutional support of Motol University Hospital)
  - Plastic and maxillofacial surgery in the context of forensic portrait identification of persons VIIVS/281
- Participation in studies within the framework of European cooperation:
  - Rare congenital and developmental defects of the orofacial system (Norwegian Funds)



- Congenital and developmental defects of the orofacial system (Centre for the Czech Republic within the EU)
- In 2017, Iva Michalusová, MD completed her specialised postgraduate studies in the field of Oral and Maxillofacial Surgery.
- Petra Hliňáková, MD graduated with the title of MBA.
- Multiple active participation in international and national congresses;
- The new Department of Stomatology, Orthodontic Centre opened on 18 September 2017, together with the newly refurbished outpatient department in the Department of Subsequent Intensive Care and Long-Term Nursing Care.

## Adult inpatient departments

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

*Head physician: Roman Chmel, MD, PhD., MHA*

*Senior consultant: Marek Pluta, MD, PhD.*

*Head nurse: Mgr. Iveta Oravcová*

#### Basic characteristics:

The department provides care in the full spectrum of its specialisation – gynaecology and obstetrics – including specialised oncological gynaecology, urogynaecological diagnostic examinations and surgical interventions, the treatment of sexual dysfunctions and the treatment of sterility using assisted reproduction methods. The department is a perinatology centre of the highest order, providing care for extremely premature new-borns with regional and nationwide competence. The department defended its international EBCOG accreditation in 2017, enabling the postgraduate education of doctors to acquire specialised competence. In 2017, 7,830 patients were hospitalised in the department, with a total of 4,850 operations and 89,680 patients treated on an outpatient basis. There were 3,505 births recorded at the department.

#### Specialised outpatient facilities:

- Oncological gynaecology and colposcopy
- Urogynaecology
- Paediatric gynaecology
- Endocrinology
- Sexology
- Endoscopy
- Centre of reproductive medicine
- Ultrasound diagnostics and foetal medicine
- Prenatal diabetology
- Cardiopathy and haematological diseases in pregnancy

#### New methods and procedures:

- Department staff have been working on a study to verify new fertility treatment methods for women with absolute uterine factor infertility through uterine transplantation since 2015. The study was approved by the Ministry of Health in 2015.

The department is working on the project in cooperation with IKEM (Institute of Clinical and Experimental Medicine). The first cryo-embryo transfers were performed in 2017 as part of the artificial insemination of patients who had undergone transplantation.

#### Unique technological equipment:

- Therapeutic CO<sub>2</sub> laser for the treatment of premalignant changes in the vulva and vagina
- Urodynamic diagnostic device

#### Important events in 2017:

- Department physicians were the authors and co-authors of 7 publications in journals with IF
- Establishment of a centre for the treatment of congenital defects of the female genitalia.

Part of the Department of Obstetrics and Gynaecology, 2nd Faculty of Medicine, Charles University and Motol University Hospital is

### Department of Neonatology with NICU

*Senior consultant: Miloš Černý, MD*

*Head nurse: Lenka Vaničková Kubů*

#### Basic characteristics:

The neonatal department is part of the perinatal intensive care centre of Motol University Hospital, with supraregional competence. It provides comprehensive care for new-borns with congenital developmental defects from all over the Czech Republic in cooperation with paediatric internal and surgical fields. Last year, 117 children with a severe congenital developmental disorder requiring urgent or timely treatment (90% residing outside Prague). Were concentrated here. The department also provides specialised and intensive resuscitation care for premature babies, particularly extremely premature and critically ill new-borns, regardless of gestational age. Care of physiological new-borns, mainly in rooming-in mode, is a matter of course. In 2017, a total of 3,573 children were born at the department, of which 337 had low birth weights (<2500 g) and 66 a very low birth weight (<1500 g). A total of 434 new-borns were treated in the NICU last year. For several years, our department has had one of the lowest specific mortality rates for new-borns under 1,000 g in the Czech Republic.

#### Specialised outpatient facilities:

- Children at Risk and Comprehensive Care Centre for children with risky psychomotor development.

#### New methods and procedures:

- Early correction of cleft lip in new-borns continues (i.e. by the 10th day after birth) continues in cooperation with the ENT Department, 2nd Faculty of Medicine, Charles University and Motol University Hospital and a plastic surgeon. In 2017, corrective plastic surgery was performed on 42 new-borns.

### Unique technological equipment:

- NIRS: monitors the oxygenation of tissue using spectrophotometry.

### Important events in 2017:

- Organisation of the 3rd annual seminar in the cycle “Interdisciplinary Problems of Neonatology in the 21st Century”, on the topic of “Congenital Developmental Defects”;
- Nationwide collection of data on the late morbidity of children at perinatal risk;
- Evaluation of teaching and the interest group in neonatology by students of the 2nd Faculty of Medicine of Charles University was very positive.
- Organisation of the 10th annual meeting of former ICU patients - “Premature Picnic”.

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

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

Senior consultant: Vladimír Srnský, MD

Head nurse: Mgr. Kateřina Lisová

### Basic characteristics:

The Department of Internal Medicine provides comprehensive diagnostic and therapeutic care in almost the entire spectrum of internal medicine for hospitalised patients and outpatients in the catchment area, and super-consulting services for patients throughout the Czech Republic. It provides undergraduate education for 3rd to 6th year Czech and foreign students of the 2nd Faculty of Medicine of Charles University and postgraduate education in the field. The department is a training centre for doctors before their attestation in internal medicine, gastroenterology, diabetology/endocrinology, nephrology, intensive metabolic care and parenteral and enteral nutrition. The department is an educational centre for abdominal sono-graphy courses organised by the Institute for Postgraduate Medical Education, including licensing, guaranteed by the Czech Medical Association.

In 2017, the department treated 53,063 outpatients and 4,487 patients were hospitalised.

### Specialised outpatient facilities:

- General internal medicine (incl. consulting services)
- Gastroenterology (incl. endoscopy and sonography)
- Diabetology
- Nephrology (including peritoneal dialysis)
- Cardiology (incl. ECHO)
- Angiology (incl. DUS examination of arteries and veins)
- Podiatry
- Nutrition (incl. obesitology)
- Lipodology
- Endocrinology
- Vascular access

### New methods and procedures:

- The department of dialysis introduced therapeutic apheresis - a method used for:
  - 1 / lipoprotein apheresis in patients with extreme dyslipidaemia and cardiovascular risk
  - 2/ rheopheresis in patients with diabetic foot syndrome of ischemic origin without the possibility of revascularisation to effect microcirculation and healing defects (device: Art Universal Fresenius)
- Examination of the biliary tract using the SpyGlass endoscopic system that enables direct visualisation of bile duct mucosa with the option of targeted biopsy or intra-ductal lithotripsy. This examination is especially indicated for bile duct stenosis of an unclear biological nature or difficult choledocholithiasis.
- The clinic has fully developed its “Department of Vascular Access”, providing mid-term and long-term venous access for adult patients (midline, PICC, permcath, port) according to recommended international standards.
- The metabolic unit uses a method of positioning PICC using an ECG at the patient’s bedside.
- The use of the method of continuous monitoring of glucose concentration with a focus on pregnant women continues, followed by monitoring the child of a diabetic mother after his/her birth
- The differential diagnosis of hyponatraemia based on differential values and the ratio of serum sodium and chloride concentrations has been put into practice.

### Unique technological equipment:

- Sono Side Monom ultrasonic device used for ultrasound navigation when introducing vascular access at the patient’s bedside
- “Pocket” infusion dispensers for patients on “home” parenteral nutrition
- Equipment in intensive metabolic care units is being gradually replaced: in 2017 - 1x Hamilton C1 pulmonary ventilator, 1x GE Healthcare B450 bedside monitor, 1x GE Healthcare B 850 bedside monitor, 1x Fresenius 5008 intermittent haemodialysis.

### Important events in 2017:

- Assoc. Prof. Piřha is the main organiser/moderator of the 5th IUA Course for Vascular Specialists - an interactive seminar on vascular diseases for young professionals from around 25 countries around the world
- Assoc. Prof. Piřha is the main co-organiser of the Czech Society for Atherosclerosis Satellite Symposium supported by the European Atherosclerosis Society and International Union of Angiology: „Novel Biomarkers of CVD Risk: Focused on Peripheral Atherosclerosis“
- Broř, MD was the Chair of the EASD Organisation Committee for the course on Clinical Diabetes and its Complications, 27-29 October 2017, Prague. 171 participants from 21 countries
- Broř MD has been the researcher of the grant Full Flow of Health Data Between Patients and Health Care Systems, International Consortium since 2016
- Broř, MD has been the researcher of the grant Innovation of the Diani telemedicine system based on personalised feedback from the Charles University Grant Agency: GA UK - Project No. 362217 since 2017

- Brož, MD was an important speaker at the annual congress of the International Diabetes Federation 2017, Young Leaders Summit: Education - How to Engage (not only) People with Diabetes
- Jan Brož, MD was presented the Award for International Collaboration by the Croatian Association for Diabetes and Other Metabolic Diseases in 2017:
- Prof. Charvát's book Venous Access - Medium and Long-Term (Grada) was awarded best monograph of 2016 by the Czech Society of Intensive Care Medicine in 2017.
- Assoc. Prof. Piřha is the main author of the monograph: Acute Conditions in the Department of Internal Medicine (Triton, 2017) and co-author of the monograph Diseases of the Peripheral Arteries (MF, 2017) and Vascular Medicine (Maxdorf Jessenius, 2017)
- The department's physicians are the authors of a number of international publications with a total IF of 14.97

Part of the department is the 6th clinic:

### Infectious diseases

*Head physician: Martin Tulach, MD*

#### Basic characteristics:

The Department of Infectious Diseases provides outpatient and inpatient care for patients with infectious diseases or suspected infectious diseases. The department has 23 beds, including one isolation box. The department also includes the travel medicine centre (incl. a vaccination and infectious disease centre for drug addicts).

The number of hospitalised patients in 2017 was 494. Procedures – lumbar punctures: 25.

#### Specialised outpatient facilities:

- General outpatient centre for infectious diseases
- Centre for the treatment of viral hepatitis
- Travel medicine centre (incl. vaccination centre)
- Infectious disease centre for drug addicts

#### New methods and procedures:

- Treatment of chronic viral hepatitis C with a directly acting new-generation virostatic (simnprevir) to treat genotype 1 in combination with ribavirin and pegylated interferon  $\alpha$ . Non-interferon treatment of chronic genotype 1 viral hepatitis C with new-generation antiviral agents has been initiated.

#### Unique technological equipment:

- New generation Toshiba ultrasound device with a probe for the examination of veins and organs in the abdominal cavity.

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

*Head physician: Prof. Jiří Hoch, MD, PhD.*

*Senior consultant: Zbyněk Jech, MD*

*Head nurse: Bc. Jitka Kabrnová*

#### Basic characteristics:

The Department of Surgery provides patients with complete surgical, outpatient, consulting and hospital care across the entire field, i.e. - general and abdominal surgery and abdominal and chest traumatology. Plastic Surgery treated a broad spectrum of outpatients and inpatients and also provided plastic surgery interventions at the workplaces of other surgical disciplines as part of interdisciplinary care. Interdisciplinary care focused on treating serious conditions mainly in cooperation with the Department of Urology, Department of Obstetrics and Gynaecology, 1st Department of Orthopaedics, the Spinal Unit of the Department of Rehabilitation and the Department of Paediatric Surgery. The number of reconstructive and preventive breast surgeries increased. The share of laparoscopic operations, procedures using the TEO method (transrectal endoscopic surgery) and ICG methods in anastomosis control increased significantly. Sentinel node detection by ferromagnetic labelling using the Sentimag device was initiated.

The department participated in undergraduate and postgraduate education and was the focal point of research tasks.

In 2017, the department treated 20,837 outpatients and 3,214 within the department; 3,193 patients were hospitalised and 2,907 underwent surgery.

#### Specialised outpatient facilities:

- Proctology
- Counselling for patients with colostomy – an educational and training centre
- Counselling for diseases of the pancreas, biliary tract
- Counselling for malignant melanoma
- Endocrinology
- Mammology
- Lymphedema treatment
- Endoscopy, anorectal manometry
- Plastic surgery

#### New methods and procedures:

- Certified course in laparoscopic surgery for physicians
- Surgical proctoscope – TEM / TEO
- ICG anastomosis control
- ERAS, monitoring heating of the patient during surgery
- Sentimag for the detection of sentinel nodes

#### Unique technological equipment:

- State-of-the-art dissection and electrocoagulation techniques, including the harmonic scalpel and LigaSure in conventional and laparoscopic surgery



- Scintillation probe for the identification of sentinel nodes during breast surgeries and malignant melanomas.
- Ultrasonic dissector.
- Surgical rectoscope with microsurgical instrumentation.
- DG-HAL (Doppler-guided haemorrhoidal artery ligation) set-up
- System for functional examination of the anorectum.
- Ferromagnetic detection of the sentinel node using the Sentimag system.

#### Important events in 2017:

- Organisation of the Working Day of the Coloproctological Section of the Czech Surgical Society of the Czech Medical Association of Jan Evangelista Purkyně with international participation; organisation of certified courses and professional placements.
- Continuation of the Motol University Hospital grant “Modern Technologies” – award of a patent for nanofiber technology.
- Three of the department’s physicians are chairmen of expert sections, two others are members of the committees of international societies, one is a member of the Czech Medical Academy
- First prize awarded by the Director of the Institute for Postgraduate Medical Education for the publication Hoch. J., Antoš F.: Coloproctology – selected chapters, Mladá fronta a.s., 2016.
- Monographs: Hoch. J., Antoš F.: Coloproctology – selected chapters II, Mladá fronta a.s., 2017, ISBN 978-80-204-4625-1
- Important publications in Czech and international peer-reviewed journals and journals with IF 2.689.

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

Head physician: Prof. Robert Lischke, MD, PhD.

Senior consultant: Jiří Tvrdoň, MD

Head nurse: Mgr. Ida Šmolíková

#### Basic characteristics:

The department is the largest thoracic surgery workplace in the Czech Republic - a centre of excellence, it provides comprehensive care in many fields of thoracic surgery (surgery of the lungs, trachea and respiratory tract, chest wall and chest deformities, surgery of the oesophagus, mediastinum, myasthenia gravis and diaphragm). The department is the only centre in the Czech Republic with a pulmonary transplantation programme. It is also the only accredited medical centre for second degree thoracic surgery. It provides medical care in the whole spectrum of abdominal surgery (operation of oesophageal reflux syndrome, diaphragmatic hernia, oesophageal achalasia, surgery of the abdomen and small intestine, liver, biliary tract and pancreas, surgery of the colon and rectum, hernia surgery, mini-invasive laparoscopic techniques, thoracic and abdominal traumatology and endocrine surgery).

In 2017, the department performed 3,095 surgeries, 3,592 patients were hospitalised and 20,416 patients were treated on an outpatient basis. 44 lung transplants were performed (high-volume centre, of which there are only 8 in Europe).

#### Specialised centres:

- Centre for Pulmonary Transplantation - National Centre of the Czech Republic
- Centre for the treatment of soft tissue sarcomas

#### Specialised outpatient facilities:

- Lung transplantation
- One-day surgery
- Diseases of the intestines and rectum
- Endocrine surgery
- Diseases of the lower peripheral veins
- Diseases of the liver, biliary tract and pancreas
- Surgery of soft tissue sarcomas
- Diseases of the oesophagus and abdomen
- Diseases of the lungs, mediastinum and chest wall
- Diseases of the mammary glands
- Internal medicine clinic

#### New methods and procedures:

- Preparation and introduction of the Ex vivo pulmonary perfusion and pulmonary reconditioning programme into clinical practice, a method leading to an increase in the number of suitable grafts for lung transplantation;
- Preparation of a lung transplantation programme from DCD (donor after circulatory death) donors;
- Preparation and implementation of a Heart and Lung Transplantation Programme into clinical practice in cooperation with IKEM;
- Introduction of the endoscopic application of absorbable stents for oesophageal, abdominal and respiratory diseases.

#### Unique technological equipment:

- 3D instrumentation - for laparoscopic and video-assisted thoracoscopic surgery

#### Important events in 2017:

- Press conference on the occasion of the 20th anniversary of lung transplantation in the Czech Republic
- Purkyně Endowment Fund – first prize - award for publication in a journal with the highest impact factor, surgical fields: Myšíková D, Adkins I, Hradilová N, Palata O, Šimonek J, Pozniak J, Kolařík J, Skallová-Fialová A, Špíšek R, Lischke R: Case-control study: Smoking history affects the production of tumour antigen specific antibodies NY-ESO-1 in patients with lung cancer in comparison with cancer disease free group. J Thorac Oncol. 2016 Oct 25. pii: S1556-0864(16)31176-5. doi: 10.1016/j.jtho.2016.09.136.



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

Head physician: Prof. Josef Veselka, MD, PhD., FESC, FSCAI, FICA

Senior consultant: Jiří Vejvoda, MD

Head nurse: Mgr. Jana Kovalčíková

### Basic characteristics:

The department provides comprehensive cardiac care for hospitalised patients and outpatients. It is directly linked to the Department of Cardiosurgery and Angiosurgery.

In 2017, more than 23,000 patients were treated on an outpatient basis and 4,823 patients were hospitalised. The department performed 2,919 selective coronarographies, 1,091 percutaneous coronary interventions, 431 catheterisation examinations of peripheral arteries, more than 7,000 echocardiographic examinations, 182 radiofrequency ablation arrhythmias, 118 ICD implants and 2,719 duplex ultrasound examinations of peripheral blood vessels.

### Specialised outpatient facilities:

- Congenital and acquired cardiac defects
- Cardiac failure
- Hypertrophic cardiomyopathy
- Electrophysiology and cardio stimulation
- Angiology

### New methods and procedures:

- Intravascular spectroscopy- this is the unique research use of a new invasive method for evaluating the qualitative composition of the atherosclerotic plaque in the Czech Republic;
- Extension of the use of the fractional flow reserve technique in patients with a stable AP and threshold angiographic findings;
- Catheter-based implantation of a 2nd generation biological valve in the aortic position;
- Unique method of genetic testing in patients with hypertrophic cardiomyopathy using next generation sequencing that allows simultaneous screening of large numbers of genes;
- Alcohol septal ablation – the largest group in the Czech Republic;
- Carotid stenting – the largest group in the Czech Republic;
- Use of the proximal-protection system during stent implantation in the carotid bed;
- Catheter-based occlusion of an atrial septal defect and patent foramen ovale (PFO);
- Catheter-based closure of ventricular septal defects;
- Method of controlled hypothermia in resuscitated patients;
- Cardiac imaging using 3D echocardiography;
- Endomyocardial biopsy programme;
- Treatment of rhythm disorders using 3D electro-anatomical mapping;
- Programme of cardiological examination of divers.

### Unique technological equipment:

- TVC Imaging system for infrared spectroscopy and intravascular ultrasound
- New echocardiographic instruments of the highest category with 3D transoesophageal echocardiography
- Innovation of catheterisation lab
- Lucas Compression System – a device for external cardiac compression (massage)

### Important events in 2017:

- The invited compendium publication for the medical journal Lancet: Veselka J.: Hypertrophic Obstructive Cardiomyopathy, Lancet 2017 is an extraordinary recognition of 20 years of scientific work and success not only in the context of Czech medicine.
- 8 papers were published in foreign journals with impact factor, original papers in the journals Lancet (in press; IF 48), Eur Heart J (IF 15), Heart (IF 6), Int J Cardiol (IF 5)
- Prof. Josef Veselka, MD, PhD. was elected president-elect of the International College of Angiology
- Physicians from the department attended a number of important conferences in the Czech Republic and abroad. In connection with their active participation, they received a number of awards:
- Cardiology Congress Brno – Prof. Josef Veselka, MD, PhD. took 2nd place in the Czech Society of Cardiology competition for the best Czech cardiology publication of the year and Horváth, MD won 2nd place in the young cardiologists' competition.
- Annual World Congress of the International College of Angiology (ICA) Vienna:
- Stěchovský MD won the "Young Investigator Award" for his active presentation.
- Organisation of the annual Prague Intervention XI interdisciplinary symposium, where the main topic was "TAVI - catheter-based implantation of a valve in the aortic position".
- Organisation of Arrhythmia Day titled "Arrhythmia in Practice", the topic of which was the foundations of electrophysiology and catheter-based ablation.
- The national 11th educational conference of the Working Group of Cardiac Nurses and Related Professions of the Czech Society of Cardiology took place under the guidance of head nurse Mgr. Kovalčíková, focusing on current cardiology issues.

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

Head physician: Assoc. Prof. Vilém Rohn, MD, PhD.

Senior consultant: Milan Horn, MD

Head nurse: Mgr. Barbora Kolářová, MSc.

### Basic characteristics:

The department provides comprehensive care in cardiac and vascular surgery. It provides non-stop surgical emergency care for all urgent cardiovascular system diseases, including trauma.

In 2017, 5,810 patients were treated on an outpatient basis, 947 major surgeries were performed, of which 471 were cardiac surgeries and 476 vascular surgeries.

The team performed a total of 45 extracorporeal membrane oxygenations (ECMO) for its own patients, patients of the 3rd Department of Surgery and the Department of Anaesthesiology and ICM.

The department provided comprehensive care for patients with congenital heart defects in adulthood in cooperation with the Children's Heart Centre. In 2017, 42 patients with congenital defects underwent surgery. 30 lung transplants were performed with extracorporeal circulation under the transplantation programme.

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

- Cardiology
- Cardio surgery
- Vascular diseases
- Congenital heart defects in adults
- Patients following surgical treatment of infectious endocarditis

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

- Video-assisted surgery in all patients with diseases of the mitral valve, tricuspid valve and atrial septum;
- Mini-invasive surgery of the aortic valve, use of a sutureless valve prosthesis;
- Video-assisted mini-invasive surgery of certain congenital heart defects (e.g. atrial septal defect, resynchronisation therapy);
- Comprehensive care of adult patients with congenital heart defects;
- Surgical treatment of infectious endocarditis, including the treatment of drug addicts in collaboration with the Department of Infectious Diseases of Motol University Hospital;
- Hybrid mini-invasive treatment of polymorbid patients with CAD (PCI - stent + MIDCAB - - bypass via mini-thoracotomy without extracorporeal circulation);
- Mechanical heart and lung support - ECMO;
- Reconstruction (conserving) surgery of the aortic valve.

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

- ECMO equipment - PLS and HLS systems enabling continuous mechanical cardiac or pulmonary support

#### **Important events in 2017:**

- Active participation by department staff in a number of professional events at home and abroad:
  - Annual Congress of the Czech Society of Cardiovascular Surgery;
  - Annual Congress of the Czech Society of Cardiology;
  - Annual Conference of the Working Group – Acute Cardiology of the Czech Society of Cardiology
- Physicians from the department published in foreign peer-reviewed journals and other publications.

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

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

*Senior consultant: Jan Kluh, MD*

*Head nurse: Mgr. Jitka Hovorková*

#### **Basic characteristics:**

The department provides a complete spectrum of examinations and treatment of diseases in the field of ENT. Surgical procedures are performed in all areas, including super-specialised procedures performed in many cases for patients from across the Czech Republic. In 2017, the department performed 2,803 surgical procedures, of which 221 were performed outside the department's operating theatres. The department examined 61,375 patients on an outpatient basis.

Further specialised audiometric examinations were carried out in 2,410 patients and a total of 7,320 procedures performed. Objective audiometry was performed in 252 patients and otoacoustic emissions in 400 patients. Examination of the statokinetic apparatus was performed in 690 cases, ENG examination in 150 patients and examination of vestibular myogenic potential in 62 patients. The department performed 260 examinations for indication of a hearing aid and a total of 53 hearing aids were distributed.

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

- Oncology
- Cophosurgery
- Rhinology
- Endocrine surgery
- Otoneurology
- Correction of hearing disorders – hearing aids
- Laryngeal phonosurgery
- Voice rehabilitation – voice prostheses
- Sleep disorders and snoring-related problems
- Sonography
- Salivary gland disorders
- Swallowing disorders
- Neurosurgery and cranial base disorders

#### **Specialised centres:**

- Centre for laser surgery
- Centre for surgery of the thyroid and parathyroid glands
- Centre for cochlear implants
- Centre for head and neck oncosurgery
- Centre for rehabilitation of patients following total laryngectomy
- Centre for electronic hearing replacements
- Centre for salivary glands diseases
- Centre for treatment of sleep insufficiency
- Centre for swallowing disorders with multidisciplinary cooperation

### New methods and procedures:

- Use of the Montgomery Salivary Bypass Tube after resection and reconstruction in-terventions in oncological surgery of the head and neck;
- Augmentation of the vocal chords using Radiesse;
- Treatment of patients with sleep apnoea using the DISE method (Drug Induced Sleep Endoscopy);
- Treatment of Frey's syndrome with botulinum toxin;
- CODACS –first surgery with this type of cochlear implant in the Czech Republic;
- Endoscopic approaches to the removal of tumours in the internal auditory meatus;
- Peroperative neuromonitoring;
- Fibro-endoscopy of swallowing pathways with functional assessment (FEES);
- Extended microsurgery of tumours of paranasal sinuses and the base of the cranium using navigation;
- Examination of vestibular myogenic potentials /VEMP/ in patients with equilibrium disorders;
- Endoscopic surgery of oesophageal diverticula;
- Endoscopic diagnostics of respiratory tract tumours and tumours of swallowing pathways using NBI;
- Endoscopic examination of the salivary glands and endoscopic treatment of sialolithiasis;
- Rehabilitation of patients following a total laryngectomy with synthetic voice recordings in collaboration with the University of West Bohemia in Pilsen - Department of Cybernetics.

### Unique technological equipment:

- CO2 Laser, Dioxo Laser, Thulium Laser, Argon Plasma Coagulation
- Harmonic scalpel, radiofrequency scalpel, shaver;
- Endoscopic equipment for mini-invasive interventions of the thyroid gland and surgery of the base of the cranium and internal auditory meatus;
- Video stroboscope, ENG Video
- NBI in the early diagnosis of tumours
- Neuronavigation
- Video-endoscopy of salivary glands
- Micro-cutter and laser for stapedius ear surgery

### Important events in 2017:

- 7 – 10 November 2017, Prague – the department organised the 30th International Course on Endoscopic Endonasal Surgery (EES, FES, FESS)
- 9 November 2017, Prague – the department organised the 16th annual ENT Vincentka Forum 2017, which was dedicated to the 125th anniversary of the Czech ENT clinic and 30th anniversary of the first cochlear implant in Czechoslovakia.
- The department co-organised or organised a number of courses for the Institute of Postgraduate Medical Education.
- A significant event in the life of the clinic was a change in the position of the head nurse.
- Prestigious awards

- Prof. Jan Plzák, MD, PhD. elected to the position of Secretary-General of CEORL-Confederation of European Otorhinolaryngology-Head and Neck Surgery;
- Prof. Eduard Zvěřina, MD, DSc., FCMA - Gold commemorative medal awarded by the Czech Medical Association of Jan Evangelist Purkyně;
- Award for best lecture Lazák J., Plzák J., Silent sinus syndrome, 16th Czech - German ENT Days, Ústí nad Labem, lecture;
- 1st prize for best poster Hrubá S., Chovanec M., Čakrt O, Fík Z., Čada Z.: „Ways to effect balance disorders following vestibular schwannoma surgery“ – 18th Student Science Conference, Charles University;
- Best paper award (e-poster): Živicová V. Expression Profiling and Immunohistochemical Analysis of Squamous Cell Carcinoma of the Head and Neck (Tumour, Transition Zone, Normal) by Whole Genome Scale Sequencing, International Conference on Medical Biology and Oncology.

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

Head physician: Prof. Petr Vlček, MD, PhD., MHA

Senior consultant: Kateřina Táborská, MD

Head nurse: Jana Richterová

#### Basic characteristics:

The department is an interdisciplinary workplace of nuclear medicine and endocrinology that aside from standard diagnostics using radioisotope methods, focuses on the diagnostics, treatment, monitoring and management of patients with differentiated carcinoma of the thyroid gland, severe forms of thyroid orbitopathy and 131I-MIBG therapy across the Czech Republic. The department is also an educational centre, accredited in the fields of endocrinology and nuclear medicine.

The department is a centre for treatment with TAO inhibitors of the growth hormone, for the diagnosis and therapy of advanced forms of differentiated thyroid cancer using human recombinant TSH (Thyrogen) and the treatment of neuroendocrine tumours with 131I-MIBG radiopharmaceuticals (the only centre in the Czech Republic).

In 2017, the department examined 20,000 outpatients, of which 1,000 were hospitalised. The nuclear medicine outpatient department performed almost 7,000 procedures and applications of radioactive pharmaceuticals.

#### Specialised outpatient facilities:

- Endocrinology specialising in differentiated thyroid carcinoma (DTC), with over 16,000 patients under care (this is one of the largest groups in the world)
- Counselling for thyroid microcarcinoma
- Counselling for medullary thyroid carcinoma (MTC)
- Counselling for thyroid autoimmune orbitopathy (TAO)
- Nuclear medicine

#### New methods and procedures:

- Diagnostics and treatment of differentiated thyroid carcinoma using human recombinant thyroid stimulating hormone (rhTSH);



- Diagnostics using a hybrid method combining X-ray (CT) and isotopic (SPECT) imaging;
- Introduction of new diagnostic procedures for patients attending check-ups after the administration of a therapeutic dose of thyroid eliminating radioiodine (TGL programme);
- Targeted biological treatment of radioiodine-refractory thyroid carcinomas in cooperation with the Department of Oncology, 2nd Faculty of Medicine, Charles University and MUH;
- Genetic testing of patients with familial forms of medullary thyroid carcinoma and testing patients with papillary thyroid carcinoma;
- Treatment of patients with high-risk neuroblastomas with the help of combined 131I-MIBG and Topotecan with whole-body dosimetry in cooperation with the Department of Paediatric Haematology and Oncology.
- Introduction of the use of alpha emitters in the treatment of patients with castration-resistant prostate carcinoma.

#### Important events in 2017:

- Organisation of the 10th annual congress of Czech and Slovak physicians from nuclear medicine wards in Prague under the auspices of the department's head physician and Czech Nuclear Medicine Society.
- Co-winner of the Minister of Health Award for Research and Development as a collaborative workplace with the Institute of Endocrinology for the Study of Genetic Changes in Thyroid Tumours.

### Centre for Spinal Surgery, 1st Faculty of Medicine, Charles University and Motol University Hospital

Head physician: Prof. Jan Štulík, MD, PhD.

Senior consultant: Jan Kryl, MD

Head nurse: Mgr. Dagmar Šeborová

#### Basic characteristics:

The specialised centre has nationwide competence in the treatment of spinal injuries and diseases, including their consequences in children and adults (acute spinal fractures and treatment of their consequences, primary and secondary tumours, degenerative diseases, inflammatory diseases, congenital and acquired deformities). In 2017, 1,357 patients underwent surgery, 1,551 patients were hospitalised, 14,583 patients received outpatient care and 1,374 patients were treated at the Centre for Conservative Therapy.

#### Specialised outpatient facilities:

- Treatment of spinal injuries and diseases
- Scoliosis in children
- Centre for Conservative Therapy

#### New methods and procedures:

- New en bloc resection technique for sub-axial cervical vertebrae;
- En bloc resection of sacrum;

- En bloc resection of thoracolumbar vertebrae;
- Correction of scoliosis deformities;
- Correction of kyphosis deformities;
- Spinal osteotomy PSO;
- Axial trans-sacral fixation;
- Cultivation of osteoblasts from stem cells.

#### Unique technological equipment:

- Carl Zeiss surgical microscope
- Light source + mobile stand
- EyeMag magnifying system
- EyeMag Smart magnifying glasses
- EyeMag Light II LED lighting
- Endeavour CR for IOM

#### Important events in 2017:

- There was an expansion of the department's bed and theatre capacity. The Centre for Conservative Therapy was established.
- 2nd Professional Conference - Long-term disability - treatment, rehabilitation, compensation, adaptation, 21 – 22 September
- March 2017 AOSpine Advanced symposium, Aging spine: lumbar and cervical degeneration, deformity and fragility fractures - Prague, Czech Republic – Faculty
- XV. Congress of the Czech and Slovak Spinal Surgery Society with international participation, 15– 17 October, Pilsen
- November 2017, Symposium Cervical Spine, Zimmer Biomet, Prague, Czech Republic – Faculty
- November 2017, Cervical spine course, Aesculap Academy, Prague, Czech Republic – Faculty.
- Lectures by Prof. Štulík and other physicians from the department requested both at home and abroad.

### Department of Long-Term Care – Aftercare Centre

Senior consultant: Martina Nováková, MD

Head nurse: Mgr. Lucie Kubová

#### Basic characteristics:

The LTC-Aftercare Centre has a total of 381 beds on 13 wards. It specialises in geriatric issues on one hand, and the care of patients following trauma, surgery, chronic internal diseases, cerebrovascular incidents, etc. without age restrictions on the other. Due to a shortage of intermediate and auxiliary medical staff, one station was temporarily closed in September. The 10th ward has 24 beds and specialises in patients requiring intensive care, respectively care corresponding to an acute inpatient department. The 14th ward, which is located outside the main building, has 29 beds and specialises in the aftercare of patients in the chronic haemodialysis programme.

The LTC-Aftercare Centre specialises in wound healing, nutrition, physiotherapy and ergo-therapy. A clinical psychologist, speech therapist, 14 physiotherapists, 2 ergo-therapists and 4 social workers are available for patients here.



A total of 1,354 patients were admitted in 2017; 275 procedures were performed in the geriatric outpatient facility.

Cooperation with the Volunteer Centre continues, which organises entertainment and educational programmes, memory training or canine therapy for patients. There is also a library for patients within the Aftercare Centre.

The department defended its 1st degree accreditation for teaching geriatrics and is involved in the postgraduate education of physicians in the field of geriatrics, internal medicine and the nursing bachelor's degree programme. The centre also hosts training courses.

#### Important events in 2017:

- Receipt of a grant from the Ministry of Health for the development of a palliative care project in the adult section for 2017 and the launch of a training programme for those interested in palliative care;
- Participation in the organisation of a Certified Course in Wound Healing;
- Launch of the project „Care at Home“ in cooperation with Diaconia;
- May 2017 - Social-Health Conference under the auspices of the MUH Aftercare Centre on Palliative Care called „When the time to go comes, we can handle it together“.

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

Head physician: Prof. Petr Marusič, MD, PhD.

Senior consultant: Aleš Tomek, MD, PhD., FESO

Head nurse: Hana Chvátalová

#### Basic characteristics:

The department provides comprehensive diagnostic and therapeutic care for patients with diseases of the nervous system. The main programmes developed at the highest level in the Czech Republic are cognitive, epileptological, neuro-otological, neuromuscular, neuro-immunological and neurovascular. In addition to care for patients from the catchment area, super-consulting is selectively provided for patients from all over the country. In 2017, the department examined over 40,000 outpatients, a total of 1,944 patients were hospitalised.

#### Highly specialised centres accredited by the Ministry of Health of the Czech Republic

- Highly specialised centre for cerebrovascular care
- Highly specialised centre for pharmaco-resistant epilepsy

#### Specialised centres accredited by professional organisations and Motol University Hospital

- Centre for the diagnostics and treatment of demyelinating diseases
- Cognitive centre
- Neuromuscular centre
- Centre for Parkinson's disease and other extra-pyramidal disorders

- Centre for hereditary ataxia
- Neuro-otological centre

#### Specialised outpatient facilities:

- Counselling for neuroAIDS
- Counselling for headaches
- Counselling for neurocutaneous diseases
- Vertebrogenic and myoskeletal counselling

#### New methods and procedures:

- Advanced EEG assessment in the field of intracranial EEG and high-density scalp EEG is underway in cooperation with the Academy of Sciences of the Czech Republic and the Czech Technical University, as well as the implementation of a protocol for the examination and mapping of cognitive functions from intracranial electrodes.
- The department participated in the international project E-PILEPSY, which has enabled the implementation of a methodology for assessing the sources of EEG signals (Electrical Source Imaging) and post-processing in the field of neuro-imaging (advanced processing of the PET image and its co-registration, 3D Slicer).
- As part of the long-term Czech Brain Ageing Study (CBAS), levels of homocysteine, oxidative stress markers and pathological proteins (TDP-43, phosphorylated tau and beta-amyloid) were analysed in both serum and CSF. Genetic testing was extended by the determination of polymorphism for TOMM 40 in homozygotes for ApoE3/E3 apolipoprotein. Testing for polymorphism of BDNF-met and TDP-43 was newly introduced.
- Continued extension of the sample of patients with limbic encephalitis and the investigation of neutralising antibodies in patients with multiple sclerosis. The group of patients treated with donepezil, for whom a SCF sample was taken, was extended by a group of patients with rivastigmine and memantine.
- There has been a significant increase in DMD-treated patients and their scientific processing, including registries in the field of multiple sclerosis.
- The Cognitive Centre innovated tests for examination of preclinical and prodromal Alzheimer's disease, including a new battery of spatial cognition tests in virtual reality.
- The CSF laboratory implemented new immunoassay methodology for determining the intrathecal synthesis of anti-GAD antibodies in cooperation with the Department of Immunology, 2nd Faculty of Medicine, Charles University and Motol University Hospital. The existing diagnostic panel for autoimmune encephalitis – testing for antibodies against well-characterised onconeural antigens (Hu, Yo, Ri, MA2 (Ta), CV2, (CRMP5), amphiphysin) using the Western blot method with subsequent automated semiquantitative evaluation and testing of antibodies against membrane and synaptic antigens (NMDAR, AMPA1R, AMPA2R, GABABR, casp-2, LGI-1) through indirect immunofluorescence of cells transfected by genes for the relevant antigens was extended by Zic4, Tr (DNER), SOX1, Ma1.
- A unique electrochemical fingerprinting method of body fluids was introduced as part of the laboratory differential diagnostics of neurodegenerative diseases.
- Routine use of video-EEG monitoring and cerebral perfusion using TCD in the ICU
- Extension of the programme of personalised antithrombotic agents in the second-

ary prevention of cerebrovascular disease by measuring the effectiveness of new oral anticoagulants in collaboration with the Laboratory of Molecular Diagnostics of the Hospital Na Homolce and Pharmakl Laboratories

- Endovascular treatment of acute ischemic stroke as a routine medical procedure (in cooperation with the Department of Radiology, 2nd Faculty of Medicine, Charles University and MUH).
- Continuation of the method for the rehabilitation of patients with chronic vertigo and balance disorders, which is unique in the Czech Republic. The method employs visual biofeedback using a force plate and tablet. Our department contributed to the development of this system.
- Creation of programmes for the rehabilitation of strabismus, amblyopia and a functional version of the Hess Screen in cooperation with the Department of Cybernetics, FEE CTU and Department of Ophthalmology, 2nd Faculty of Medicine, Charles University and MUH
- Examination of the otolith system using the cervical myogenic evoked potential method, introduction of the pupillometry method - extension of the testing capabilities of existing equipment for video-oculography (VOG). A new methodology for the examination of vestibulo-ocular reflex functions was introduced with the help of the Otometrics ICS Impulse device. The device is unique because it allows an examination of the function of individual semi-circular channels in order to detect incomplete vestibular lesions.
- Testing thin fibres of peripheral nerves via thermal threshold determination using the Peltier element.
- Introduction of the unique neurophysiological diagnosis of thin nerve fibre disorders (A delta, C fibre) in patients with peripheral and autonomous neuropathy. Introduction of neurophysiological tests (spectral analysis - frequency and time) in cardiac autonomic neuropathy in diabetic patients.
- New methodology for quantitative electromyography in the diagnosis of myopathy (computer processing of the EMG signal - power spectrum analysis, peak ratio, number of small segments). The methodology enhances sensitivity from the original 64% to 91%.

#### Unique technological equipment:

- 256-channel high-density EEG for the epileptological and cognitive programme
- Otometrics ICS Impulse device for examining the function of individual semi-circular channels
- Philips IntelliVue M3150 telemetry with a central monitor for 9 patients
- RIMED Intraview ultrasonographic device with a helmet for long-term monitoring
- Toshiba Aplio 500 ultrasonographic device for the examination of transcranial and extracranial arteries and peripheral nerves with 3D imaging together with MR/CT data
- NicoletOne 128-channel EEG system for videoEEG monitoring
- NYDIK rotating armchair pro electronystagmography– ENG test.
- FAN Study system for complete evaluation of autonomous nervous system function, including testing on an incline plane
- Somedic thermotester, Sweden – electrodiagnostic device for evaluating the function of thin fibres A delta + C fibre.

- Somedic digital algometer, Sweden - electrodiagnostic device for studying deep neuropathic pain
- Experimental laboratory for examination of spatial memory and spatial orientation (Blue Arena) - in cooperation with the Institute of Physiology of the Czech Academy of Sciences

#### Important events in 2017:

- We became part of the European Reference Network (ERN) for epilepsy (EpiCARE), neuromuscular disease (EURO-NMD) and spinocerebellar ataxia
- Co-organisation of the 31st Czech and Slovak Neurological Congress in Brno
- Organisation of the European Stroke Organisation Conference in Prague, senior consultant Tomek was a member of the organisation committee
- Organisation of international training days in neuro-otology and regular annual courses in neuro-otology
- A total of 37 scientific publications in international journals with IF, 11 articles in national journals with IF, 3 articles in peer-reviewed international journals, 4 articles in peer-reviewed Czech journals and 6 chapters in Czech monographies.

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

*Head physician: Prof. Ivan Landor, MD, PhD.*

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

*Head nurse: Mgr. Jana Sládková*

#### Basic characteristics:

The department provides both conservative and surgical care for adult patients in the full spectrum of orthopaedic interventions and traumatology of the locomotor apparatus with the exception of spine and paediatric orthopaedics. The department has a total of 29 beds, of which 14 are in the ICU for aseptic patients, 2 ICU beds for septic orthopaedics, 30 for traumatology and 20 for septic patients.

In 2017, a total of 4,446 patients were hospitalised and 51,607 outpatients were treated. A total of 4,584 surgeries were performed.

#### Specialised outpatient facilities and counselling centres:

- Joint replacement
- Surgery of major joints
- Hand and leg surgery
- Arthroscopy of the shoulder, wrist, knee and ankle joint
- Sports traumatology
- Septic orthopaedics
- Rheumatoid surgery
- Oncology
- General traumatology

#### New methods and procedures:

- Research and development of new joint implants in cooperation with not only domestic, but also international partners;

- New techniques in wrist surgery;
- Implementation of omega splints for a fractured pelvis;
- Introduction of mini-invasive surgical techniques for the treatment of Hallux valgus;
- Arthroscopic stabilisation - AC luxation - dogbone button arthrex;
- Reconstruction of inveterate AC luxation with a tendon graft;
- Introduction of laboratory determination of alpha defensin in the diagnosis of joint replacement infection;
- Introduction of rapid determination of alpha defensin synovasure (lateral flow test) in peroperative diagnosis of joint replacement infection;
- Introduction of a leukocyte esterase test in the diagnosis of joint replacement infection;
- Introduction of bone endoscopy in the treatment of chronic osteomyelitis;
- Introduction of the Masquelette technique in the treatment of infected non-unions;
- Introduction of vacuum therapy in the treatment of infected defective wounds;
- Introduction of own method of coating nails with bone cement in the treatment of infected non-unions.

#### Important events in 2017:

- Zahradníček Award: Popelka S., Sosna A, Vavřík P, Jahoda D., Barták V, Landor I.: Eleven Years of Experience in Ankle Replacement. Acta Chir.orthop. Traum.čech, 83:74-83, 2016, for best publication of the year
- Frejka Award: Fulín, Petr: Do we know what we're implanting? A study of the quality of the UHMWPE components of hip joint replacements. XXV. Frejka Days, Brno, 2017
- The department organised the annual congress of the Czech Society for Orthopaedics and Traumatology with international participation.
- Organisation of regular quarterly surgical courses on the implantation of total shoulder replacements, which take place in the department's operating theatres.

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

Head physician: Libor Fila, MD, PhD.

Senior consultant: Lucie Valentová Bartáková, MD

Head nurse: Mgr. Jana Zelenková

#### Basic characteristics:

The Department of Pneumology is concerned with the diagnostics, treatment and research of lower respiratory tract and lung diseases. Its main programmes focus on pneumo-oncology, lung transplantation, cystic fibrosis, interventional bronchology and intensive care in pneumology.

In 2017, a total of 1,564 patients were hospitalised, outpatient treatment was provided for 13,624 patients, bronchoscopies were performed 1,424 times and chemotherapy was administered in 1,113 cases. A total of 275 patients were hospitalised in the respiratory intensive care unit in 2017, of which 72 patients (26%) were treated by non-invasive me-chanical ventilation and 24 patients (9%) by invasive mechanical ventilation.

#### Specialised outpatient facilities:

- Pneumo-oncology
- Transplantations
- Cystic fibrosis
- Interstitial pulmonary disease
- Difficult to treat asthma
- Patients with breathing disorders during sleep
- Treatment of tobacco addiction

#### New methods and procedures:

- Biological treatment of bronchogenic carcinoma (afatinib, alectinib and osimertinib), cystic fibrosis (lumacaftor/ivacaftor), idiopathic pulmonary fibrosis (nintedanib) and bronchial asthma (mepolizumab);
- Introduction of transbronchial lung cryobiopsy, which is a method that can prevent the need for an open lung biopsy in many cases;
- Radial ebus with the option of a biopsy of peripheral lung lesions

#### Unique technological equipment:

- Bronchoscope with radial EBUS
- Philips V60 non-invasive ventilator

#### Important events in 2017:

- There was a change in the positions of head physician and senior consultant in 2017, so it is our great honour to thank Prof. Marel and senior consultant Petřík for their years of dedicated work for the department.
- In cooperation with the 3rd Department of Surgery, 1st Faculty of Medicine, Charles University and MUH and the Department of Paediatrics, 2nd Faculty of Medicine, Charles University and MUH, a total of 74 patients were included on the waiting list for lung transplantation in 2017 and transplantations were performed for 44 patients.
- Dr. Fila won first place in the competition for best original work in the journal *Studia pneumologica et phthiseologica* for 2016.
- Prof. Marel was voted the best teacher of the 2nd Faculty of Medicine for the fifth consecutive time
- Dr. Lisá won the Doctor of the Year 2016 poll in the category Hospital Doctors, Physicians in Medical Institutions and Doctors on Wards announced by the Union of Patients of the Czech Republic.



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

Head physician: Assoc. Prof. Jana Prausová, MD, PhD., MBA

Senior consultant: Zdeněk Linke, MD

Head nurse: Mgr. Klára Frydrychová

Senior laboratory technician: Alena Čuprová

### Basic characteristics:

The department provides comprehensive care for oncological patients in the field of anti-tumorigenic pharmacotherapy and radiation therapy. It is one of the Complex Oncological Centres in the Czech Republic that provides highly specialised care; the department successfully passed an audit in 2014. At the end of the year, the department was established as one of two National Oncology Centres (NOCs) in the Czech Republic. The department is accredited for specialised education in clinical oncology and radiation oncology.

In 2017, the department treated a total of 213,752 outpatients, 3,045 patients were newly diagnosed (of which 1,810 for chemotherapy/biological therapy/hormone therapy and 1,235 for radiotherapy); a total of 2,108 patients were hospitalised in 2017, despite the fact that the 1st inpatient station became another station for the administration of treatment for outpatients due to staff shortages in April 2017. There were 144,753 irradiated fields, 623 applications in the brachytherapy department and more than 21,350 cycles of chemotherapy were administered.

### Specialised outpatient facilities:

- Monitoring and management of patients following anti-tumorigenic treatment
- Monitoring of patients during chemotherapy
- Monitoring of patients during teletherapy
- Chemotherapy application
- Monitoring of patients during brachytherapy

### New methods and procedures:

- Periodic adjustment of standard protocols for the treatment of malignant tumours with the introduction of new biological therapy molecules, new cytostatic agents, new combinations of cytostatic agents and biological therapy. Significant contribution to the creation of therapeutic results in pharmaceutical registers in the Czech Republic.
- Introduction of central venous access (ports) and peripheral PICC or midline in all patients with the application of parenteral chemotherapy and some patients with biological therapy.
- Cooperation with genetic centres in the search for families with a genetic risk of malignancies, recommended prophylactic treatment and monitoring and management of healthy carriers of risk mutations in terms of oncological diseases.
- Cooperation with the Department of Immunology and the Department of Urology, MUH, in the administration of SNPO1 medication – Centre for the treatment of prostate cancer.
- Improvement and full use of IMRT (intensity modulated radiotherapy), which al-

lows higher doses of radiation to the target area while preserving healthy tissues.

- Implementation of IGRT (image guided radiotherapy), based on checks of the patient's current position in radiotherapy and the possibility of its correction according to the reference position during simulation of the radiation plan. The use of dynamic wedges on linear accelerators allows better 3D (three dimensional) planning. The option of merging images from MRI and CT examinations with CT planning images in order to create a better radiation plan.
- Improvement and full use of fractionated stereotactic radiotherapy.

### Unique technological equipment:

- Two Varian Medical Systems Clinac 2100 C/D linear accelerators (6MV, 18MV photon beams, 6, 9, 12, 20 MeV electron beams) with a Millenium MLC-120 multi-leaf collimator (MLC) and electronic imaging system (EPID – electronic portal imaging device) to check the 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 position during therapy (OBI -on-boarding imaging).
- Varian Medical Systems Clinac 600 C/D linear accelerator (4MV photon beams) with a Millenium MLC-120 multi-leaf collimator (MLC) and electronic imaging system (EPID). This accelerator is equipped with a micro- multi-leaf collimator (m3 micro-MLC) and equipment for stereotactic radiation.
- Varian Medical Systems Acuity EX radiotherapy simulator for the preparation of radiation therapy.
- Philips Brilliance Big Bore CT device for planning therapy.
- Aria Verification System, which links linear accelerators, the simulator, planning systems for external radiotherapy (Eclipse), stereotactic radiation therapy (iPlan) and brachytherapy (Brachyvision).

### Important events in 2017:

- The department's head physician, Assoc. Prof. Prausová, MD, is the President of the Czech Oncological Society of the Czech Medical Association of J. E. Purkyně.
- The department organised a unique educational event for oncologists in cooperation with the Department of Oncology, General University Hospital, Prague 2, namely the 1st year of Best of ASCO in September 2017 in Prague.
- The department participated in organising and lecturing at the 7th PragueOnco colloquium, the Uro-oncologic Symposium and other Czech symposia.
- Physicians actively participated in ASCO, ESMO and ESTRO international events with their abstracts and posters.
- The department is an active member of the EORTC Sarcoma Group and participated in academic clinical studies (e.g. Survival Outcomes in Adolescent and Young Adults with Colorectal and Pancreatic Cancer).
- The department is involved in the Czech Science Foundation (GACR) grant: Nano-fiber systems for local drug release in the treatment of cancer, in cooperation with the Institute of Macromolecular Chemistry of the Academy of Sciences of the Czech Republic.
- The department participates in the 4th EU Health Programme: Joint Action on Rare Cancers.
- Ongoing pilot study of the influence of genetic factors on the effect of treatment



and survival of patients with pancreatic cancer (along with The National Institute of Public Health and the Departments of Surgery of the 1st and 2nd Faculty of Medicine, Charles University and MUH).

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

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

*Senior consultant: Marek Schmidt, MD, FEBU*

*Head nurse: Mgr. Jana Boháčová*

### Basic characteristics:

The Department of Urology provides the full range of therapeutic and preventive care in the field of adult urology in a national and international framework. It specialises in the surgical treatment of cancer of the urogenital tract, including subsequent oncological treatment. It is among the top workplaces in the treatment of lithiasis and laparoscopy. It is the only workplace for sex reassignment surgery in the Czech Republic. In 2017, the department performed 28,717 outpatient examinations, 1,975 hospitalisations and 1,762 surgeries.

### Specialised outpatient facilities:

- Oncology
- Treatment and metaphylaxis of lithiasis and chronic infections
- Andrology
- Dysfunction of the lower urinary tract
- Centre for Research and Treatment of Prostate Cancer (in collaboration with the Department of Radiotherapy-Oncology and Department of Immunology)
- Centre for the surgical treatment of transsexualism

### New methods and procedures:

- Laparoscopic radical cystectomy;
- Laparoscopic radical prostatectomy as standard surgery for prostate cancer;
- Laparoscopic kidney resection due to tumour;
- Improvement of endoscopic treatment of lithiasis – technique of percutaneous mini-nephrolithotomy, percutaneous nephrolithotomy in the supine position, flexible ureteroscopy, etc.;
- Improvement of shunt surgeries after cystectomy;
- Use of new imaging methods for the diagnosis of urinary bladder tumours (NBI = “narrow band imaging”) in everyday practice;
- Percutaneous neurostimulation in the treatment of urgent urinary bladder symptoms;
- Introduction of the surgical implantation of a sacral neuromodulator for the treatment of idiopathic bladder hypoactivity;
- Intradetrusor application of neurotransmitter blockers in the treatment of hyperactive bladder;
- Use of the Ho:YAG laser in surgical interventions;
- Transurethral enucleation of the prostate using the morcellator;

- MRI/ultrasound fusion biopsy of the prostate;
- Implantation of an artificial urinary sphincter in severe incontinence.

### Unique technological equipment:

- Ho:YAG laser
- Instrumentation for NBI (“narrow band imaging”), fluorescence cystoscope
- Instrumentation for miniPNL
- Einstein Vision 3D laparoscopic system
- Piranha endoscopic morcellator
- Toshiba Aplio 500 sonographic device for MRI/ultrasound fusion biopsy of the prostate

### Important events in 2017:

- Workshop – Endourology news with international participation, 13-14 November 2017
- Completion of the reconstruction of operating theatres – there are now 3 available operating theatres equipped with state-of-the-art technology, enabling online streaming of surgical procedures
- Deputy Head of the Department of Urology for Teaching and Science, Štěpán Veselý, MD, PhD., appointed Associate Professor of Urology on 1 June 2017;
- Opening of a teaching laboratory equipped with laparoscopic training devices, projection technology and a simulator of endourological surgical techniques for medical students and urologists in postgraduate programmes.

## Common examination and therapeutic units

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

*Head physician: Prof. Miloslav Roček, MD, PhD., FCIRSE, EBIR*

*Senior consultant: Radek Pádr, MD*

*Senior RA: Mgr. Tomáš Schilla*

### Basic characteristics:

In 2017, a total of 314,242 examinations were performed at the department, of which 241,301 were for adult patients and 72,941 for paediatric patients. This is a 3-4% increase compared to 2016. The number of procedures increased in all modalities including MR and CT workplaces. A total of 218,532 patients were examined at the department in 2017, of which 63,830 patients were hospitalised and 154,702 were treated on an outpatient basis. A total of 2,304,043 exposures were performed.

### Specific features of the department:

The reconstruction of premises for the unique, new Siemens Force CT were completed in 2017.

An internal clinical audit was conducted in the entire department, with an update of local radiological standards. The Department of Radiology was successfully reaccredited, as was the entire Motol University Hospital.

The department continued to monitor its quality indicators, always with a positive result. The situation with intermediate medical personnel is unsatisfactory, with a shortage of, in particular RA. The quality of staff sanitary facilities is satisfactory.

#### Unique technological equipment:

- Magnetic resonance – 4 devices: full range of examinations, including spectroscopy
- CT – 2 devices with 64 rows of detectors, Toshiba Aquilion One CT with 320 rows
- Toshiba Infinix angiography
- Mammography, breast sonography, stereotaxy, vacuum biotom
- Sonography for children and adults, Doppler sonography
- 6x fully digitised skiagraphies, the latest Adora skiagram for traumatology by Canon
- 6x DR Fuji Go mobile x-ray units

#### New methods and procedures:

- CT angiography, 3D VR visualisation, CT cardio, CT coronary angiography;
- CT imaging of VOL data for neuro-navigation, ENT navigation and stomatology;
- MR – new options for the examination of blood vessels, heart function, tractography, T2 relaxometry, examination of uncooperative patients, spectroscopy;
- Prenatal ultrasound and MR diagnostics;
- MAMO SONO centre – ductography, cyst puncture and ultrasound guided core cut biopsy, puncture using the Vacora system;
- Radiofrequency ablation and chemo-embolization of metastases in the liver and lungs;
- Implantation of aortal stent-grafts (also fenestrated), cerebral thrombectomy, subintimal recanalization of peripheral arteries, treatment of acute and chronic deep vein thrombosis, treatment of vascular accesses for haemodialysis;
- Treatment of cerebral malformations in both children and adults;
- Interventions in the biliary tract, spondylo and vertebroplasty;
- Interventions under CT sciascopy;
- Toshiba Aplio ultrasound equipment with software enabling diagnostics with the help of contrasting agents, especially for dynamic diagnosis of focal lesions mainly in the liver; the liver is also examined by elastography;
- Extended use of dictation systems;
- The department holds conferences and consultations with other departments within the Czech Republic and abroad using the Polycom system.
- Implementation of a conference system enabling surgeries to be viewed;
- Establishment of Arterial spin labelling as a recent method for the visualisation of ce-rebral perfusion;
- Toshiba APLI 500 software. Super Microvascular Imaging (SMI) allows accurate detection of microvascular tissue structure,
- Introduction of catheter treatment of retinoblastoma as the first workplace in the Czech Republic.

#### Important events in 2017:

- The department organised an international school of radiology – 6th Prague European Tutorial of Radiology, which ran for two weeks.

- 5th Motol Day of Paediatric Radiology with major multidisciplinary participation.
- Organisation of an open day for children and parents in the paediatric section of the Department of Radiology on 12 November as part of International Radiology Day.

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

*Head physician: Prof. Milan Macek, MD, DSc., MHA*

*Senior consultant: Markéta Havlovicová, MD*

*Head nurse: Mgr. Hana Strouhalová*

#### Basic characteristics:

The department (DBMG) provides a wide range of preventive and diagnostic medical care in the field of medical and molecular genetics. It determines the diagnosis of selected congenital developmental disorders, hereditary tumours, neurodegenerative diseases in children and adults, rare diseases, including both prenatal and postnatal mental development disorders. In 2017, the department's outpatient facilities provided consultations for 10,256 patients /5,620 families. DBMG laboratories performed a total of 5,743 tests/analyses, of which 400 were prenatal.

The National Coordinating Centre for Rare Diseases and Centre for the Diagnostics and Treatment of Paediatric and Adult Patients with Cystic Fibrosis was established under the DBMG, and the department is also part of the national research centre – “National Centre for Medical Genomics” The department undertakes projects in the field of biomedical research, participates in the undergraduate, postgraduate and specialist education of physicians and healthcare professionals.

#### Specialised outpatient facilities:

- Prenatal genetic counselling
- Neurogenetic counselling
- Oncogenetic counselling
- Genetic counselling for sensory disorders and non-syndrome deafness
- Cardiogenetic counselling
- Genetic counselling dealing with dysmorphology
- Genetic counselling for couples with reproductive disorders
- Genetic consulting for patients with mental insufficiency and autistic spectrum disorders
- Genetic counselling for thrombophilia conditions
- Genetic counselling for gastroenterology and hereditary pancreatitis
- Genetic counselling for cystic fibrosis /CF screening of new-borns in cooperation with the Centre for Cystic Fibrosis, MUH

#### New methods and procedures:

- Continued extension of the diagnostics of new microdeletion syndromes using the FISH and aCGH method. Diagnostics without the need for the direct cultivation of amniotic/chorionic cells is also being extended.
- The department continues to improve the accuracy of the diagnostics of sub-microscopic aberrations by aCGH analysis with the help of different types of oligo-

nucleotide chips (e.g. Illumina, Agilent), including the most accurate commercially available chips for aCGH - oligo 4x180K with loci for testing the loss of heterozygosity, important e.g. for hereditary tumour syndromes. The department has managed to reduce the test time in optimal cases to two days after the collection of material. An algorithm for cases where this method cannot reliably distinguish between benign and pathologic findings was also developed.

- The aCGH method has also been available for prenatal diagnosis since 2013, not only from cultivated, but also from native (i.e. freshly collected) prenatal material.
- Analysis of induced chromosomal breaks for extramural workplaces.
- Accreditation granted for all cytogenetic and molecular cytogenetic methods by the Czech Accreditation Institute – ČIA 15189 and regular international EQA are conducted.
- DNA diagnostics extended by the Sanger method of DNA sequencing or fragmentation analysis of more than 120 genes responsible for genetically determined syndromes with mental retardation/autistic spectrum disorders, ataxia, dystonia, muscular dystrophy, myopathy, growth disorders, osteochondrodysplasia, craniosynostosis, sex development disorders, syndromes with tumour predisposition, organ and sensory defects, thrombophilia, rare diseases and genetic syndromes.
- Testing for imprinting disorders in PWS/AS and BWS/RSS syndromes.
- Gene deletions/duplications or microdeletion syndromes are examined using the MLPA method.
- Diagnostics of hereditary breast and ovarian carcinoma syndrome, Lynch syndrome, neurofibromatosis, RASopathies, and Duchenne muscular dystrophy by NGS methods was introduced into diagnostic practice. In 2017, a total of 105 patients with suspected hereditary breast and ovarian carcinoma, 201 patients with neurofibromatosis and/or RASopathy and a total of 87 HNPCC patients were examined using these methods. We have diagnosed dozens of rare genetic diseases with the help of exome NGS sequencing. Clinical use of NGS in neurogenetics, cardiogenetics and dysmorphology was initiated, and newly in the field of hearing impairment.
- We have successfully met the requirements of external international interlaboratory quality control for molecular genetics laboratories for 14 different diagnoses, Sanger DNA sequencing and NGS.
- New approaches for a more accurate interpretation of a priori mutations of unknown significance were introduced.
- We conduct new-born screening for cystic fibrosis for the Bohemian region in collaboration with the Vinohrady University Hospital and General University Hospital in Prague (approx. 50,000 new-borns).
- We offer a method of cryopreservation of ovarian tissue for oncological patients prior to treatment in collaboration with the Department of Obstetrics and Gynaecology.
- Use of 3D scanning of patients' faces for digital phenotyping.

#### Unique technological equipment:

- Agilent Technologies special platform for aCGH analysis
- Peltier PTC 100 thermocycler
- Hanabi - device for the preparation of uniformly distributed metaphases for molecular cytogenetics

- Maylor-Wharton Cryogenics, model K10 with a capacity of 10,000 doses
- Faster, SafetyFast Classic laminar box, class II biohazard
- MagCore Nucleic Acid Extractor for DNA/RNA isolation
- Illumina HiSeq 2500, Illumina MiSeq and Illumina MiniSeq for NGS
- CBOT, Covaris S200, Agilent Bravo pipettor for NGS
- External temperature and CO2 concentration analyser enabling unification of cultivation conditions in all incubators (InControl 1050)
- Thermo Scientific Cryptor Compact Plus for biochemical screening in pregnant women

#### Important events in 2017:

- As the coordinator of the National Coordination Centre for Rare Diseases, Prof. Milan Macek, MD, the head of the department, continues to manage and guarantee the incorporation of a number of MUH departments in European Reference Networks (ERN) for rare diseases
- The Gen-Equip project, in which the department is participating, received the prestigious European Health Award for 2017 at the European Health Forum Gastein (EHFG).
- Permanent cooperation with the Czech Association for Rare Diseases with the aim of raising awareness of rare diseases - related articles in the regular newsletter of the Czech Association for Rare Diseases, press releases, etc.

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

*Head physician: Prof. Richard Průša, MD, PhD., EuSpLM*

*Senior consultant: Jana Čepová, MD, PhD., MBA*

*Senior laboratory technician: Mgr. Martina Bunešová, MBA*

#### Basic characteristics:

The department's laboratory provides over 220 different laboratory tests. The daily average is around 2,030 biological samples, i.e. 614,110 tests per month in 24-hour, three shift operations. A number of tests (MTX, cyclosporine A, tacrolimus, sirolimus, lead, platinum, antimycotics, busulfan, IGF-1, etc.) are also performed for other healthcare institutions. The total number of procedures in 2017 reached 7,369,299, which is a 5% increase compared to 2016. Other sections of the department include specialised outpatient facilities focusing on hyperlipoproteinemia, metabolic bone disorders, nutrition disorders in terms of obesity and malnutrition. In 2017, a total of 4,000 patients were treated on an outpatient basis.

#### Specialised outpatient facilities:

- Treatment of hyperlipoproteinemia
- Bone metabolism
- Nutrition issues

#### New methods and procedures:

- 2015 - Introduction of eGFR (estimated glomerular filtration rate) calculation according to the CKD-EPI formula



- 2015 - Introduction of eAG (estimated average glucose) calculation
- 2015 - Transfer of MTX from TDx / FLx to Integra 400
- 2015 - Installation of Versa Cell feeder for Advia 1800 automatic analysers– 2x
- 2015 - Examination of haemoglobin in faeces via sensitive quantitative immuno-chemical determination
- 2015 - Examination of 1,25-dihydroxyvitamin D (calcitriol) in serum using a chemiluminescent immunoassay
- 2015 - A new, highly sensitive method for the determination of estradiol
- 2015 - Abolition of TPA testing and replacement with CYFRA 21-1
- 2015 - A new, highly sensitive method for the determination of troponin (hs-cTnI)
- 2016 – A new method for the determination of glycated haemoglobin on the principle of capillary electrophoresis
- 2016 – Transfer of SHBG determination to the Siemens Centaur XPT automated immunoassay analyser with automatic calculation of the free androgen index (FAI)
- 2016 - Re-standardisation of testosterone, folate, HBeAg methods
- 2016 - New determination of thyroglobulin in punctures for the Department of Nuclear Medicine
- 2017 - New immunoturbidimetric method for determining myoglobin
- 2017 - New immunoradiometric method for determining IGFBP-3
- 2017 - Use of Siemens reagents (formerly Roche) to measure myoglobin in serum
- 2017 - Introduction of electronic requests in practice

#### Unique technological equipment:

- 2015 - Advia 1800 automated analyser - 2x
- 2015 - OC Sensor IC analyser for quantitative determination of haemoglobin in faeces
- 2015 - Hydrasys semi-automatic analyser for electrophoresis
- 2015 - A2O Advance osmometer
- 2015 - SP pHox Ultra 3x
- 2015 - AQT90 FLEX immunochemical analyser for the Emergency Department
- 2015 – Installation of 67 professional hospital portable StatStrip glucose meters with full connectivity
- 2016 - 2x new Centaur XPT immunochemical analysers
- 2016 - Cobas 6000 immunochemical analyser – two e601 modules
- 2016 - Architech i4000SR immunochemical analyser
- 2016 - Advanced A2O automatic osmometer by Advanced Instruments
- 2016 - Osmostation 6060 osmometer
- 2016 - Vitros 4600 biochemical analyser
- 2016 - Mass spectrophotometer

#### Important events in 2017:

- The Menhir of Professor Masopust, 26 January 2017, a scientific conference (over 100 participants from across the Czech Republic).
- Number of publications in total: 14, of which with IF: 7

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

*Head physician: Prof. Jiřina Bartůňková, MD, DSc., MBA*

*Senior consultant: Prof. Anna Šedivá, MD, DSc.*

*Senior laboratory technician: Bc. Anna Skalická*

#### Basic characteristics:

The department provides comprehensive care for both paediatric and adult patients with immunopathological conditions, including clinical and laboratory examinations, monitoring and management. Besides outpatient examinations and treatment in the entire field of allergology and clinical immunology, the Department of Immunology also provides regular therapy and IV administration of indicated pharmaceuticals in case of serious immune disorders for both paediatric and adult patients. The Vaccine Centre and CSF laboratory have been part of the Department of Immunology since 2012. The department is a base for undergraduate and postgraduate education in immunology and also conducts research in the same field.

In 2017, the department's outpatient facilities examined 15,471 patients, with 213,946 tests performed by laboratories for 336,240 patients, and another 19,750 tests in the CSF laboratory.

#### Specialised outpatient facilities:

- Immunodeficiencies
- Allergies, autoinflammatory and autoimmune diseases
- Centre for the treatment of immunopathological conditions in children and adults
- Specialised outpatient department for the administration of antitumorigenic vaccines as part of clinical studies
- Vaccination Centre

#### Specialised centres:

- Centre for the treatment of hard-to-treat asthma (Omalizumab, monoclonal antibody against IgE)
- Centre for the treatment of hereditary angioedema (C1inhibitor substitution, bradykinin inhibitor)
- Centre for the diagnosis and treatment of immunopathological conditions of the Department of Immunology, 2nd Faculty of Medicine, Charles University and Motol University Hospital

#### Specialised laboratory:

- CSF laboratory (in clinical cooperation with the Department of Neurology)

#### New methods and procedures:

- Extension of diagnostic methods for severe immune disorders, mainly in cellular immunity test methods;
- Functional testing of innate and acquired immunity parameters
- Intracellular examination of pro-inflammatory cytokines IL-1, IL-6, TNF



- Extension of cellular immunity panel (Ki-67 proliferation assay, Th17 lymphocyte assay)
- Expansion of centre for the supervision of subcutaneous immunoglobulin home applications
- Clinical studies of immunoglobulin preparations
- Clinical studies of modern targeted treatment of immunopathological conditions

#### Unique technological equipment:

- Fully equipped laboratory for flow cytometry, including sorter
- Microscopic workplace, including confocal microscope and scanning cytometer

#### Important events in 2017:

- Continued individual application of the unregistered product DCVAC under hospital exemption for modern therapeutic medications pursuant to §49b) and §49c) of the Act on Pharmaceuticals;
- Management of the Immunodeficiency Centre as part of the global network of Jeffrey Modell Foundation centres (USA);
- Organisation of the international ESID (European Society for Immunodeficiencies) Eastern Spring School in Primary Immunodeficiencies, April 2017;
- Continuation of the FOCIS Centre of Excellence (Federation of Clinical Immunology Societies, USA, EU);
- Solution of Motol University Hospital institutional support projects; solution of grants from the Agency for Healthcare Research of the Czech Republic
- Solution of the project “T cell therapy for prostate cancer” and “Longitudinal monitoring of immune parameters in patients with I. type diabetes” in the Modern Therapy scheme;
- Clinical study of the rare disease Activated Kinase Syndrome with the specific inhibitor CCDZ173X2201;
- A total of 20 international publication with IF, 10 publications in the Czech language, 7 chapters in books;

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

*Head physician: Assoc. Prof. Pavel Dřevínek, MD, PhD.*

*Senior consultant: Otakar Nyč, MD, PhD.*

*Senior laboratory technician: Bc. Vilma Klemensová*

#### Basic characteristics:

The department carries out laboratory diagnostics of bacterial, viral, fungal and parasitic infections. It also provides consulting services in ATB therapy, differential diagnosis of infections and infectious complications. It collaborates in monitoring the incidence of nosocomial infections and monitors the incidence of abnormal ATB resistance profiles. The department participates in the activities of the Independent Quality Control Department in the form of preparation, implementation and evaluation of prescription audits focusing on the rational use of antibiotics in the hospital. It is connected to the European system of surveillance of antibiotic resistance and European studies for monitoring the incidence of infections caused by *Clostridium difficile*. Through representatives in the Central Coor-

inating Group of the National Antibiotic Programme, the Subcommittee for Antibiotic Policy of the Czech Medical Association of J. E. Purkyně and the board of the Society for Medical Microbiology of the Czech Medical Association of J. E. Purkyně, the department is actively involved in the implementation of antibiotic policies in the Czech Republic. The department is collaborating on the national projects CELL and FUNGISKOPE, focused on the issue of invasive fungal infections. Particular emphasis is placed on evaluating the latest diagnostic methods and their implementation into clinical practice with the aim of further improvement of microbiological diagnostics.

In 2017, the department reported a total of 108,458,845 points.

#### New methods and procedures:

- Diagnostics (i) based on PCR: panel of 16 respiratory viruses, panel of originators of atypical pneumonia, panel of 7 originators of STD, pan-fungal PCR, detection of mucormycetes, candida, aspergillus, pan-bacterial PCR, evidence of pertussis, originators of gastroenteritis, including enterohaemorrhagic *E. coli*, panel of originators of community-acquired purulent meningitis, evidence of *Mycobacterium tuberculosis* (ii) using immunochromatography: astroviruses;
- Detection of virulence factors and resistance genes: (i) via PCR: MRSA and PVL in *S. aureus*, (ii) MALDI-TOF: carbapenemase;
- Molecular typing: *C. difficile* (for the needs of the Czech Republic, including national surveillance), *P. aeruginosa* and *B. cepacia* complex (chronic infections in patients with cystic fibrosis)
- Evidence of neutralising antibodies against beta-interferon type pharmaceuticals for RS centres in the Czech Republic;
- Cooperation with the Department of Internal Medicine, Motol University Hospital in the preparation of faecal transplants in patients with recurrent colitis caused by *C. difficile*.

#### Unique technological equipment:

- Qiacube insulator of nucleic acids for PCR diagnostics
- JOUAN and BENTLEY anaerobic boxes
- MALDI-TOF mass spectrometry device for quick and highly reliable identification of bacteria and fungi.
- PCR cyler with high resolution melting analysis
- GeneXpert and Easy-Plex 384, automated systems for rapid and highly reliable PCR detection of a wide range of viral and bacterial pathogens, including *Mycobacterium tuberculosis*
- System for the extraction of bacterial and fungal DNA (NA Select)
- BD MAX fully automated system for molecular diagnosis of a broad spectrum of infectious originators

#### Important events in 2017:

- Active participation in international conferences: ECCMID Vienna; 6th International congenital CMV conference/16th International CMV/Betaherpesvirus Workshop, 20th Annual Meeting of the European Society of Clinical Virology 2017, 10th International Conference on Human Herpesvirus 6 and 7,

- Participation in professional seminars organised by the Society for Medical Microbiology
- Participation in the preparation and organisation: 3rd interdisciplinary conference „Clostridia Day“ in Prague, interdisciplinary seminar Třeboň 2017, specialised courses in the field of medical microbiology, 20th National Virology Conference in Hradec Králové.
- Publication activity: 18 international publications with impact factor, 1 national publication with impact factor, 8 articles in Czech peer-reviewed journals.
- Prof. Pavel Dřevínek, MD, PhD, head of the European project, “Standards of Care” of the European Society for Cystic Fibrosis.
- Mgr. Marcela Krůtová, PhD, member of the European ESCMID Study Group for Clostridium difficile – ESGCD

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

Head physician: Prof. Roman Kodet, MD, PhD.

Senior consultant: Daniela Kodetová, MD

Senior laboratory technician: Vladimíra Kratinová

### Basic characteristics:

The department is concerned with the diagnostics of various types of diseases. It uses classic histology and cytology methods in combination with other special laboratory methods. In 2017, the department examined 25,840 patients, which was 422,546 histological and cytological slides. The molecular pathology laboratory conducted a total of 23,927 tests for 2,439 patients using flow cytometry, PCR, FISH and predictive IHC. The department is both an undergraduate and postgraduate teaching workplace. The department's autopsy section has an educational and supervisory role within the framework of the hospital.

### Specialised laboratories:

- Electron microscope
- Immunohistochemistry
- Diagnosis of neuromuscular diseases
- Flow cytometry
- In situ hybridisation
- DNA and RNA analysis
- Cytology
- Biopsy
- Necropsy
- Pulmonary cytology

### New methods and procedures:

- During the year, we continuously implemented new immunohistochemical methods for the diagnosis of tumours, e.g. GATA3 for mammary gland carcinoma, SOX10 for the diagnosis of melanoma and NKX2.2 for the diagnosis of Ewing's sarcoma
- Implementation of new colouring techniques in the biopsy laboratory for evidence of bilirubin;

- Implementation of next generation sequencing (NGS) methodology on paraffin tissues for ovarian carcinoma.
- New colouring methods in pulmonary cytology, which have significantly shortened the analysis process
- Implementation of „fluid biopsy“ methodology and detection of circulating tumour DNA (c+DNA)

### Unique technological equipment:

- Cyclers for real-time PCR
- MiSeq device for “Next Generation Sequencing” methodology
- Eight-capillary genetic analyser
- New automated colouring and mounting device for processing histological slides
- New automated deep-freeze device for slicing peroperative biopsies
- Idylla Biocartis device allowing the detection of specific gene changes. This is used in predictive diagnostics of patients with colorectal ca, melanoma, Langerhans cell histiocytosis and brain tumours.

### Important events in 2017:

- The Czech Ministry of Health institutional support for science project continued at a high level in 2017, the total IF for 2017 was 71.913.

## Department of Clinical Haematology

Senior consultant: Jitka Segethová, MD

Senior laboratory technician: Blanka Hájková

### Basic characteristics

The department provides enhanced haemato-oncological care according to the criteria of the Czech Society of Haematology of the Czech Medical Association of J. E. Purkyně. The department is divided into two parts, the laboratory and clinical section. The laboratory performs routine and special haematologic tests for Motol University Hospital with supra-regional competence. In 2017, the laboratory conducted 808,000 procedures. The laboratory is the reference lab for the diagnostics of acute leukaemia and myeloproliferative conditions in children. In adult haematology, attention is focused on the morphological diagnosis of myelodysplastic syndrome.

The clinical section of the department includes an outpatient facility for the paediatric and adult sections. A total of 29,000 procedures were performed in the outpatient facility in 2017. Part of the adult outpatient facility are application rooms for the administration of blood preparations and chemotherapy.

### New methods and procedures:

- Procedures for the functional analysis of platelets
- Introduction of methodology for the evaluation of new antithrombotic pharmaceuticals
- Introduction of methodology for the analysis of fibrin monomers
- The department's morphological laboratory participates in international studies on the treatment of paediatric acute leukaemia

- The department is actively involved in the activities of the Czech MDS Group.
- The department's physicians actively participate in the activities of the Czech Myeloma Group, including entries in the CMG register of monoclonal gammopathies.
- A clinical study by Boehringer Ingelheim - No. 2013-002114-12, No. 2014-000583-18 with dabigatran is underway at the department.

#### Unique technological equipment:

- SYSMEX XN 3000 - automatic line for testing CBC, including digital morphology
- Coagulometer (ACL) for routine and special coagulation tests.
- STA-R Evolution – analyser for examination of fibrin monomers.
- Device for platelet function analysis (Innovance PFA 200)

#### Important events in 2017

Award of the NACCL (National Authorisation Centre for Clinical Laboratories) Registration Certificate - Clinical Laboratory Register – October 2017

#### Department of Clinical Psychology, Motol University Hospital

*Head of the department: Mgr. Zuzana Kocábová*

#### Basic characteristics:

The department employs 30 clinical psychologists (full-time and part-time), who work in the paediatric and adult section and provide preventive, diagnostic, psychotherapeutic and rehabilitation care for inpatients and outpatients and their families. In 2017, the department treated 4,036 patients and conducted 6,782 examinations.

The department is accredited by the Czech Ministry of Health and provides theoretic-practical, as well as the practical part of pre-attestation preparations in the field of Clinical Psychology and Paediatric Clinical Psychology and has an accredited training programme in „Paediatric Clinical Neuropsychology,“ which will take place in cooperation with the Department of Paediatric Psychiatry and Department of Paediatric Neurology.

#### New methods and procedures:

- Completion of the international project aimed at the development of competencies in children with cystic fibrosis associated with practical outcomes;
- The neuropsychology team has successfully continued to develop the diagnostics of neurodegenerative disorders and examination of patients in the epileptosurgical programme;
- Continuing investigation of the developmental level of premature infants within the Centre of Complex Care;
- Psychologists continued to develop psychological diagnostics for paediatric patients with autistic spectrum disorders as part of psychiatric care;
- Launch of a psychological care programme for patients with diabetes in cooperation with the Department of Internal Medicine;
- Deepening cooperation with Zdravotní klaun o.p.s (Hospital Clowns) and launch of new projects aimed at supporting adaptation by children with severe chronic illnesses;
- Launch of a research project in collaboration with Hospital Clowns designed to

verify the effectiveness of the NOS (To the Operating Theatre) programme aimed at managing children's anxiety before surgery.

#### Important events in 2017:

- Department staff were involved in international research projects and actively participated in lectures for the professional and non-professional public. They published articles in important scientific journals and have actively participated in international and Czech conferences.

#### Blood Bank Department

*Senior consultant: Eva Linhartová, MD*

*Senior laboratory technician: Mgr. Martin Matějček*

#### Basic characteristics:

The Blood Bank Department is one of the CITD at Motol University Hospital. It is responsible for purchasing, storing and expediting all types of blood transfusion preparations for MUH patients. In 2017, a total of 29,283 T.U. of all types of blood preparations were dispatched, of which 18,850 T.U. were erythrocytic preparations, 7,753 T.U. plasma, 2,668 T.U. platelet preparations and 12 T.U. granulocytic TP. There was a slight decrease in the consumption of all types of blood preparations compared to 2016.

The Blood Bank Department carries out basic and specialised immunohematology examinations according to the requirements of medical workplaces, prenatal examinations for pregnancy counselling at the Department of Obstetrics and Gynaecology and procures blood preparations for intrauterine and replacement transfusions where necessary. In 2017, 9,492 blood group tests, 19,664 antibody screenings and 39,925 compatibility tests were carried out as part of basic pretransfusion examinations. The number of specialised immunohematology examinations remained unchanged compared to 2016 at 1,581. There were no major changes in prenatal examinations. The number of irradiations of blood preparations was almost the same as in 2016 – 8,388 irradiations.

In the field of autologous donations, the collection of autologous whole blood was mainly for orthopaedic patients at MUH and the Department of Urology, 2nd Faculty of Medicine Charles University and MUH, but also for patients at the Hospital Na Homolce. In 2017, a total of 306 autologous donations and 25 leukapheresis were carried out.

The department is a teaching workplace within the 2nd Faculty of Medicine, including undergraduate and postgraduate education in the field of transfusion medicine for physicians and support staff.

#### Specific features of the department:

- Laboratory section
- Apheresis and autologous donations
- Irradiator for the irradiation of blood preparations

#### New methods and procedures:

- Separation of peripheral stem cells (PBPC) implemented into routine practice.



### Unique technological equipment:

- Erytra automatic immunohematology analyser

### Important events in 2017:

- Separation of autologous peripheral stem cells (PBPC) for paediatric patients in the Department of Paediatric Haematology and Oncology, 2nd Faculty of Medicine, Charles University and Motol University Hospital.

## Department of Rheumatology, Motol University Hospital

Senior consultant: Rudolf Horváth, MD, PhD.

Head nurse: Indira Jankovičová

### Basic characteristics:

The Department of Rheumatology provides complex diagnostics, treatment, monitoring and management of paediatric and adult patients with inflammatory rheumatic diseases with a focus on juvenile idiopathic arthritis, rheumatoid arthritis, ankylosing spondylitis and other forms of spondyloarthritis, together with psoriatic arthritis, systemic connective tissue diseases and primary vasculitis. Patient care naturally also involves other cooperating fields and their laboratory counterparts. The department is actively involved in consulting activities within the MUH and also provides consulting for other Prague hospitals and workplaces outside Prague. In 2017, a total of 5,242 samples were collected, 3,809 outpatients were examined, 2,552 minimal contacts, 332 telephone consultations, 619 specialised ultrasound examinations were performed and a total of 206 professional consultations were conducted in MUH wards.

### Specialised outpatient facilities:

- Adult rheumatology
- Paediatric rheumatology
- Musculoskeletal ultrasonography
- Centre for biological treatment of rheumatoid symptoms in children and adults

### New methods and procedures:

- The portfolio of biological medications was extended by IL-17 blockers for indications of ankylosing spondylitis and psoriatic arthritis. We also recently introduced the use of JAK inhibitors in the treatment of RA.
- Introduction of “bedside” diagnostics and dynamic monitoring of the activity of inflammatory rheumatic diseases using musculoskeletal ultrasonography.
- Ultrasound examination of cartilage damage in inflammatory and non-inflammatory rheumatic diseases was introduced as part of institutional support projects at Motol University Hospital.
- We newly perform ultrasound-guided punctures of joints and soft tissues of the musculoskeletal system.

### Unique technological equipment:

- Two ultrasonic devices (Esaote Mylab Class C, Esaote Mylab Seven) equipped with high-frequency probes

- Capillaroscope for investigation of pathology in patients with SSc, SLE, MCTD and systemic autoimmune diseases

### Important events in 2017:

- The department’s staff regularly contribute lectures at national congresses organised by the Czech Rheumatology Society of the Czech Medical Association of J. E. Purkyně and international EULAR and ACR congresses
- The department actively participates in the presentation of results to the ATTRA registry in the Czech Republic and at EULAR and ACR international congresses.
- Successful continuation of work on the internal institutional support grant entitled „The use of musculoskeletal ultrasonography in the detection of damaged cartilage in patients with rheumatoid arthritis and osteoarthritis“.

## Central Operating Theatres - Paediatric Section, Motol University Hospital

Head nurse: Bc. Alice Podařilová

Senior physician: Assoc. Prof. Vladimír Mixa, MD, PhD., KARIM.

### Basic characteristics:

The Department of Central Operating Theatres for Children concentrates all surgical procedures in all surgical and non-surgical disciplines from the hospital’s paediatric departments, with the exception of cardiac surgeries. The department also provides undergraduate and postgraduate education for medical and non-medical personnel.

A total of 7,670 surgeries were performed in 2017.

### New methods and procedures introduced in the last 3 years:

- Continuing expansion of endoscopic, laser and plasma techniques
- Wider use of navigation in neurosurgery
- Pilot video streaming of the image from the operating microscope to the office of the head physician and neurosurgery internship room
- Pilot audio and video streaming of laparoscopic surgeries to the paediatric surgery internship room
- Implementation of PICC (peripheral intravenous central catheter)

### Unique technological equipment:

- LSV 980 diode neolaser
- Modernisation of equipment for operating tables - mechanism for head support in neurosurgery and suspension mechanism to anchor the arm during shoulder arthroscopy
- Stelaris optical system for cataracts and anterior/ posterior segment
- Biom optical system, add-on to the microscope used in posterior segment surgeries
- Modernisation of anaesthesia technology with the introduction of top quality AVANCE devices



## Central Operating Theatres - Adult Section, Motol University Hospital

Head nurse: Mgr. Vladana Roušalová

Senior physician: Petr Příklad, MD, Dept. of Anaesthesiology and ICM

### Basic characteristics:

The department provides operating facilities for 9 out of 11 surgical departments in the adult section of Motol University Hospital; it has 21 operating theatres and participates in surgeries in 6 other theatres.

It therefore secures approximately two thirds of all surgeries in the adult section, which was 16,963 surgeries in 2017.

### Unique technological equipment:

- The department received new equipment, which included the installation of an electronic system for checking equipment, networks and containers via unique QR codes.
- The COS-A3 theatre, which is used by the 3rd Department of Surgery, especially for thoracic surgery including pulmonary transplantation, underwent modernisation of the monitoring system. The new system allows the image from the camera on the operating light of the laparoscopic tower to be displayed in two places in the theatre, with PACS and vital functions.

## Department of Transplantation and Tissue Bank, Motol University Hospital

Senior consultant: Jan Burkert, MD, PhD.

### Basic characteristics:

The Department of Transplantation and Tissue Bank, as the only workplace in the Czech Republic, ensures both the procurement and transplantation of organs (TC) and the procurement and transplantation of tissues.

### Specific features of the department:

The Department of Transplantation and Tissue Bank - TC meets the organisational prerequisites so that individual workplaces at MUH can collect organs and tissues and perform kidney transplants in children, heart transplants in children and lung transplants in children and adults.

The department runs a specialised tissue bank (STB 85) with nationwide operation.

In 2017, 12 multi-organ collections from cadaverous donors were realised.

A total of 8 kidney transplants in children (7 from cadaverous + 1 from a living donor) were performed. There were 44 lung transplants (of which 93% were bilateral, 70% on ECMO!) and three heart transplants in children.

The cardiovascular tissue bank received 91 hearts and released 114 grafts for the transplantation of heart valves and conduits.

### Important events in 2017:

- The transplantation team led by Prof. Lischke once again managed to increase the number of lung transplants to 44. The average being more than 4/1 mil. inhabitants, which ranks us among the world's most developed countries.

## Outpatient Section

### Emergency Department for Children, Motol University Hospital

Senior consultant: Jitka Dissou, MD

Head nurse: Mgr. Monika Vilímová, Dis.

### Basic characteristics:

The Emergency Department for Children, MUH is considered the gateway to the children's university hospital for all acute paediatric patients, whether brought by ambulance or their parents. It consists of two parts, the Emergency Department (Children's Emergency Admissions), where patients are mainly brought by emergency medical services, and the Emergency Unit (Children's Admissions), which works as an acute paediatric outpatient department during the day and an emergency ward at night and on weekends. During emergency hours, the department also has specialised acute outpatient facilities - surgery, ENT, orthopaedics, dental surgery, neurology and ophthalmology. The department is the only independent paediatric emergency unit in the Czech Republic. The department is equipped with, among other things, 3 examination beds, 1 heated baby bed, an isolation box and 4 observation beds, where children are monitored for up to 8 hours. All beds are monitored.

The Emergency Department for Children provides comprehensive basic examinations and treatment of acute conditions in children from birth to the age of 17 years + 364 days.

The department's physicians take part in postgraduate teaching in the field of emergency medicine. In 2017, they collaborated on Dr. Vladimír Mixa's book „Pre-Hospital Conditions in Childhood“.

In 2017, a total of 29,442 patients were treated at the Emergency Department for Children, MUH, of which 5,452 were treated in the Emergency Unit.

## Department of Dermatovenerology, Motol University Hospital

Senior consultant: Alena Machovcová, MD, PhD., MBA

Head nurse: Mgr. Helena Janoušková

### Basic characteristics:

This is an outpatient department with no connection to any ward of Motol University Hospital. The department provides basic and specialised care in the field of dermatology and venerology focusing on dermato-allergology and job-related skin diseases, prevention and treatment of skin cancer and the treatment of psoriasis. In 2017, a total of 8,006 patients were treated on an outpatient basis, undergoing almost 22,117 treatments.

### Specialised outpatient facilities:

- Venerology

- Pigmentary nevi and skin cancer
- Dermato-allergology and job-related dermatoses
- Corrective dermatology
- Lymphology
- Acne counselling centre
- Care of patients following organ transplantation
- Phototherapy
- Nail counselling centre
- Diagnostics and treatment of nail disorders
- Centre for biological treatment of psoriasis, chronic urticaria (hives) and hidradenitis suppurativa

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

- Examination of pigmented lesions using a digital dermoscope;
- Laser procedures in aesthetic and corrective dermatology;
- Nail surgeries (e.g. ingrown nails, disc deformation).

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

- MoleMax I plus digital dermoscope
- Fotona XS Erb: YAG and Nd: YAG high power laser.
- Device for photodynamic treatment of skin tumours.

### **Department of Paediatric Dermatology, Motol University Hospital**

*Senior consultant: Štěpánka Čapková, MD*

*Head nurse: Alena Kurešová*

#### **Basic characteristics:**

The department consists of 2 outpatient facilities with 4 part-time physicians and 2 full-time nurses. The department treats patients in the field of paediatric dermatology. It operates nationwide and provides not only consulting services to all the hospital's paediatric wards, but also super-consulting services for the whole Czech Republic in severe diagnostic or therapeutic cases. In 2017, a total of 8,042 patients were treated at the department and 324 consultations were provided on the wards of the hospital's paediatric departments. The department provides undergraduate and postgraduate teaching in the field of paediatric dermatology and short-term internships for general practitioners treating children and adolescents.

#### **Specific features of the department:**

Physicians provide specialised consultancy for extremely serious patients with atopic dermatitis, pigmented moles, genodermatosis and haemangiomas. An important specific feature of the department is its close cooperation with physicians in the Department of Paediatrics (hospitalisation of serious patients), Department of Paediatric Haematology and Oncology, Department of Paediatric Surgery, Department of Paediatric Neurology and physicians in the Department of Rheumatology, Department of Biology and Medical Genetics and Department of Immunology in the care of the most serious dermatological patients. The workplace also takes part in their publishing activities.

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

- The examination of pigmented lesions using the DermoGenius ultra dermatoscope was introduced in 2017.

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

- DermoGenius ultra (dermoscan) digital dermatoscope purchased using funds raised by the Rossmann charity campaign in cooperation with the „Our Child“ Foundation and the contribution of the „Nation to the Children“ Foundation.

#### **Important events in 2017:**

- Co-organisation of the Paediatric Dermatology Conference on 13 October 2017 in Brno in cooperation with the Department of Paediatric Dermatology, University Hospital Brno. Senior consultant, Čapková, MD and Čadová, MD gave lectures at this conference.
- Senior consultant, Čapková, MD organised a one-day training course: Paediatric Dermatology in the Practice of the General Practitioner for Children and Adolescents for the Czech Medical Chamber on 25 November 2017 in Prague.
- Čapková, Š: Atopic eczema (book for parents), 5th revised and supplemented edition, Galén 2017, 140 pp. Dr. Čapková had 3 other Czech publications.

### **Emergency Department for Adults, Motol University Hospital**

*Senior consultant: Lenka Kozlíková, MD*

*Head nurse: Bc. Lucie Vacková*

#### **Basic characteristics:**

The emergency department for adults specialises in basic examinations, the stabilisation of vital functions, treatment of acute problems and the decision to admit or release all patients seeking out this department. 60% of patients are brought to the department by ambulance, 25% come without a doctor's recommendation and 15% are sent to the department by general practitioners.

The department includes an emergency admissions section, equipped with 17 monitored beds, acute outpatient surgery with beds, traumatology, neurology, urology and emergency medical services, which have another 12 examination beds. Since 2017, the department includes an Anaesthesiology and Resuscitation box, where patients in critical condition of various aetiologies are admitted in collaboration with the Department of Anaesthesiology and Intensive Care Medicine. A total of 31 beds are available.

The total number of patients treated at the Emergency Department for Adults was 73,764 patients, of which 21,768 patients in outpatient units, 9,067 in acute surgical outpatient units, 5,578 in neurological outpatient units, 20,752 in traumatology and 16,599 in the emergency unit. The average time spent on the ward is 160 minutes.

## Primary Care Department, Motol University Hospital

Senior consultant: Jaroslava Kulhánková, MD

Head nurse: Alena Kašajová

### Basic characteristics:

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

In 2017, a total of 25,890 patients were treated at the Primary Care Department.

## Department of Hygiene and Epidemiology, Motol University Hospital

Senior epidemiologist: Vilma Benešová, MD

Senior hygiene technician: Mgr. Jana Hrončková

### Basic characteristics:

The control and prevention of healthcare-associated infections, community infections, implementation of measures to reduce their incidence and spread, implementation of hygiene and anti-epidemic requirements in medical and non-medical facilities according to the specific conditions of individual workplaces, ensuring a healthy and safe environment for patients and work conditions for employees.

### Specific features of the department:

The results of ongoing monitoring of the incidence of healthcare-associated infections shows 2.28% of reported infections. Last year, the PMS ECDC 2017 survey (Point prevalence survey of healthcare-associated infections and antimicrobial use in European acute care hospitals) was conducted, involving 1,253 patients. After preliminary analysis, the data acquired from this method of monitoring was comparable to similar European hospitals (7.76%).

Isolation and barrier regimens were introduced in 190 cases due to the detection of MRSA, both colonisation and clinical infections, which corresponds to 2.29 cases per 1,000 patients. Beyond the European study monitoring the incidence of infections caused by *Cl. difficile* (ended in 2016), investigations continued in 186 other cases.

Audits of compliance with the hygiene and epidemiology regime at medical workplaces were conducted in accordance with valid legislation. 339 internal hygiene audits and 241 audits of sterilisation techniques were performed.

690 control handprints for microbiological examination and 3,293 cultivation swabs to check the bacterial cleanliness of the environment were taken from the laboratories of individual departments. Particular attention was paid not only to epidemiologically important workplaces, but also to so-called clean rooms, where the environment was regularly monitored by aeroscopic means, also in terms of requirements for certain levels of cleanliness, in 95 complete measurements (microorganisms and microparticles in the air of clean rooms). Standard hygiene inspections also included examination of hot

water service, checking water analysis results for dialysis, pool water and water from rehabilitation facilities, including the collection of drinking water in indicated cases. Public health authorities also carried out inspections and took laboratory samples at selected workplaces, in collaboration with department staff.

A total of 919 examinations of diagnosed infections in hospitalised patients were performed. Public health authorities were notified of 915 community infections, which were documented for subsequent investigation of the infections and over 200 excerpts from medical records were prepared. A total of 197 disinfections of hospital premises were performed by the institutional disinfection officer.

258 observations were evaluated as part of the implemented Observe Programme monitoring compliance with hand hygiene. Compliance at inspected workplaces was 68%.

In the field of Occupational Health Services - investigation of stab/job injuries to employees, inspection of workplaces and assessment of risk factors, securing decisions on medical supervision issued by the Public Health Protection Authority

### Important events in 2017:

- Participation in the international study PPS ECDC monitoring the incidence of healthcare-associated infections.
- Re-accreditation audit 2017 – assistance to the team of auditors from the Joint Accreditation Committee of the Czech Republic.

## Hospital Pharmacy, Motol University Hospital

Head pharmacist: PharmDr. Petr Horák

Deputies: Mgr. Milan Vegerbauer and PharmDr. Markéta Petrželová

Senior pharmaceutical assistant: Helena Bohabojová

### Basic characteristics:

The main task of the Motol University Hospital Pharmacy is to provide effective and safe pharmaceuticals for inpatient and outpatient clients and the general set-up and control of all steps in dealing with drugs that have an impact on the safety of patients and results of their treatment. In addition to the dispensation of pharmaceuticals, the hospital pharmacy also provides the individual and collective preparation of medicines, both sterile (cytotoxic agents, parenteral medicinal products without antimicrobial agents and others) and non-sterile (individual preparations, especially for paediatric patients), plus the acquisition of unregistered medicines and drugs for clinical studies and clinical-pharmaceutical care.

The pharmacy provides consulting services to patients and healthcare professionals, together with educational activities, including internships for undergraduate and postgraduate students.

The hospital pharmacy is involved in formulating the pharmaceutical policy of Motol University Hospital – compiling a positive list of pharmaceuticals, ensuring the most cost-effective medications, etc. It also prepares the internal regulations of Motol University Hospital for handling pharmaceuticals.

In 2017, the Hospital Pharmacy - Department for the Central Preparation of Cytostatics, prepared approximately 2,000 ready-to-use doses of cytotoxic pharmaceuticals per month for adults and more than 900 for paediatric patients.



The Department for the Individual Preparation of Pharmaceuticals prepared, among others, nearly 300,000 capsules. The pharmacy prepares and distributes parenteral nutrition and associated healthcare to 32 outpatient (home care) patients, of which eight receive individually formulated nutrition prepared by the Department of Sterile Pharmaceuticals. In total, the Department of Sterile Pharmaceuticals prepared 6,777 individual preparations (of which 1,002 were neonatal bags). In addition, it prepares a range of preparations unavailable in the form of mass produced pharmaceuticals in stock (antidotes, etc.).

The hospital was issued with a total of 799,471 packs of mass produced pharmaceuticals. On average, the pharmacy processed 3,646 request forms per month, which contained a total of 17,382 items/month on average (vehicula and large-volume infusions are not included). A total of 1,022,122 packages of pharmaceuticals, medical devices and complementary assortments were distributed to the public, of which 268,797 packages of pharmaceuticals were prescribed by physicians on 234,411 prescriptions. In accordance with the principles of good clinical practice and correct laboratory practices, the pharmacy participates in all clinical evaluations of pharmaceuticals conducted within Motol University Hospital. A total of 6,759 pharmaceuticals were issued as part of clinical studies. Our clinical pharmacists conducted 2,134 initial evaluations of the pharmacotherapeutic regimes of hospitalised patients and provided 270 requested consultations.

In the scientific and publishing field, the pharmacy focuses on individual preparations for specific patient age groups, especially paediatric patients, the development of new magistral preparations with suitable formulations and validated methods verified by stability, and a study of the standard of practice of hospital pharmacies in Europe and their comparison. Outputs from these activities are regularly published and presented at specialist forums in Europe, peer-reviewed journals and journals with impact factor.

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

- Introduction of an acetylcysteine ointment formulation for the treatment of ichthyosis.
- Acquisition and implementation of a SAMIX® U1000 device for the preparation of medicinal products by means of closed-loop technology, which allows an extension of the recommended shelf life
- Acquisition of new pharmacy scales capable of weighing accurately in the order of one ten thousandth of a gram.
- A classification balance sheet was prepared according to Regulation No. 1272/2008/EC for all chemical mixtures for in vitro use supplied to clinical workplaces by the hospital pharmacy.

#### **Important events in 2017:**

- Publication of the results of a pan-European survey of the rate of implementation of European “statements” in the field of hospital pharmacy.
- Presentation of formulation and stability studies of medicines for paediatric cardiology at the EAHP Congress in Gothenburg
- Active participation in national and international events, such as EAHP Academy Seminar, Congress of Hospital Pharmacists, etc. and membership in leading European and national professional societies, as well as participation in major European projects such as the Common Training Framework in Hospital Pharmacy.

- PharmDr. Horák was elected President of the European Association of Hospital Pharmacists for the period 2018-2021

## NURSING CARE

We continued to improve the quality of care provided and patient safety in 2017. We place emphasis, in particular, on the provision of individual comprehensive care.

### Quality Indicators

Monitoring indicators of nursing care (pressure ulcers and falls) is already a matter of course. We focus primarily on preventative measures. For the fourth time, Motol UH joined in on international “Stop the Pressure Day”, which fell on 16 November 2017. The point of holding this event is to familiarise the lay and expert public with the issues of preventing and treating pressure ulcers. For lay people through leaflets, giving out educational posters and presentation of products to prevent and treat wounds on the hospital’s premises; a workshop is held for the expert public and this year it focused primarily on prevention.

Since 2016, the certified Wound Healing course has been accredited by the Ministry of Health of the Czech Republic. Four stages of the course were held in 2017 and nurses from Motol UH and other medical facilities were educated on the issue of wound healing. Another of the key topics in 2017 was the diagnosis and treatment of IAD—incontinence associated dermatitis (focusing on distinguishing pressure ulcers and IAD). Thanks to improved diagnosis this year we managed to significantly reduce the occurrence of pressure ulcers in Motol UH.

The first six nurses from our hospital obtained the skill to insert a catheter accredited by the Ministry of Health of the Czech Republic certified course “Inserting PICC and Midline Catheters”. This team of nurses handles the insertion of catheters and care for hospitalised patients at the university hospital.

### Social Care

**The Social Department cared for 4,857 adult patients in 2017.** Of this number social care was provided to 3,237 patients in acute beds and 1,620 patients in the Aftercare Centre (hereinafter the “ACC”). 739 patients from all the wards were released with home health care, and 40 people with home hospice care. 349 patients were discharged to rehabilitation care beds and 34 patients were assigned a sleeping hospice. 1,075 required beds for long-term patients, of which 976 were transferred to the ACC. 415 patients were discharged from the Aftercare Centre to home care and 139 patients were discharged to residential facilities—homes for the elderly and homes with a special regime.

**The total number of child patients and their families in social care (including new-born infants and children in the Children’s Psychiatric Clinic) is 724.**

Four medical and social workers were on the palliative team for the adult part, where they also provided lecturing activities. There is a medical and social worker that is a consultant at the children’s palliative out-patients’ department at Motol UH. Social department workers contribute to teaching as a part of undergraduate and postgraduate education of medical workers.

Co-operation continued between medical and social workers and the local authority in Prague 5 as a part of community planning of social services in Prague 5.

## Milk Kitchen Department

This department prepares all infant nutrition for child patients at Motol UH, for the premature birth ward, infants and children up to two years of age. **An average of 90-110 litres of infant nutrition is prepared daily.** We use the HAACP system.

The most important criterion is the determination of critical and control points during production.

These points follow the process of cooling milk and infant nutrition and the storage of ready food in cooling facilities. Using this technology, we have increased the safety of the preparation of infant nutrition at Motol UH.

### Spiritual Care

Last year, spiritual care attempted to bring spiritual services closer to patients and staff, primarily by improving its range and attempting to ensure people are correctly informed. It took place in particular in the form of regular training sessions, workshops, publication and distribution activities. **In 2017, hospital spiritual advisors handled 3,315 clients and provided 7,717 consultations.**

### Volunteer Centre

**There were 480 volunteers in the hospital in 2017. They worked 2,934 hours here and helped 4,172 patients.** The volunteers visited 13 departments in the adult and paediatric inpatient part. They spent their time on creative and play activities, reading and talking. There were very popular groups at the Aftercare Centre—music, creative workshops and memory training. The zootherapy, in particular canistherapy, was also expanded. A total of 23 canistherapy teams with 25 dogs were involved in the programme and they worked a total of 192 hours.

**In 2017, the volunteer centre organised a total of 47 events (theatre, music, creative), which 1,216 patients attended.** A total of 117 actors and singers that are unregistered volunteers appeared at these events in addition to the registered volunteers; they spent 205 hours with hospitalised patients.

The VC is also involved in methodological help, consultations and internships for those interested in a volunteer programme in a medical facility. The centre’s coordinators provided a total of nine consultations for Bohnice Psychiatric Hospital, the Central Military Hospital and Others.

### Central Sterilisation

Central sterilization is a self-contained specialized workplace that provides pre-sterilization preparation and sterilization of medical devices for the entire university hospital. It provides sterilization with steam, plasma and chemical sterilization. **In 2017, 100,608 sterilization units were sterilized (a sterilization unit being a 30 x 30 x 60 cm container/basket) in steam sterilizers, 4,907 were sterilized in plasma sterilizers and 3,588 in chemical sterilizers.**

## Healthy Hospital

In 2017, the topic of Health Promoting Hospitals was: "Support for Hospital Culture and a Comfortable Environment for Patients". In April 2017, we presented the project's results from 2016 on a poster at an international conference in Vienna. The topics was "Options for Nutrition Intervention from a Nurse's Viewpoint A Change? Why Not."

Walks into the area around Prague continued, the AcorD choir represented the hospital actively and at various opportunities. The libraries located in the hospital had great success with patients, the public and employees.

Questionnaire research was performed focused on the climate at the hospital, thanks to which we have proposals for other activities from various departments, including activities for the public, patients and employees.

Interactive workshops supported charge nurses in the handling of crises and using feedback as a part of the nursing team.

**A conference called "the Path to Modern Nursing XIX" with international attendees was held in September 2017 and enjoyed great interest from the attendees.**

## HOSPITAL OMBUDSMAN

A hospital ombudsman has been operating at Motol University Hospital since January 2012. An Independent Hospital Ombudsman Department was established on 1 October 2012 and it was renamed the Independent Department of the Hospital Ombudsman and Complaints on 1 January 2013. The main objective of the **Independent Department of the Hospital Ombudsman and Complaints** is to protect patients' rights, improve communication between patients, their relatives and hospital staff, improve the quality of health services and patient satisfaction. The hospital ombudsman handles requests, suggestions, and other submissions directed against the procedures of Motol University Hospital in the provision of healthcare services or for activities associated with the provision of healthcare services. It is available especially in cases where a patient or other person believes that their rights were breached or endangered or if there is or could be a conflict or communication problem between the parties involved and there is therefore a need to deal with a matter in an unbiased way.

For the period of 2017 the department handled a total of **404 submissions. 362 questions**, which were often certain forerunners of a possible complaint, were also dealt with and answered. Of the total number of **404 submissions** there were **356 complaints**. The vast majority of complaints were assessed as **unjustified complaints, whereas there were 36 partially justified complaints and 26 justified ones**. In the case of justified or partially justified complaints a remedial measure was adopted, mostly in the form of education for employees.

The most frequent submitters were patients (**157 submissions**) and the legal guardian of a minor patient (**111 submissions**). The most frequent subject of the submissions was an inappropriate communication (**136 cases**) and the provision of health services (**97 submissions**).

The submissions in question are always resolved with the management of the individual de-partments. In the event it is appropriate with regard to the character of a complaint, an oral hearing is arranged for the purpose of successfully resolving it and it will be attended by managerial workers of the relevant departments. In accordance with the requirement of valid legislation, detailed records of submissions dealt with are maintained.

The results of activities are regularly presented at meetings of the hospital's management and meetings of managerial employees, alongside proposals for the adoption of the necessary measures.

The Independent Department of the Hospital Ombudsman and Complaints deals with requests in accordance with the Act on Free Access to information and comments on draft legal regulations that are sent to Motol UH as a comment point. In accordance with requirements of medical workplaces it realises legal training on current areas in medicine law.



## SCIENTIFIC RESEARCH ACTIVITIES

Motol University Hospital supports scientific research activities as an integral part of its activities anchored in its Statutes. Scientific research projects permeate the entire spectrum of disciplines represented and most departments and institutes at the university hospital participate in them. In this activity the close links between the Second Faculty of Medicine and the First Faculty of Medicine have a great effect, as does co-operation with other research organizations in the Czech Republic and abroad. In accordance with new trends in applying the results of scientific research activities Motol UH supports innovation and the implementation of research results in practice.

Support for science, research and innovation (SRI) at Motol University Hospital is carried out by combined financing from institutional and dedicated funds, which are mainly implemented in the form of grants. Research teams at Motol University Hospital are also involved in international projects, mainly within the EU where they deal with projects under the EU's 7th Framework Programme, in the Horizon 2020 Programme and other EU schemes and EEA and Norway funds.

### Institutional Support for Research and Grants

- Since 2012 Motol UH has been the recipient of Institutional Support administered by the Ministry of Health of the Czech Republic. In 2017 Motol UH was entered in the government list of Research Organizations and, as such, is a recipient of institutional support.
- Institutional support for a research organization at Motol UH is organized in a system of internal grants resolved at the individual clinics and hospital departments. 2017 was the sixth year of the scheme.
- In 2017, the hospital dealt with 15 projects of the Agency for Health Research of the Ministry of Health as the main investigator and 32 projects as a co-investigator.
- Within the framework of Institutional Support, 31 Internal Grant Projects were solved in 2017. The hospital also participated in the joint efforts of the GACR and TACR projects and significantly participated in FP7 and Horizon 2020 within the EU.
- In 2017, Motol UH invested its allocated funds for science and research as follows (CZK):

AGENCY	AMOUNT	No. OF GRANTS
AZV chief investigator	39,264,000.00	14
AZV co-investigator	21,039,000.00	40
TACR co-investigator	1,044,296.00	1
GACR co-investigator	678,000.00	1
IP	83,088,814.00	30
FP7	3,959,905.00	3
Norské fondy	16,240,470.97	3
Horizont 2020	273,400.99	2
other sources	1,046,193.00	5
<b>Total 2017</b>	<b>166,634,079.96</b>	<b>99</b>

- Support for research activities directly depends on output from the assessment of the sciences that is reported to national databases of the Council for Research, Development and Innovation. The results of output from RIV are used for comparisons as a part of the Czech Republic, where Motol UH occupies one of the leading positions and for the distribution of funds in the internal system for Internal Grants, in such a manner that the various research offices are supported in accordance with their performance. In 2017, there was an increase in the global impact factor, which reached 1,854 points.
- The priorities of scientific research activities were progressively determined in Motol UH. The strongest lines for research were shown to be paediatric fields. Research activities are dominated by the Paediatric Haemato-oncology Department with its laboratory and research facilities at the CLIP workplace. There is then strong representation of paediatric fields, paediatrics itself, the paediatric cardio centre, paediatric neurology. Of the fields of adult medicine the ones that stand out are cardiology and adult neurology. Own research activities are performed, in particular, in the laboratories of the Paediatric Haemato-Oncology Department, the Institute of Biology and Medical Genetics, the Institute of Pathology and Molecular Medicine, the Institute of Microbiology and the Institute of Immunology.
- We are intensively supporting the development of innovative therapeutic and diagnostic procedures based on modern technologies, where we provide space for development and clinical testing. Newly introduced administrative support for the use of research results in practice, support for patenting results and their practical application.

### Advanced Therapy Projects

In accordance with its support for innovation and the transfer of research results into practice, Motol UH introduced a system for "Advanced Therapy" projects. Five projects were handled as a part of the scheme in 2017 and practical output is expected from them in the form of new diagnostic or therapeutic options. In 2015, together with the Institute for Organic Chemistry and Biochemistry, an application was filed for a utility model resulting from the joint development of antimicrobial peptides for the treatment of osteomyelitis. An application for an international patent was then filed in 2016.

### Combined Program for Education of Doctors, MD and Ph.D. Program

The combined MD/Ph.D. program has been operating at Motol UH since 2004. In its 14 years, 86 students have gone through the program, and 16 students have already earned a Ph.D. and specialization in the field. 35 students are actively enrolled in the program.

### International Activities

In 2017, we continued to develop international research activities, especially at the level of individual clinics and institutes. In 2017, we dealt with three EU FP7 programs and three projects in the Horizon 2020 system. There was also a significant increase in publication activities reflecting international co-operation.

## Creative Initiative

Motol University Hospital follows and appreciates the quality and successes in the field of medicine and scientific research progress. In 2017, it won an award for the best creative achievement for the previous year, which was handed out to the collective at the Paediatric Hemato-oncology Clinic for work on “New Genetic Diagnostics of Child Acute Lymphoblastic Leukaemia”.

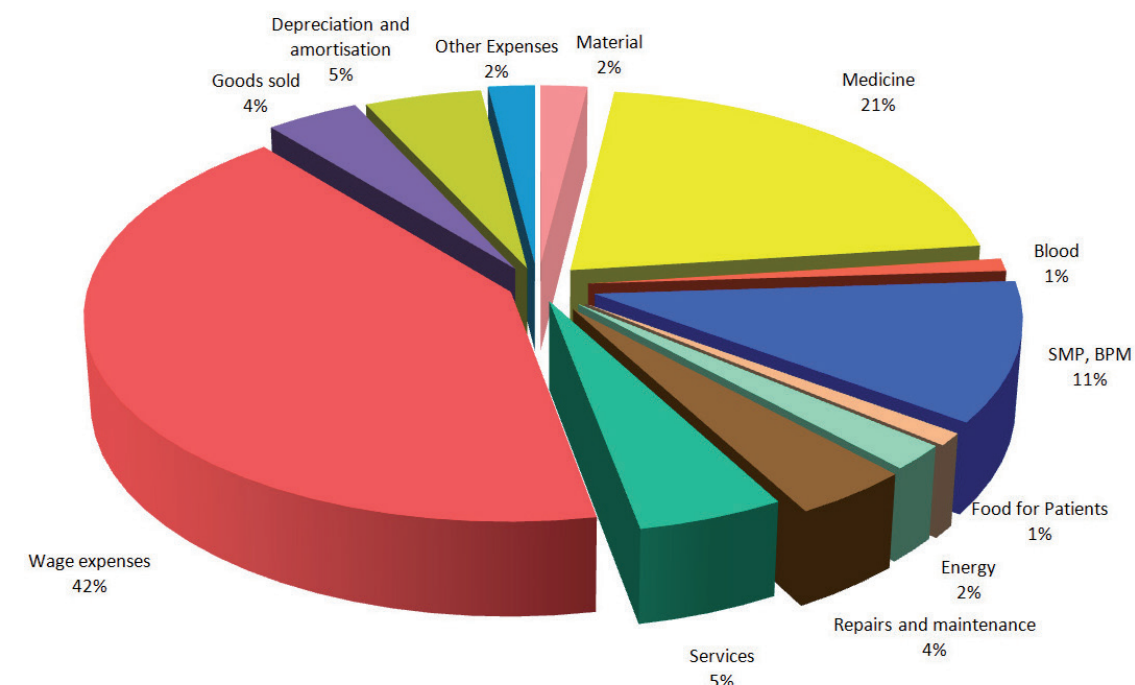
## ECONOMIC ACTIVITIES

BALANCE SHEET (abbreviated balance sheet in thousands of CZK)

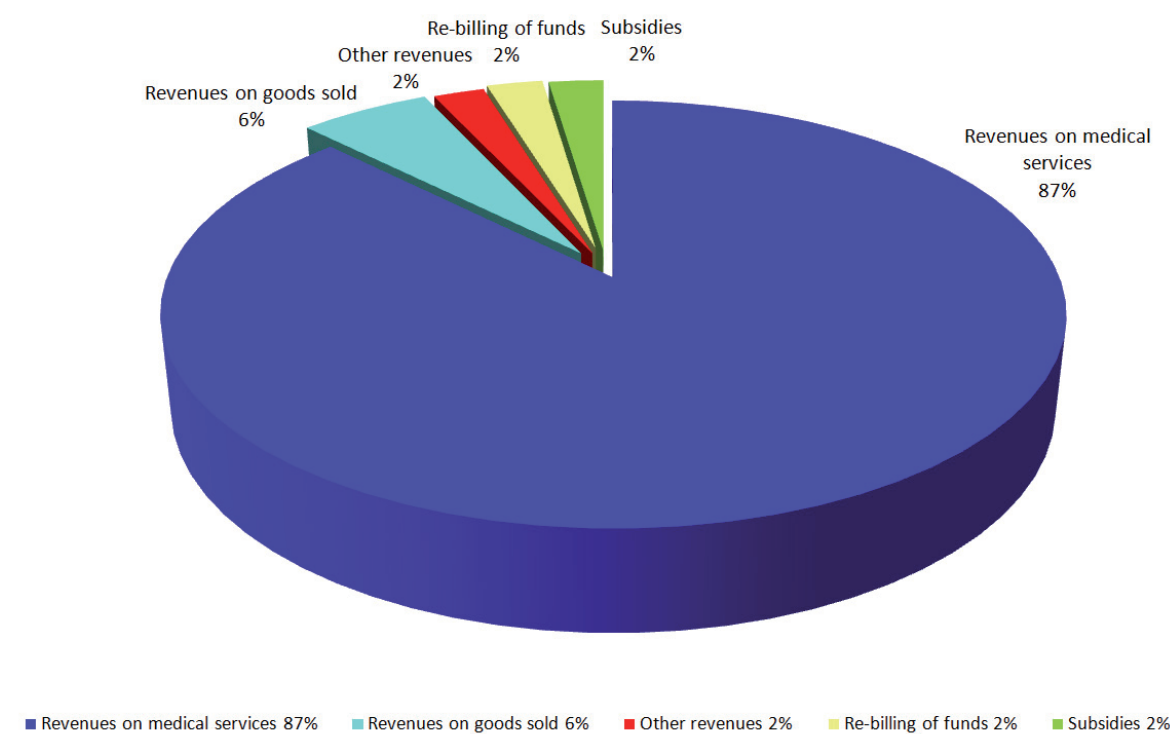
	situation as at 1st January 2017	situation as at 31st December 2017
<b>ASSETS</b>	<b>10,844,753.61</b>	<b>10,947,750.43</b>
Permanent assets	8,924,772.03	8,931,058.55
Long-term intangible assets	13,611.48	7,603.96
Long-term tangible assets	8,899,884.04	8,913,069.40
Long-term financial assets	0.00	0.00
Long-term claims	11,276.51	10,385.19
Current assets	1,919,981.58	2,016,691.88
Reserves	158,568.64	159,435.39
Claims	726,203.19	1,027,134.48
Financial assets	1,035,209.75	830,122.01
<b>LIABILITIES</b>	<b>10,844,753.61</b>	<b>10,947,750.43</b>
Own resources	9,740,699.26	9,865,232.59
Property funds	8,944,655.90	8,952,319.75
Financial and monetary funds	2,221,714.06	2,335,231.93
Economic result for current accounting period	4,150.61	3,301.61
Accumulated loss from previous years	(1,429,821.31)	(1,425,670.70)
Economic result in licensing procedure		
Liabilities	1,104,054.34	1,082,517.84
Reserves	0.00	0.00
Long-term liabilities	275,759.74	223,437.27
Current liabilities	828,294.60	859,080.57
Bank accommodations and loans	0.00	0.00

PROFIT AND LOSS STATEMENT (abbreviated – in thousands of CZK)	situation as at 31st December 2017
Material costs	3,532,434.99
Repair and service expenses	777,492.12
Wage expenses	3,612,151.78
Taxes and charges	300.82
Other costs	76,866.34
Depreciation and amortisation, property sold, reserves and adjusting items	499,263.40
Financial costs	5,720.51
Costs of indisputable rights (state budget, local government, state funds)	0
<b>Total costs</b>	<b>8,504,229.96</b>
Revenues for medical outputs and wares	7,972,509.10
Other revenues	335,073.04
Financial income	47.47
Income from indisputable rights (state budget, local government, state funds)	200,124.64
<b>Total revenues</b>	<b>8,507,754.25</b>
Economic result before taxation	3,524.29
Income tax	0
Additional income tax payments	222.68
<b>Economic result after taxation</b>	<b>3,301.61</b>

### Summary of Expenses 2017—Motol University Hospital



### Summary of Revenues 2017—Motol University Hospital





The financial management of Motol University Hospital as at 31 December 2017 was balanced and this fiscal year ended in a profit with an after-tax surplus of CZK 3.30 m, where the hospital's main activities made a loss of CZK 40.422 m and economic activities made a profit of CZK 43,946 m.

The largest cost item was wages, which rise every year and in 2017 comprised a total of 42.5 % of total costs. A year-on-year comparison of wages shows there was a 9 % increase. One of the reasons is the increase in overtime by nursing staff in connection with staff shortages. In addition, in July the Ministry of Health of the Czech Republic provided a contribution to activities for bed nurses working shifts, which required an additional CZK 19.5 m. The wages of charge nurses increased in August. Government order 341/2017 was approved in 2017 and on 1 January 2018 there was another wage increase, this time by 10 %.

In terms of revenues on treating patients, there was an increase in medical output of 7 % compared to the previous year. This increase is primarily thanks to the development of centres and an increase in out-patient treatment.

The obligations of Motol University Hospital were regularly settled in 2017 within 60 days of receiving an invoice, i.e. fully in compliance with the Civil Code. The payment policy and maintenance of a steady balance of cash flows is a priority task of Motol University Hospital and records of obligations and receivables are therefore monitored in great detail. In accordance with Act 563/1991 Coll., on accounts, as amended, the final balances of liabilities and receivables accounts were approved; their material correctness was also approved, as was stocktaking performed in accordance with Decree No. 270/2010 Coll., on stocktaking of assets and liabilities.

The balance on the current account at the end of 2017 fell compared with 2016 by CZK 213.45 m, which was influenced by a one-off payment by health insurance companies at the end of 2016. The hospital's cash flow is influenced by regular payments for DFN.

Following the passage of Act 128/2016 Coll., which amended Act 218/2000 Coll., on budgetary rules, with effect from 10 May 2016 a duty was stipulated to transfer all accounts to the Czech National Bank by 10 February 2017. This change was realised and on 1 January 2017 all accounts with KB were closed, except the current account. All payments currently take place through the CNB and the account with KB only receives payments due to earlier performance and gifts provided.

## PERSONNEL ACTIVITIES

In 2017, Motol University Hospital employed:

*In revised numbers (RN):* 5, 191 employees, of which 4,154 medical professionals  
*In natural persons (NP):* 5, 808 employees, of which 4,763 medical professionals

### Professional Structure

	2015	2016	2017	2015	2016	2017	INDEX 17/16	
	NP	NP	NP	RN	RN	RN	NP	RN
Total	5,780	5,820	5,808	5,160	5,180	5,191	1.00	1.00
PHYSICIANS	1,215	1,218	1,272	888	888	917	1.04	1.03
PHARMACISTS	33	33	33	27	29	30	1.00	1.03
NURSES	2,009	2,000	1,978	1,890	1,851	1,820	0.99	0.98
MP WITH PROF. QUALIFICATION	378	390	602	359	362	434	1.54	1.20
MP WITH SPEC. SKILLS	235	249	239	196	200	193	0.96	0.97
MP UNDER SUPERVISION	758	774	582	725	741	709	0.75	0.96
JOP WITH PROF. QUALIFICATION	71	62	57	45	50	51	0.92	1.02
TOS (TECHNICAL/OFFICE STAFF)	717	740	735	680	708	724	0.99	1.02
WORKERS	364	354	310	350	351	314	0.88	0.89

(NP) average number of natural persons, (RN) average revised number

### Qualification Structure—State as of 31 December 2017

Education achieved by nurses and midwives	Total	%	Of which specialized	%
Secondary health care	1,300		783	60
Further health care	195		136	70
University—bachelor's degree	330		128	39
University—master's degree	153		77	50
Total	1,978	100.00	1,124	57

### Employees by Education and Gender—State as of 31 December 2017

Education achieved	Men	Women	Total	%
Elementary	114	120	232	3.4
Trained	310	221	532	9.2
Secondary vocational	48	10	58	1.0
Full secondary general	24	53	78	1.3
Full secondary vocational	278	1,943	2,221	38.2
Further vocational	56	238	294	5.1
University	820	1,573	2,393	41.2

of which bachelor's	53	426	479	
of which master's	767	1,147	1,914	
<b>Total</b>	<b>1,650</b>	<b>4,158</b>	<b>5,808</b>	<b>100</b>

#### Employees by Age and Gender—State as of 31 December 2017

Age	Men	Women	Total	%
up to 20 years old	11	20	31	0.53
21–30 years old	339	801	1 140	19.63
31–40 years old	430	949	1,379	23.75
41–50 years old	314	1,126	1,440	24.79
51–60 years old	270	966	1,236	21.28
61 years old and over	246	336	582	10.02
<b>Total</b>	<b>1,610</b>	<b>4,198</b>	<b>5,808</b>	<b>100</b>
<b>%</b>	<b>27.72</b>	<b>72.28</b>	<b>100</b>	

**Healthcare professionals in accordance with Act 95/2004 Coll.** = physicians and pharmacists: total of 1,305

Of the total number of 1,272 physicians, 407 (32%) are doctors with professional competence only. 865 (68%) physicians have a specialist qualification (i.e. 2nd degree attestation, special medical license, license of the Czech Medical Chamber, certificate of the Ministry of Health).

**Healthcare professionals in accordance with Act 96/2004 Coll.** = paramedical professions: in total 3,458, of whom 1,978 are general nurses and midwives.

#### Salaries

A total of **CZK 2,623,386,601** (excluding other personnel costs—remuneration for work done outside an employment relationship) was spent on salaries in 2017. Compared to 2016 there was an increase by **CZK 228,374,945**, i.e. **8.7%**.

The growth of salaries was a result, in particular, of salary adjustments from 1 January 2017 in accordance with Government Order No. 316/2016 Coll. In addition, the volume of funds spent was significantly increased by a special additional payment for non-doctor healthcare workers without specialist supervision for work in three-shift and constant operations in accordance with Government Order No. 168/2017 Coll., increases in the qualification structure and the aging of employees.

The average gross salary in the hospital as of 31 December 2017 was CZK **42,111**. Compared to 2016 there was an increase of **9%**.

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
<b>TOTAL</b>	<b>27 711</b>	<b>29 925</b>	<b>30 824</b>	<b>33 356</b>	<b>35 016</b>	<b>34 364</b>	<b>34 893</b>	<b>36 302</b>	<b>38 529</b>	<b>42 111</b>
<b>Physicians</b>	<b>49 199</b>	<b>50 565</b>	<b>51 373</b>	<b>61 510</b>	<b>67 464</b>	<b>65 564</b>	<b>66 474</b>	<b>68 962</b>	<b>71 753</b>	<b>76 316</b>
<b>Nurses</b>	<b>26 724</b>	<b>29 171</b>	<b>30 206</b>	<b>31 307</b>	<b>32 853</b>	<b>32 079</b>	<b>32 035</b>	<b>33 425</b>	<b>36 390</b>	<b>40 317</b>

## DONORS AND FOUNDATIONS

### Donors and Foundations over CZK 100,000

Allen & Overy (Czech Republic) LLP  
 BEKO Engineering, spol. s.r.o.  
 Dámský klub Karlovy Vary Spa, z.s.  
 Drózd Januš, RNDr., CSc.  
 EGIS Praha, spol. s.r.o.  
 Haramule Bohuslav  
 Hrčková Kristýna, Krejčová Markéta, Čápová Martina  
 Chiesi CZ s.r.o.  
 Lachman Interior Design, s.r.o.  
 Mitchell Dana  
 MONETA Money Banks. s.r.o.  
 Nadační fond AVAST  
 Nadační fond Karolíny Plíškové  
 Nadační fond Kolečko  
 Nadační fond Uran  
 Nadační fond Zelený život  
 Reticulum Power, a.s.  
 Šindlerová Helena  
 Tesco Stores ČR, a.s.  
 Touma Raouf  
 WINTERMAN s.r.o.  
 Život dětem, o.p.s.

### Donors and Foundations over CZK 500,000

Černý Václav  
 HAIMA CZ, z.s.  
 Hlavní město Praha  
 Kroftová Marta  
 Nadace „Národ dětem“  
 Nadace Pohyb bez pomoci  
 Nadační fond „N“  
 Nadační fond Kapka naděje

**Motol University Hospital thanks all the aforementioned donors, who contributed through their gifts, both financial or material, to the improved level of care for patients in our hospital last year. At the same time, we wish to express our thanks to those donors whose names have not been included for technical reasons, although they are listed at our website.**

**We care for  
generations!**



**FN MOTOL**

[www.fnmotol.cz](http://www.fnmotol.cz)