



Annual Report 2016 FN Motol



FN MOTOL

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INTRODUCTORY WORD

Dear friends,

The end of the last year was very unexpected for the whole management of the Motol University Hospital including me. Our long-standing director Miloslav Ludvík, LL.D., MBA was appointed the Minister of Health and at the same time I have been entrusted with the hospital leadership on behalf of the director in the full scope of rights and duties (since 30.11.2016). For this reason, it is my pleasant duty to handle this introductory word in the annual report that you have in front of you.

As well as during the last year, the hospital continued in modernization of the Children's Hospital. The Paediatric Outpatient Centre, the bridge between the headquarter building and the Adult Outpatient Centre, was reconstructed. It caused a relocation of the outpatient centre into temporary premises and a complete closure of the original building, however the reconstruction of the wing B was successfully completed. Furthermore, the hospital succeeded in a construction and technological adjustments of urological operating theatres which are now directly connected with the Department of Central Sterilization and one of the operating theatres is ready for a surgical robot implementation.

From the economic point of view, the Motol University Hospital managed to keep the economic result in a slight surplus by which it followed the row of positive economic results from the past. That was achieved especially by an increased effectiveness of the hospital, the year-on-year increase in the number of patients admitted to hospitalization was 3.5%.

The development of international cooperation, whether in the area of exchange of experience or scientific research cooperation or publications, is one of the hospital's priorities. The Medevac project focused on cooperation in terms of education and medical care continued in the year 2016. Our surgeons participated in development programs in Morocco, Kenya, Jordan and Cambodia. You will find more information about the projects in the separate chapter – 12. International Cooperation.

The Motol University Hospital carries out its activities in accordance with the national accreditation standards of the United Accreditation Commission. The compliance with established standards is being regularly monitored and evaluated, the hospital has a valid certificate till 27. 11. 2017. The accreditation is always a commitment of the organization to improve the quality of the care provided to our patients and to ensure a safe environment for both patients and employees.

Dear friends, I believe that the Motol University Hospital will continue to be one of the pillars of the Czech health care system. The entire management of the hospital aims for this goal.



Pavel Budinský, MD Ph.D., MBA
acting on behalf of the director
of the Motol University Hospital

MANAGEMENT OF MUH

Director of the Hospital

Miloslav Ludvík, LL.D., MBA

Deputy Manager for Engineering and Technology
(since 30.11.2016 acting Director of the Hospital)

Pavel Budinský, MD, Ph.D., MBA

Deputy Manager for Medical Preventive Care

Martin Holcát, MD, MBA

Deputy Manager for Nursing Care

Jana Nováková, MBA

Deputy Manager for Economy

Jiří Čihař

Personnel Deputy Manager

Jindřiška Feldmanová

Deputy Manager for Science and Research

prof. Anna Šedivá, MD, DSc.

Deputy Business Manager

Luděk Navara

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 and Motol University Hospital

prof. Jan Janoušek, MD, Ph.D.

Head of Children's Heart Centre, 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 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

assoc. prof. Radek Špišek, MD, Ph.D.

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

prof. Zdeněk Šumník, MD, Ph.D.

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

assoc. 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 (TO 31. 12. 2016)



BASIC DATA TO 31. 12. 2016

Estate Area (m ²)	348 000
Assets (in thousand CZK)	10 844 754
Total Turnover (in thousand CZK)	8 138 421
Employees (natural person)	5 820
Employees (employment)	5 180
Beds	2 199

Beds

Beds	Children	Adults	Total
Standard	421	1017	1438
ICU	150	216	366
Acute in total	571	1233	1804
Aftercare - intensive	4	10	14
- longterm	-	361	361
- intensive nursing	-	20	20
Total	575	1624	2199

Number of Hospitalisations	79 450
Number of Outpatient Treatments	853 053
Number of Treatment Days (without longterm)	469 656
Number of Anaesthesia Treatments	38 926
Number of Childbirths	3 602
Death Rate	1,36

LIST OF DEPARTMENTS

Paediatric Inpatient Part

Department of Paediatrics *)

Head: prof. Jan Lebl, MD

Children's Heart Centre *)

Head: prof. Jan Janoušek, MD, Ph.D.

Department of Paediatric Psychiatry *)

Head: prof. Michal Hrdlička, MD

Department of Stomatology *)

Head: prof. Taťjana Dostálová, MD, Ph.D., MBA

Department of Paediatric Surgery *)

Head: prof. Jiří Šnajdauf, MD, Ph.D., FEBPS

Department of Paediatric Haematology and Oncology *)

Head: prof. Jan Starý, MD, Ph.D.

- Bone Marrow Transplant Unit

Head: prof. Petr Sedláček, MD

Department of Paediatric Neurology *)

Head: prof. Vladimír Komárek MD

Department of ENT *)

Head: Jiří Skřivan, MD, Ph.D.

- Department of Phoniatics

Head: Petr Myška, MD

Adult Inpatient Part

Department of Surgery *)

Head: prof. Jiří Hoch, MD

3rd Department of Surgery **)

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

Department of Internal medicine *)

Head: prof. Milan Kvapil, MD, MBA

Department of Cardiovascular Surgery *)

Head: assoc. prof. Vilém Rohn, MD

Department of Cardiology *)

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

Department of Otorhinolaryngology and Head and Neck Surgery **)

Head: prof. Jan Betka, MD, Ph.D.

Department of Nuclear Medicine and Endocrinology *)

Head: prof. Petr Vlček, MD

Department of Long-term treatment - Aftercare Centre

Head: Martina Nováková, MD

Department of Neurology *)

Head: prof. Petr Marusič, MD, Ph.D.

Centre for Spinal Surgery **)

Head: prof. Jan Štulík, MD

1st Department of Orthopaedics **)

Head: prof. Ivan Landor, MD

Department of Pneumology *)

Head: prof. Miloslav Marel, MD

Department of Oncology *)

Head: assoc. prof. Jana Prausová, MD, Ph.D., MBA

Department of Urology *)

Head: prof. Marek Babjuk, MD

Common Inpatient Sites of Paediatric and Adult Parts**Department of Obstetrics and Gynaecology *)**

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

– Department of Neonatology with NICU

Head: Miloš Černý, MD

Department of Anaesthesiology and ICM *)

Head: Tomáš Vymazal, MD, Ph.D., MHA

Department of Subsequent Intensive and Long-term Intensive Nursing Care

Head: Kateřina Čadová, MD

Department of Rehabilitation and Sports Medicine *)

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 Sport Medicine

Head: assoc. prof. Jiří Radvanský, MD

Department of Ophthalmology *)

Head: prof. Dagmar Dotřelová, MD, FEBO

Department of Neurosurgery *)

Head: assoc. prof. Michal Tichý, MD

Department of Orthopaedics *)

Head: prof. MUDr. Tomáš Trč, MD, MBA

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

Head: prof. Miloslav Roček, MD, FCIRSE

Department of Clinical Haematology, Motol University Hospital

Head: Ivana Hochová, MD

Blood Bank Department, Motol University Hospital

Head: Eva Linhartová, MD

Department of Biology and Medical Genetics *)

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

Department of Immunology *)

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

Department of Medical Chemistry and Clinical Biochemistry *)

Head: prof. Richard Průša, MD

Department of Medical Microbiology *)

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

Department of Pathology and Molecular Medicine *)

Head: prof. Roman Kodet, MD

Department of Clinical Psychology, Motol University Hospital

Head: Mgr. Zuzana Kocábová

Department of Rheumatology, Motol University Hospital

Head: Rudolf Horváth, MD, Ph.D.

Department of Transplantations and Tissue Bank, Motol University Hospital

Head: Jan Burkert, Ph.D., MD

Outpatient Sector

Central Operating Theatres – paediatric part, Motol University Hospital

Head: Bc. Alice Podařilová

Central Operating Theatres – adult part, Motol University Hospital

Head: Mgr. Vladana Roušalová

Department of Dermatovenerology and Venerology, Motol University Hospital

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

Emergency Department for Children, Motol University Hospital

Head: Marie Mikulecká, MD, MBA

Emergency Department for Adults, Motol University Hospital

Head: Jiří Šoupal, MD

Department of Pediatric Dermatology, Motol University Hospital

Head: Štěpánka Čapková, MD

Primary Care Department, Motol University Hospital

Head: Jaroslava Kulhánková, MD

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

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

Centers for Highly Specialized Care

Center for Highly Specialized Cerebrovascular Care

Center for Highly Specialized Haematooncology Care in Children

Center for Highly Specialized Haematooncology Care in Children with Haemophilia or Other Disorders of Hemostasis

Center for Highly Specialized Intensive Care in Perinatology

Center for Highly Specialized Comprehensive Cardiovascular Care in Children

Center for Highly Specialized Comprehensive Cardiovascular Care in Adults

Center for Highly Specialized Oncology Care in Children

Center for Highly Specialized Oncology Care in Adults

Center for Highly Specialized Intractable Epilepsy Care in Adults and Children

Center for Highly Specialized Care of Rare Hereditary or Obtained Disorders of Hematopoiesis in Children

Center for Highly Specialized Trauma Care in Children

Center for Highly Specialized Trauma Care in Adults

Center for Highly Specialized Care in Patients of Cystic Fibrosis

Center for Highly Specialized Care in Transplantation Medicine for:

- Lung Transplantations in Adults and Children
- Kidney Transplantations in Children
- Heart Transplantations in Children (Cooperation with IKEM, Prague)

Center for Highly Specialized Care in Gynaecologic Oncology

MEDICAL PREVENTIVE CARE

Paediatric inpatient part

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

Head physician: Prof. Jan Lebl MD, CSc
Senior consultant: Jana Tejnická, MD, MBA
Head nurse: Bc. Jitka Kaplická

Basic characteristics:

The department provides diagnostics, treatment and dispensary care for paediatric patients from the Czech Republic in almost all branches of internal medicine. In 2016, 4,940 patients were hospitalized at the clinic, and the outpatient treatment was provided for 30,410. 8 patients successfully underwent a kidney transplant, 9 patients were ready to liver transplantation in IKEM (Institute for Clinical and Experimental Medicine) (of which 2 kids from Slovakia), 4 children successfully underwent lung transplant. On the endoscopic operating theatres, 1,017 interventions were performed and at the department of elimination methods a total number of 1,233 performances that were achieved.

Specialized outpatient facilities for:

The department is under the network of 17 specialty departments (including clinics for children after TX kidney, liver, and lung) and a department of elimination methods. All departments provide testing and treatment for patients from across the Czech Republic. The number of patients treated on an outpatient basis has increased by 20% since 2015.

New methods and procedures:

- The Nephrology Working Group provides care for 13 patients with renal failure on peritoneal dialysis (3 children under 1 year of age), 6 children for chronic hemodialysis and 2 patients for immunoabsorption. The team also introduced molecular - genetic examination of steroid resistant nephrotic syndrome and atypical hemolytic - uremic syndrome.
- The Pneumological Team has established a program of immunofluorescence examination of the bronchial epithelium in patients with suspected primary ciliary dyskinesia. The team also introduced a program of non-invasive ventilatory support in 9 children with neuromuscular disease.
- The Working Group for patients with cystic fibrosis has 8 children for observation after the successful lung transplant.
- Gastroenterology team has developed an extensive program for children, furthermore 59 patients after liver transplant.
- The Working Group for the Diabetology and Endocrinology has improved diagnosis and therapy of rare forms of diabetes and immunodeficiency states. In addition, pilot operation of automatic bone age evaluation was initiated by the Bone Expert method.

- The Center for comprehensive care successfully defended the project of Center of multidisciplinary care for children with perinatal stress.
- Unique technological equipment:
 - A new type of peritoneal dialysis “patient online”.
 - Wireless endoscopic image in gastroenterology and digital transmission of photos, videos to system PACS.
- Important event in 2016:
 - Members of all working groups significantly presented work on domestic and international scientific conferences, they were very active in publishing
 - Gastroenterology work team was awarded by the Czech Society of Gastroenterology for the monograph – Practical Gastroenterology, Hepatology and Nutrition. The team also issued recommendations for the diagnosis and treatment of children with IBD (Inflammatory bowel disease), reflux disease and celiac disease.
 - Diabetology-Endocrinology team was involved in the project of European reference centers for rare diseases, which is the only Centre in the Czech Republic in the section of Endocrinology and a rare bone disease.
 - The team published a book „Children’s Endocrinology and Dieticians“.
 - The medical team of the Infant Department participated in the international study PERTINENT - a study to detect pertussis surveillance in children under 1 year of age in the Czech Republic.

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

Head physician: Prof. Jan Jan Janoušek, MD, Ph.D.
Senior consultant of the dept. of Cardiology: Petr Kubuš, MD, Ph.D,
Senior consultant of the dept. of Cardiosurgery: Roman Gebauer, MD,
Head nurse: Mgr. Dana Křivská

Basic characteristics:

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, cooperates with other workplace in the treatment of adult patients with congenital heart disease. The workplace is characterized by a preference for non-invasive diagnostic procedures (ECHO, MRI, and CT SCAN) and primary correction of defects at an early age. In 2016, 487 surgeries were carried out (3 of heart transplantation), 28 ligation of open duct in low birth weight newborns at other workplaces, 333 catheterization (of which 239 intervention), and number of hospitalized patients was 826 (+ 509 accompaniments) and treated on an outpatient basis: 4,190 patients. These numbers represent an increase in performance in the remaining segment operations and catheter interventions in comparison with the previous years, reflecting the move to the new site, the capacity of suitable space in 2011. In 2016, department provided care for foreign patients within the humanitarian program Medevac in the form of charitable humanitarian missions to Phnom Penh (Cambodia, 1 x-12 patients), Nairobi (Kenya, 1 x-13 patients) and Fez (Morocco, 1 x-13 patients). A total of 38 patients underwent a surgery.

An agreement on cooperation in surgical treatment of paediatric patients with heart disease with the Ljubljana faculty hospital was also implemented through regular visits of cardiac surgeons of Child Crisis Center to Slovenia and operations of more complicated cases in Child Crisis Center.

Specialized outpatient facilities for:

- Clinical cardiology department
- Department of electrophysiology and cardiac pacing
- Prenatal Cardiology
- Connective tissue disease
- Cardiac transplantation

New methods and procedures:

- Long-term implantable mechanical heart support program - two patients with terminal heart failure successfully treated and then a heart transplantation was performed
- The heart transplantation program in children - in 2014 successfully performed in 4 patients, in 2015 in 1 patient and in 2016 in 3 patients.

Unique technological equipment:

- Centrifugal pump Rotaflow for ECMO and short-term mechanical heart support

Important event in 2016:

- Developing a program of molecular-genetic investigation of families with hereditary arrhythmic syndromes and cardiomyopathy using the NGS method, in cooperation with the Institute of Biology and Medical Genetics of the second Medical Faculty of Charles University and Motol University Hospital.
- Implementation of remote monitoring of paediatric patients with pacemakers and implantable cardioverter defibrillators
- The introduction of minimally invasive VSV surgery techniques
- 11 publications in international journals with impact factor:
- Rucklová, K., Koubský, K., Tomek, V., Kubuš, P., Janoušek, J.: Prolonged repolarization in atrial septal defect – an example of mechano-electrical feedback due to right ventricular volume overload. *Heart Rhythm*, 2016, Jun;13(6):1303-8. doi: 10.1016/j.hrthm.2016.01.032. Epub 2016 Jan 29. IF 4,391
- Gardiner, H., Kovacevic, A., Tlzer, G., Sarkola, T., Herberg, U., Dangel, J., Ohman, A., Bartrons, J., Carvalho, J., Jičínská, H., Fesslová, V., Averiss, I., Mellander, M. Fetal Working Group of the AEPC (Tomek, V.): Natural history of 107 cases of fetal aortic stenosis from a European multicenter retrospective study. *Ultrasound Obstet Gynecol.*, 2016, Sep;48(3):373-81. doi: 10.1002/uog.15876. Epub 2016 Aug 4. IF 4,254
- Cohen, M., Sanatani, S., Stephenson, E., Skinner, J., Drago, F., Davis, A., Janousek, J., Rosenthal, E., Collins, K.K., Triedman, J.: Paediatric&Congenital Electrophysiology Society: building an international paediatric electrophysiology organization. *Cardiol Young*. 2016, Aug;26(6):1039-43. doi: 10.1017/S1047951115002553. Epub 2016 Apr 14 IF 0,825
- Cohen, M., Sanatani, S., Stephenson, E., Skinner, J., Drago, F., Davis, A., Janousek, J., Rosenthal, E., Collins, K.K., Triedman, J.: Paediatric&Congenital Electrophysiology

Society: building an international paediatric electrophysiology organization. *Heart Rhythm*. 2016 May;13(5):1006-9. doi: 10.1016/j.hrthm.2016.01.013. Epub 2016 Apr 16. IF 4,391

- Janoušek, J., Kubuš, P.: Cardiac resynchronization therapy in congenital heart disease. *Herzschrittmacherther Elektrophysiol*. 2016, Jun;27(2):104-9. doi: 10.1007/s00399-016-0433-7. Epub 2016 May 25 IF 0,17
- Krupickova S., Quail MA, Yates R., Gebauer R., Hughes M., Marek J.: The comparative role of echocardiography and MRI for identifying critical lesions in patients with single-ventricle physiology, before bidirectional cavopulmonary connection. *Cardiol Young*. 2016, Oct;26(7):1373-82. doi: 10.1017/S1047951115002693. Epub 2016 Feb 4. IF 0,825
- Sridharan S., Sullivan I., Tomek V., Wolfenden J., Škovránek J., Yates R., Janoušek J., Dominguez T. E., Marek J.: Flecainide versus digoxin for fetal supraventricular tachycardia: Comparison of two drug treatment protocols. *Heart Rhythm*. 2016 September; Volume 13, Issue 9, 1913-1919, ttp://dx.doi.org/10.1016/j.hrthm.2016.03.023 IF 4,391
- van Mele JP, Wolff D, Hörer J, Belli E, Meyns B, Padalino M, Lindberg H, Jacobs JP, Mattila IP, Berggren H, Berger RM, Prêtre R, Hazekamp MG, Helvind M, Nosál M, Tlaskal T, Rubay J, Lazarov S, Kadner A, Hraska V, Fragata J, Pozzi M, Sarris G, Michielon G, di Carlo D, Ebels T. Surgical options after Fontan failure. *Heart*. 2016 Jul 15;102(14):1127-33. doi: 10.1136/heartjnl-2015-309235. Epub 2016 Apr 13. IF 5,693
- Tomek V., Radvanský J., Adla T., Chaloupecky V., Slaby K., Pokorny J., Prochazka M., Antonova P, Janousek J. Hemodynamics and Exercise Tolerance after Senning Operation for Transposition of Great Arteries and Its Limiting Factors: A Longitudinal Study. *J Clin Exp Cardiol* 2016, 7:437. doi:10.4172/2155-9880.1000437. IF 1,219
- Seeman T, Hradský O, Gilík J. Nocturnal blood pressure non-dipping is not associated with increased left ventricular mass index in hypertensive children without end-stage renal failure. *Eur J Pediatr*. 2016 Aug;175(8):1091-7. doi: 10.1007/s00431-016-2749-z. Epub 2016 Jun 25. IF 1,791
- Ertekin E., van Hagen I.M., Salam AM., Ruys T.P.E., Johnson M.R., Popelova J., Parsonage W.A., Ashour Z., Shotan A., Oliver J.M., Veldtman G.R., Hall R., Roos-Hesselink J.W. Ventricular tachyarrhythmia during pregnancy in women with heart disease: Data from the ROPAC, a registry from the European Society of Cardiology. *International Journal of Cardiology*, Volume 220, 1 October 2016, Pages 131-136. http://dx.doi.org/10.1016/j.ijcard.2016.06.061. IF 4,638

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

Head physician: Prof. Michal Hrdlička, MD

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

Head nurse: Mgr. Mária Vacová

Basic characteristics:

Paediatric Psychiatry is the only independent clinical establishment in this field in the country. It deals with the diagnosis, treatment and prevention of mental disorders in

childhood and adolescence, is focused on childhood autism, eating disorders, attention deficit hyperactivity disorder, psychotic disorders and suicidal behaviour in children and adolescents. A Family Centre, which is family oriented, is also a part of the clinic. The department is undergraduate and graduate teaching facility. For postgraduate education is accredited in the field of child and adolescent psychiatry and adult psychiatry. In 2016, there were 6,800 outpatient procedures, 1,871 conciliums and 482 admissions in inpatient department.

Specialized centers:

Family Centre for Family Therapy of paedo-psychiatric patients

New methods and procedures:

- In 2010, the department joined the international research consortium COST, focusing on research of early diagnosis of autism spectrum disorders, and has received additional funding for this project from the MINISTRY of EDUCATION for the years 2011-2014. A new diagnostic method has been introduced - the Autism Diagnostic Observation Schedule (ADOS). The ADOS test has been routinely used by the Department of Paediatric Psychiatry since 2012 and hundreds of children have been examined by now.
- Hospital workers further in screening for autism participated in the transfer, standardization and issuance of CAST screening test for school children (Dudová, I., Beranová, Š., Hrdlička, M., Urbánek, T.: CAST – screening test for autism spectrum disorders. First edition., Prague, National Institute of Education 2013. 54 pages) and translated and published a screening test M-CHAT for children of 2 years age (Dudová, I., Beranová, Š., Hrdlička, M.: Screening and diagnosis of childhood autism in early childhood. Screening and diagnosis of childhood autism in early childhood. Paediatrics Practice, 14, 2013, No.3, pp. 153-156.) Both methods are already commonly used in the hospital.
- The hospital continues the unique research of early markers of bipolar affective disorder in high risk offspring in the Czech Republic, supported by the grant of IGA MZ NT 13337 (Internal Grant Agency of the Ministry of Health of the Czech Republic) (head researcher: Michal Goetz, MD, PhD). Grant received excellent evaluation A. The department cooperates in this area with the National Institute of Mental Health. The research team received grant support for the next years (AZV 17-32478A). Dr. Goetz and another employee of the department, Mgr. Markéta Mohaplová prepared the chapter „Bipolar Disorder“ In: Clinical Neuropsychology in Practice ISBN 978-80-2463-068-7 Editors: P. Kulistak et al. Karolinum. 2016.
- The complex therapy of eating disorders, in which the department is of national importance, is ongoing. In 2016, 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.
- Since 2014, electroconvulsive therapy has been available for children and adolescent

Unique technological equipment:

- Device for electroconvulsive therapy: Thymatron DG

Important event in 2016:

- The hospital team was significantly involved in the college textbook Psychiatrists and Paedo-psychiatry (editors: Hosák, L., Hrdlička, M.), published by Karolinum in 2016. The book was created as a joint textbook of Medical Faculty of Charles University in Hradec Kralove and of the 2nd Faculty of Medicine in Prague.
- Two hospital employees (doctor Corner and doctor Goetz) were elected to the Committee of Child Psychiatry of the Psychiatric Society of CzMA JEP (Czech Medical Association of Jan Evangelista Purkyne). Doctor Goetz was elected President of the 23rd World Congress of the International Association for Child and Adolescent Psychiatry and Allied Professions (IACAPAP). This is the first time that a world congress on mental health is held in Central and Eastern Europe.
- Doctor Goetz worked as a visiting professor at the University of Calgary in the past year

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

Head physician: Prof. Jan Starý, MD, Ph.D.

Senior consultant: Vladimír Komrská, MD,

Senior consultant: Vratislav Šmelhaus, MD

Head nurse Bc. Jitka Wintnerová

Basic characteristics:

The department focuses on diagnostics, treatment and research of oncological diseases in childhood, benign diseases such as anaemia, haemorrhagic conditions and congenital coagulation disorders (haemophilia). At the transplantation unit are performed surgeries such as allogeneic and autologous transplantation of hematopoietic stem cells in the treatment of high-risk leukaemia, surgeries of selected solid tumours, and congenital disorders of the immune system or metabolic defects. In 2016, 17,172 examinations and treatments were performed on the outpatient facilities. A total number of 2,765 patients with cancer and 2,605 patients with non-cancerous disease were treated. Newly, 169 children with malignant solid tumors, 40 children with leukemia and myelodysplastic syndrome, 294 patients with benign tumors, 375 children with non-cancerous disease were diagnosed. The total number of hospitalizations was 4,280 and 2,723 of accompaniments. In total, 30 allogeneic bone marrow transplantations were performed of which 26 were from unrelated donors from registers, 2 from identical siblings, 2 from partially inconsistent parents with in vitro grafting and 16 autologous grafting (10 children).

Specialized outpatient facilities for:

- Oncology
- Centre of late consequences
- Department for hemangiomas and lymfangiomy
- Tumors of the CNS (central nervous system)
- Haematology

- Haematological care center
- Department for congenital disorders of blood clotting and bleeding
- Bone marrow transplantation patients
- Haematology stationary ward
- Congenital disorders of blood coagulation and haemorrhagic conditions
- Care for patients after bone marrow transplantation

New methods and procedures:

- An accredited program of autologous hematopoietic cell separation in children on Optia was initiated in cooperation with the Blood Bank of Motol University Hospital.
- In collaboration with the Department of Cellular Therapy of UHKT (Institute of Hematology and Blood Transfusion) two transplantations from haploid family donors underwent a new method of partial depletion of T lymphocytes after grafting.

Important event in 2016:

- Publishing activities of the physicians of the department in 2016: 57 articles in journals with an IF (IF = 359,108 total) and 17 book chapters.
- In February 2016, the second year of Paediatric Oncology Day took place. The event was attended by over 400 paediatric patients and their families from all over the Czech Republic as well as hundreds of people from the general public. Part of the professional program was also a discussion on child oncology on the New Stage of the National Theater. The all-day program culminated in the gala concert of the stars on Wenceslas Square. More on www.dendetskeonkologie.cz

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

Head physician: Prof. Jiří Šnajdauf, MD, Ph.D. FEBPS

Senior consultant: Luboš Zeman, MD (appointed from 1.12.2016)

Head nurse: Mgr. Ilona Mayerová

Basic characteristics:

Department of paediatric surgery is a leading European Center in Paediatric Surgery providing comprehensive diagnostic and therapeutic care for children from premature neonates to adolescents. In the framework of specialized expertise – neonatal surgery, thoracic surgery, oncological surgery, proctology, urology, surgery of the liver and bile duct, congenital defects and paediatric poly-trauma paediatric patients – provides for the whole of the CZECH REPUBLIC and super-conciliar and foreign patients. The clinic owns newborn ICU, ICU for older children, 2 Department of standard care and complex by ambulance.

In 2016, there were 3,015 hospitalized patients of which 740 children were hospitalized for serious injuries. 2,061 children underwent a surgery of which 100 newborns with birth defects. The total number of 25,356 children was treated on an outpatient basis, of which 5,839 in constitutional emergency service.

Specialized outpatient facilities for:

- Thoracic surgery
- Oncology
- Surgery of the liver, biliary tract and pancreas
- Neonatal surgery, congenital defects, prenatal consultations
- Urology
- Proctology
- Traumatology, burns
- Paediatrics
- Counseling home parenteral nutrition

New methods and procedures:

- Bladder neck sculpture according to Kelly, the first surgery in the Czech Republic in 2016.
- Rectal suction biopsy - a mini-invasive technique for diagnosing disorders of the large bowel innervation.
- For the first time in the world a duodenum-controlled pancreas resection was performed in a child diagnosed with Pancreas divisum.
- Extending of the spectrum of miniinvasive surgery - the first operation of diaphragmatic hernia in a laparoscopic child.
- Implementation of early enteral nutrition after intestinal anastomoses according to world trends.
- The surgical solution of hypospadias is extended by the use of the dartos tunic by the tubular plastic urethra and by the foam dressing in postoperative care. This technique will be used in malformed children.
- Laparoscopy – laparoscopic pyeloplasty as a standard method for children over 3 years of age.

Unique technological equipment:

- Manual harmonic scalpel
- Duet Encompass – a modern video device for urology and the EMG of the pelvic floor
- A cystoscope with endoresector for the youngest children, which allows mini-invasive performances for the smallest children
- Portable ultrasound machine that is designed for continuous monitoring of patients after the trauma of the abdomen and chest on the bed ICU
- Mobile bombs for children on home parenteral nutrition
- Mobile bombs on home enteral nutrition

Important event in 2016:

- After 25 years of successful management of the department, Šnajdauf, MD left the position of the head physician and Rygl, MD was named the senior consultant from 1.1. Fryč, MD ended the activity as a senior consultant
- Associate professor Michal Rygl, MD, Ph.D. was appointed a professor in the field of Surgery.
- Jan Trachta, MD succeeded in the international attestation of the European So-

ciety of Paediatric Urology and was awarded the FEAP - Fellow of the European Academy of Paediatric Urology

- Barbora Frybová, MD has completed specialized education attestation in paediatric surgery.
- Grant IGA of Ministry of Health GA of Charles University 159115 (2015-2018, MZO / NT) „Predicting colorectal damage in neonates with gastroschisis.“ Coordinator: Barbora Frýbová, MD; Co-investigators: prof. Michal Rygl, MD, Ph.D., Kokešová Alena, MD, Ph.D., MBA, Radovan Vlk MD
- Internal Grant No. 6021 „Postnatal Care of Patients with Obstructive Uropathy Recognized Prenatally.“ Coordinator: Jan Kříž, MD

Publications:

- Antenatal assessment of liver position, rather than lung-to-head ratio (LHR) or observed/expected LHR, is predictive of outcome in fetuses with isolated left-sided congenital diaphragmatic hernia. EPUB 2016 Mar 23, The Journal of Maternal-Fetal & Neonatal Medicine, 2016, 1-5 IF 1.674, ISSN: 1476-4954 (electronic)
- Coufal S., Kokešová A., Tláskalová Hogenová-H, J Šnajdauf, Rygl M Kverka M Urinary Intestinal Fatty Acid-Binding Protein Can Distinguish Necrotizing enterocolitis from Sepsis in Early Stage of the Disease. Journal of Immunology Research, 2016, Article ID 5727312, 8 pages IF 2812 Supported by Grant NT / 13483 and Grant 326815th
- Frybova B, Kokesova A, D, Mixa in Zemkova, Wolf R, Rygl M Quality of life in patients with gastroschisis is comparable with the general population: A questionnaire survey. EPUB Dec 13, 2016 Biomed Pap Fac Med Univ Palacky Olomouc, 160-xx IF 0.924, 5-Year IF 1.387
- Other publications and lectures: 2 x, 5 x, chapter in the book publication in the home magazine, 24 x lecture on domestic educational action, 12 x 7 x lecture and poster on the foreign action.

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

Head physician: Prof. Vladimír Komárek, MD,

Senior consultant: Věra Sebroňová, MD

Head nurse: Gabriela Pavlová

Basic characteristics:

The department provides diagnostics and treatment of paediatric patients from the Czech Republic in all branches of paediatric neurology and it serves as both a pre-graduate and postgraduate teaching workplace. Within the ward there are 6 beds of the lower-level ICU and 6 beds of video / EEG and polygraphic monitoring. The department also includes a fully equipped electrophysiological laboratory and a clinic with the following specialized facilities and centers. Department of Paediatric Neurology is also a pre- and post-graduate teaching and research center involved in many interdisciplinary and international projects.

In 2016, 866 children were hospitalized with a total number of hospitalization accounts of 1,255. 17,507 outpatient examinations were performed at 8,499 patients. In the electrophysiological laboratory, there were 5,870 performances of which 3,666 EEG, 604

EMG, 1,204 EPs, and 396 long video / EEG and polygraphs. Within the epileptosurgical program, there were 20 resection operations, 5 invasive video / EEG studies, and 3 vagal stimulator implants that were performed.

Specialized outpatient facilities for:

- Department for newborns and infants at risk
- Centre for neurocutaneous diseases
- Counselling centre for inflammatory and demyelinating diseases
- Department for applications of botulinum toxin
- Neuro-oncology
- Neuro-genetics
- Counseling for inherited neurometabolic and neurodegenerative diseases
- Psychological and imaging consulting room
- Center for sleep disorders in children
- The Centre with the international accreditation:
- ERN for rare and comprehensive epilepsy (ERN EpiCARE)
- ERN for rare neuromuscular disease (NMD ERN)
- Hereditary ataxia Centre (within the ERN RND)
- The Centre recognized by Ministry of Health of Czech Republic
- Centre of highly specialized care for pharmacovigilance epilepsy

New methods and procedures:

- The implementation of diagnostics of genetic causes of epilepsy - a completely new method of investigating patients with severe epilepsy (epileptic encephalopathy) using a panel of 112 epilepsy-related genes has been introduced into clinical practice. Selected patients also have full-length sequencing.
- The introduction of a completely new method of treatment of muscular dystrophy on the principle of modification of the transcription of genetic information - a new type of experimental treatment of Duchenne muscular dystrophy which regulates the transcription of genetic information and thus increases the production of missing protein dystrophin. The healing process gives hope to children with an incurable fatal illness.
- In a joint project with the Department of Neurology and the Department of Neurosurgery, 2nd Faculty of Medicine, Charles University and Motol University Hospital, new software for positioning of the intracranial electrodes was introduced in the patients investigated within the epileptosurgical program. The software allows the integration of multiple examinations with detailed location of cerebral functions and dysfunctions, allowing a more accurate introduction of intrusion electrodes.

Unique technological equipment:

- Neuronavigation surgical software for planning intracerebral implantation (stereo / EEG) electrodes

Important event in 2016:

- After more than 25 years of successful management of the department, Prof. Komárek, MD, CSc has retired. From 1.1.2017 he was replaced by Prof. Pavel Kršek, MD, Ph.D.

- Ervín Adam Award and the Prize of the Society of Medical Genetics, CzMA JEP (Czech Medical Association of Jan Evangelista Purkyne) was granted to Dana Šafka Brozkova, MD, Ph.D. The award was granted for the publication „Loss of function mutations in HARS cause of a spectrum of inherited peripheral neuropathies“, published in the prestigious Brain magazine with IF 10.5.
- Participation in the international book „Paediatric epilepsy surgery“. Prof. Pavel Kršek with two chapters participated in the book „Paediatric epilepsy surgery“ (1st edition, John Libbey Eurotext, 2016), which becomes a reference publication in the field of paediatric epileptosurgery.
- The organizing an international scientific conference „Prague Symposium on Paediatric Neurology and Epileptology“. Successful scientific conference with the participation of a number of domestic and foreign top experts (Prof. Lieven Lagae, Prof. Eleonora Aronica, Prof. Tom Jacques, etc.).
- 33 primary publications in journals with IF with summary IF 129.348,
- 15 students in PhD and MD-PhD programme;
- 10 completed grants of projects including three international

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

Head physician: Assist. Prof. Jiří Skřivan, MD, Ph.D.

Senior consultant: Michal Jurovčík, MD

Head nurse: Adriana Laudátová

Basic characteristics:

The workplace is concerned with diagnosis and conservative treatment of ENT diseases in paediatric patients from birth to 18 years of age. As a super-consulting workplace provides care for children with difficult-to-diagnose or difficult curable diseases in the Czech Republic. The Center for Cochlear Implants in children works within the department and its phoniatic section. The department provides surgeries for new-borns with cleft face defects within multidisciplinary cooperation as one out of two departments in the Czech Republic.

In 2016, 2,086 surgeries were carried out at the department, hospitalized 2,430 and treated on an outpatient basis 19,507 patients.

A part of the clinic is the Department of Phoniatics and Centre for Cochlear Implants in children. The department is primarily focused on the selection of candidates for cochlear implantation in children and preoperative and postoperative care for long-term users of cochlear implant, which provides a comprehensive speech therapy, speech therapy and psychological care, including programming of speech processors. Further, it actively provides additional speech therapy rehabilitation in the place of residence in the Czech Republic. Leader of our station is Peter Myška, MD.

At the workplace, a total of 1,601 physician-phoniatic examinations and 3,892 clinical speech examinations were performed in 2016.

Specialized outpatient facilities for:

- Otolaryngological department

- Audiology
- Clinical evaluation of candidates for cochlear implantation and rehabilitation after cochlear implantations
- Department assessing candidates for Baha implant
- Solution of developmental defects of the neck and the head
- Monitoring of glandular swelling
- Phoniatic
- Comprehensive solution lymphangioma and haemangioma of the head and neck
- GERd diagnostics
- Somnology
- Plastic Surgery

New methods and procedures:

- Double-sided cochlear implantation since 2014;
- Solution of choanal atresia with the help of BD stent;
- Laryngotracheal reconstruction using LT-molde stents Monnier;
- Methodology of esophageal pH impedance measurement;
- Application of the BAHA system in clinical practice, it is a unique application of bone hearing aid, a part of it is imbedded into the skull behind the ear. After its incorporation (osseointegration) a special external hearing aid can be connected, it provides significantly better auditory perception for indicated patients than conventional bone hearing aids.
- The implementation of a high-frequency tympanometry in routine treatment of the tympanic cavity in the youngest children, where conventional devices show false negative results;
- Sleep monitoring in apnoeics / PSG /;
- Into the clinical practice, a new software for programming sound processor – Custom Sound Suite 1.3 with enhanced features was established.
- A new diagnostic method on the basis of DPOAE – CochleaScan and the use of the bone (BC) module in technology of the SSEP measurement were introduced. Both methods significantly contribute to refined acoustic diagnostics in youngest children.
- Program of timely surgeries of cleft defects in new-borns. The early detection and treatment of secretory otitis symptoms in children with cleft defects.
- Registered patent on the basis of the study grant application is Lactobacillus intranasal acidophilus
- Establishment of a multidisciplinary working group for complex surgical and conservative solutions of lymphangiomas and head and neck hemangiomas.
- Since 2016, neolaser has been in use with special ENT applications
- Since 2015, the department has been a part of the multidisciplinary laryngotracheal team; solving of the most severe congenital and acquired defects of DC in children.
- The pilot project of using the new electrodes CI512 loader / Shaft /.

Unique technological equipment:

- Polysomnography
- PH Impedancemetry device

- Maico MI 34, a high frequency tympanometer
- CO2 Laser with a micromanipulator
- A high speed bone cutter Bienaire
- CochleaScann on the DPOAE basis – a new technology of objective audiometry
- Wireless unit NRT/Neural Response Telemetry/ module in pre-operative measurement of the C1 function, second generation
- Screening AABR device
- Shaver / microdebrider / with an attachment to pharynx and larynx
- Harmonic scalpel
- Measurement of steady potentials by M.A.S.T.E.R. device
- 3-channel intraoperative monitor of peripheral nerves NeuroStim 3
- NeoLaser

Important event in 2016:

- Organization of seminars for parents of cleft patients and otolaryngologists, first interdisciplinary seminar held on 21.5.2016, Zalužany Chateau.
- Successful defense of the grant MZe (Department of Agriculture) QJ1210093 2012-2016, Clinical monitoring of the influence of probiotic preparation dried with a moisturizing effect for special applications-obtaining patent no.306548.
- Rami Katra, MD defended his dissertation thesis and PhD, Expert Surgery Board.
- Opening of the second department 8B after a several-year outage caused by the reconstruction.

Publications:

- Dadakova M., V. Caganova V., J. Dupej J., E. Hoffmannova E., J. Borsky ., J. Velemínska J. Three-dimensional evaluation of facial morphology in pre-school cleft patients following neonatal cheiloplasty, *Journal of Cranio-Maxillofacial Surgery* July 2016, DOI: 10.1016/j.jcms.2016.07.023 IF 2,597
- Halkova, T., Dvorakova S., Sykorova V., Vaclavikova E., Vcelak J., Vlcek P., Sykorova P., Kodetova D., Betka J., Lastuvka L. Bavor P., Hoch J., Katra R., Bendlova B. : Polymorphisms in selected DNA repair genes and cell cycle regulating genes involved in the risk of papillary thyroid carcinoma. *Cancer Biomarkers* 17 (2016) 97–106 97 IF 1,186
- Hoffmannova E., Bejdova S., Borský J., Dupej J., Caganova V., Velemínska J., : Palatal growth in complete unilateral cleft lip and palate patients following neonatal cheiloplasty: Classic and geometric morphometric assessment, *International Journal of Pediatric Otorhinolaryngology* 90 (2016) 71e76 IF 1,319
- Mateu R., Živicová V., Drobná E., Grim M., Dtrnad H., Vlček Č., Kolář M., Lacina L., Gál P., Borský J., Smetana K., Dvořánková B.: Functional differences between neonatal and adult fibroblasts and keratinocytes: Donor age affects epithelial-mesenchymal crosstalk in vitro, *International Journal of Molecular Medicine* August 2016 DOI: 10.3892/ijmm.2016.2706 IF 4,739
- Jiri Skrivan , Pavel Drevinek: A case report of a cochlear implant infection – A reason to explant the device? *Cochlear Implants International*, OI:<http://dx.doi.org/10.1080/14670100.2016.1227019>

Common inpatient departments of paediatric and adult parts

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

Head of the Department: Tomas Vymazal, Ph.D., MHA

Head physician: Radka Klozová MD

Head nurse Mgr. Tatana Maňasová

Basic characteristics:

The workplace provides anesthesia and resuscitation care for children and adults in accordance with the needs and requirements of Motol University Hospital. Regarding the number of doctors and other medical staff and the range of health care activities is the largest workplace of its kind in the Czech Republic. The department provides specialized care for lower-quality health care facilities throughout the country. It is a managing and coordinating workplace for postgraduate education of doctors and nurses, providing teaching to anesthetists and doctors of other specialties. It provides teaching of both medical and bachelor students at the 2nd Faculty of Medicine in the framework of international educational projects.

In 2016, 1,409 patients have been hospitalized at the department of which 807 adults, 529 children and 73 patients who were given long-term intensive care. The number of hospitalizations have increased in a long term view but the medical and economic demands of these patients have increased dramatically. The number of administered anesthesia in 2016 was 38, 926 of which 11,446 children.

New methods and procedures:

- In cooperation with the metabolic unit the preparation for implementation of children peripheral catheters (PICC) has been started (peripherally inserted central catheter)
- In cooperation with the Department of Surgery, 2nd Faculty of Medicine, Charles University and MUH - the consistent application of ERAS procedures for large abdominal procedures;
- In 2016, 10 multi-organs transplantations were carried out – in total 36 organs were removed;
- Routine use of ECMO technology not only in lung transplantations but also in other conditions associated with acute life-threatening lung and heart failure in adult and paediatric intensive care;
- In cooperation with the 3rd Department of Surgery, 1st Faculty of Medicine, Charles University and MUH and the Multidisciplinary Team performed the first heart-lung transplantation in an adult patient in Motol University Hospital;
- In cooperation with the Children's Heart Center, another heart transplantation was performed in a child patient;
- Routine use of sonography in UZ 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, in the future, also in the children's operating theaters;
- Wide use of echocardiography in patients undergoing cardiosurgical and other procedures, including lung transplantation, in cooperation with surgeons, the project „Ex-vivo lung perfusion before Tx“;
- In 2016, the further rise of patients hospitalized in our department after Tx lung - 42;
- Routine use of Target Temperature Management technology - targeted cooling in patients after circulation arrest;
- Routine investigation of bed hemocoagulation - TEG, ROTEM for early diagnosis of coagulopathy, change of hemorrhage management of significantly saving blood derivatives; Economic savings in the order of hundreds of thousands CZK per year;
- Implementation of modern pharmacies into daily anaesthesiological care;
- Modernization of instrumentation with respect to the latest ventilation techniques using transpulmonary pressure measurement;
- Modernization of the anesthesia equipment rooms;
- The use of Sonography in the diagnosis of early bleeding in the sinus for traumatized patients;
- The use of the most modern techniques in difficult video-laryngoscopic intubation, including disposable intubation aids and devices;
- The use of a combination of neuroaxial blockades in the compensation of large joints (hip, knee), including the training of personnel in specialised workplaces;
- The use of peripheral blockades in paediatric and adult patients;
- The routine use of reversal of neuromuscular blockade, reliable options after anesthesia;
- The use of the techniques of non-invasive ventilation for treatment of respiratory insufficiency, children or adults;
- Routine monitoring of cerebral oximetry and cerebral perfusion in children and adults not only in the extracorporeal circulation using deep hypothermia;
- Comprehensive treatment protocol to deal with diastolic heart failure.

Important event in 2016:

- Whole-hospital interdisciplinary seminar with foreign participation on PICC in child intensive care
- Edition of the textbook of anaesthesia and intensive care in thoracic surgery
- Extension of electronic documentation for children's resuscitation beds and operating theaters - pilot project
- Historically, there were the most publications in both reviewed and impacted journals
- Preparation of the Critical Conditions Manual - Safety Anesthesia Manual

A 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 the Departments of long-term nursing care

Head physician: Katerina Čadová, MD

Head nurse: Mgr. Soňa Hájková

Basic characteristics:

Intensive care for long-term ventilated patients, weaning off the ventilator, hemodynamic stabilization, modification of internal environment, neurorehabilitation, physio and occupational therapy, recondition with mobilization; artificial nutrition, basal stimulation.

In 2016, 73 patients were hospitalized. Gradually, the operation of number of beds has been extended - NIP 10 + DIOP 20.

Specific features of the department:

- Consulting service for patients and families in crisis, alternative communication training, development of a homeopathic pulmonary ventilation program (DUPV - Home pulmonary ventilation) and dispensary supervision in patients with DUPV;
- Training for home artificial nutrition – PEG, training of patients for the care of chronic tracheostomy and tracheostomy tube;
- Acute counseling service for emergency cases in building 22 („former infection“), training of physiotherapists in the study of Bc. in the special issues of NIP-DIOP patients.
- Unique technological equipment:
- Humming weather gauge for control of spontaneous breathing training and outpatient control of DUPV patients
- Electrolarynx for the training of the alternative voice of patients with tracheostomy
- Sonography

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

Head of the Department: Roman Chmel, MD, Ph.D., MHA

Head physician: Marek Pluta, MD Ph.D.

Head nurse: Bc. Libuše Hofmannová

Basic characteristics:

The department provides care in the full range of its specialisation – gynaecology and obstetrics – including methods of assisted reproduction and specialised interventions in the field of oncological gynaecology, senology and uro-gynaecological diagnostic examinations as well as interventions. The department is the Perinatology Centre of the highest level, thus providing care to pregnant women with pathological pregnancies or comorbidities. The follow-up unit of intensive resuscitation neonatal care provides care for extremely immature neonates with regional and nationwide. There is Oncogyneco-

logical centre at the department accredited by the European oncological centre (ESGO and EBCOG accreditation).

Specialized outpatient facilities for:

- Oncogynaecology and Colposcopy;
- Urogynaecology;
- Senology;
- Endocrinological
- Sexology
- Endoscopic
- Center of reproductive medicine
- Ultrasound diagnostics and Fetal Medicine
- Prenatal Diabetology
- Cardiopathies and Haematological diseases in pregnancy

New methods and procedures:

Since 2015, hospital employees have been working on a study to verify the fertility treatment method for women with uterine infertility through uterine transplantation. The study was approved by the Ministry of Health in 2015. The project collaborates with the IKEM (Institute of Clinical and Experimental Medicine) In 2016, the first uterine transplantation was performed, followed by an observation of all patients in the group.

Unique technological equipment:

- therapeutic CO2 laser for the treatment of premalignant changes on the vulva and vagina
- Ligasure-coagulation

Important event in 2016:

- 30th April, 2016 the first uterine transplantation in the Czech Republic was carried out as a 14th transplantation of this organ in the world.
- The doctors of the department were the authors and co-authors of 10 publications in the magazine with the IF.

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

Department of Neonatology with NICU

Senior consultant: Miloš Černý, MD

Head nurse: Dana Šmídlová

Basic characteristics:

The neonatal department is a part of the perinatal center of intensive care of Motol University Hospital, with supraregional competence. In cooperation with paediatric internal and surgical specialties the comprehensive care for newborns with congenital developmental defects from all over the Czech Republic is provided. Last year, 188 congenital children had a severe congenital developmental disorder with urgent or timely treatment (81% of residencies outside Prague). The department also provides special-

ized and intensive-resuscitation care to premature babies, particularly the extremely immature and all critically ill newborns regardless of gestational age. Of course, the care of physiological newborns is mainly in rooming-in mode. In 2016, was given birth to a total of 3,602 of which 321 newborns with low birth weight (2500 g <), and 61 of them with very low birth weight (< 1500 g). At the Neonatal Intensive Care Unit (NICU) were treated a total of 405 neonates last year. (56% had permanent address outside of Prague). For several years, our workplace has one of the lowest specific mortality of newborns under 1000 g in the Czech Republic.

Specialized outpatient facilities for:

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

New methods and procedures:

- In collaboration with the ENT department of Motol University Hospital and a plastic surgeon program of early correction of cleft lip in newborns continues (i.e. The 8th day after birth). In 2016 a plastic correction was performed in 38 newborns.
- Palliative care support program started.
- Use in clinical practice methods of CGM (continuous glucose measurement) at risk newborns.

Unique technological equipment:

- Screen for continuous monitoring of electrophysiological activity of the CNS (a (EEG).
- Therapeutic unit for providing controlled whole-body hypothermia of newborns;
- "Bed-side" analyser Radiometer ABL 800 Flex with a broad spectrum of biochemical variants of determination.
- NIRS: Screen that measures the oxygenation of the brain tissue using spectrophotometry.

Important event in 2016:

- 25 publications, posters and lectures in domestic and foreign journals with IF 5.8; 2 best practices for neonatology;
- Organization of another seminar from the cycle „Interdisciplinary Problems of Neonatology of the 21st Century“, on the topic „Child of a Diabetic Mother“;
- Representation in the Committee of the Czech Neonatology Society (M. Černý, MD)
- Internal grant project: „Adaptation of glucose homeostasis of a newborn baby of a diabetic mother and polarization of his immune response“ (K. Tabery, MD), one of the outputs is the professional recommendation of the CNS for the care of newborn mothers with diabetes;
- The nationwide collection of data on the late morbidity of perinatally threatened children (Doc P. Zaban, CSc.);
- The activity of the work group of the Czech neonatological society on the collection of data from neonatal infections from the perinatal centers of intensive care in the Czech Republic (P. Švihovec, MD);
- Evaluation of teaching and interest group in neonatology by students of the 2nd

- Medical Faculty of Charles University was very positive (J. Tkaczyk, MD);
- Organizing of the 9th annual meeting with former patients of JIRP (Juneau Icefield Research Program), the so-called „Non-Early Picnic“ at Ladronka;
- Activity of the „Charity Fund N“, <http://www.nadacnifondn.cz/>.

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

Head of the department: Prof. Pavel Kolář, Ph.D.

Head physician: Martina Kövári

Head physiotherapist: Mgr. Kateřina Míková

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

1. Department of Rehabilitation

Head physician: Martina Kövári

Head nurse: Mgr. Hana Jirků

Basic characteristics:

The department is concerned with rehabilitation for adult and paediatric patients with vertebrogenic disorders, neurological and internal diseases, after orthopaedic surgeries and injuries of the locomotor apparatus and spinal surgeries. It also provides some special rehabilitation programmes. During the year 2016 a total of 642 patients were hospitalized in the rehabilitation clinic, 7,042 patients were treated in the outpatient department and 15,496 patients underwent a rehabilitation in the other workplaces.

Specific features of the department:

Some physicians and physiotherapists participated in interdisciplinary super-consulting programs for patients with Cystic Fibrosis, DMO (poliomyelitis) patients, hereditary motoric-sensitive neuropathy, swallowing disorders, for patients with urine and faecal incontinence, spastic patients and a lymphology program. The department provides specialised prosthetic care and prescription of suitable aids for patients after amputations regarding the whole Motol University Hospital. Some physiotherapists participate in the multidisciplinary team of the Neurootology, specialized in patients with dizziness and disorders of stability.

New methods and procedures:

- The newly available training of walking with functional electrical stimulation by so-called Walk-Aide system
- Second year of examination of standing and walking on the sidewalk with integrated dynamic pressure sensors and virtual reality
- The standard extension of the use of biofeedback (biofeedback) in patients with faecal incontinence, biofeedback and the possibility of renting it to home therapy.
- Very successfully developed program of rehabilitation of swallowing disorders in collaboration with ENT department.

- A unique program in the Czech Republic is the ongoing program of NORA seminars (neurological-orthopedic-rehabilitation) focusing on paediatric patients, especially children with cerebral palsy.
- New development of a comprehensive program of rehabilitation in hematooncology sick children and childcare system for children which were born prematurely.
- In the children's rehabilitation area, standardized testing of children was carried out by Time Up and Go Test, 6-minute walk test, etc., testing using scales to diagnose central polio and fine motor testing using the Box and Black test, 9 - peg Hole test, etc.).
- Last year, methodical guidelines for rehabilitation care were developed which have been set up systemically. Gradual training of station nurses and other middle and lower staff is underway and rehabilitation nursing audits have been implemented.

Unique technological equipment:

- Walk-Aide system for functional electrical stimulation of the muscles in the central paresis of leg
- Dynamic sidewalk with integrated pressure sensors and virtual reality
- a handheld training tool, the so-called Pablo console
- „Brain port“ device for diagnostic of vertiginous conditions;
- „Balance master“ device for the therapy of stability disorders and vertiginous conditions;
- “X box” device and “Wee” system for the training of stability and coordination skills in children
- Myofeedback device for electrical stimulation of the pelvic floor muscles

Important event in 2016:

- Participation in organizing of a very successful interdisciplinary seminar “Spastická ruka” (Spastic arm), (25.1.2016). An abstract was also organized for this event.
- Associate professor Kobes, MD was an invited keynote speaker at international rehabilitation conferences in Buenos Aires, Nanjing, China and Poland. Our physicians and physiotherapists have actively participated in at least 30 national conferences, not only rehabilitation but also neurological, paediatric or orthopedic.
- An exchange program for students of physiotherapy at the 2nd Faculty of Medicine and Slippery Rock University of Pennsylvania, USA was launched.

2. Spinal Unit

Head physician: Jiří Kříž, MD, Ph.D.

Head nurse: Mgr. Hana Jirků

Basic characteristics:

Spinal unit provides therapeutic and rehabilitation care for patients in the subacute stage after spinal injuries and also for patients in the chronic stage after the injury of the spinal cord with health complications.

In 2016, a total of 77 patients with acute spinal lesion and 36 spinal patients in the chronic stage with acute complications were hospitalized here and approximately 270 patients were treated on the outpatient basis within the dispensary or within newly emerging health problems.

New methods and procedures:

- The continuation of the joint project with the Department of Urology „subscription of sperm vibrostimulation for spinal patients method“
- Continuation of the project „Options of the clinical use of return of reflexes and volitional momentum in the period of the spinal shock“ for the period 2015-2017
- The continuation of the European project „European Multicenter Study about Spinal Cord Injury (EMSCI)“. IFP 2001/P 66
- Finalizing of the preparation of the European multicentre „Pan-European Paediatric Spinal Cord Injury Collaboration (PEPSCI)“
- Opening of the European grant project „Antibodies against Nogo-A to enhance regeneration and functional recovery after acute spinal cord injury and a multicenter European clinical proof of concept trial“. H2020, PHC 15-2015

Unique technological equipment:

- Ferticare Multicept device for vibrostimulation in cooperation with the Department of Urology (gift from Foundation Movement without Assistance)
- Misonic SonicOne device for the removal of necrotic material and devitalized tissue from skin defects (gift from Foundation Movement without Assistance)
- Medelec Synergy EMG / EP device for electrophysiological laboratory of the Department of Rehabilitation and Sport Medicine (financial gift from foundation J and T)
- Finapres NOVA device for evaluating of disorders of the autonomous nervous system (Grant from the Ministry of Health of the Czech Republic)
- ABPM device – pressure holder (Foundation Movement without Assistance)

Important event in 2016:

- Head physician Kříž, MD was appointed rehabilitation instructor and physical education physician based on successful defence of habilitation thesis on 18.3.2016
- On the occasion of the Spinal Injury Day celebrated worldwide on September 5, 2016, the employees of the Spinal Unit of Motol University Hospital held an open-door day and a seminar summarizing the share of individual specialties in the care of the spinal patient.
- Significant publications in Czech and foreign reviewed and impacted journals.

3. Department of Sport Medicine

Head physician: Ass. Prof. Jiří Radvanský, MD

Basic characteristics:

The department of sport medicine is one of the outpatient departments of the clinic. Its activity is mainly functional diagnostics with regional competence (in the case of congenital heart defects with nationwide influence) and derived motor recommendations for pre-school children to the elderly, aimed for example in patients with advanced civilization diseases in the context of metabolic syndrome or with chronic respiratory diseases. The workplace performs load functional diagnostics of the circulatory system even in the patients on the wheelchairs using rumpal ergometry.

In 2016, an examination of approximately 2,563 athletes in preventive sports visits and

2,261 patients with stressful difficulties were performed. Controlled movement therapy was attended by 100 patients, nutritional intervention was performed in 75 patients.

New methods and procedures:

- Since 2016, new software for detailed ECG analysis according to the Seattle Criteria as part of preventive examinations for athletes has been implemented.

Important event in 2016:

- Participation in the grant TAČR (Technological Agency of the Czech Republic)

4. Centre for Pain Research and Treatment

Head physician: Jiří Kozák, MD, PhD.

Head nurse: Lenka Gavendová

Basic characteristics:

The Center for the Treatment and Research of Painful Conditions (CLB) has a multidisciplinary character in the care of chronic pain conditions. It is one of the six neuromodulation centers within the Czech Republic, it is a postgraduate teaching workplace in algesiology and neuromodulation techniques. A telephone counselling line called „Line of Pain“ is introduced to the department.

New methods and procedures:

Since 2015, the workplace has been using multi-contact RF electrodes (Pasha type) with the possibility of continuous insertion of the electrodes to the radio frequency and with the catheter for the application of pharmacies.

Important event in 2016:

- 1.6 -2.4. 6th North-Czech algesiological days, Ústí nad Labem
- 27.-28.5. Meeting of the algesiologists, Valeč in Třebíč
- 20.-22.10. XVIII. Czech-Slovak dialogues on pain of Zlín, participation in organization
- Spring Seminars on pain „Visceral pain“ venue: Prague, Hradec Králové, Plzeň, Brno – co-ordinator of the events
- 20.5. -23.5., New York, USA, the Hilton NYC- 8th World Congress of the World Institute of Pain (WIP)
- Publications in Czech and foreign reviewed and impacted journals.

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

Head physician: Prof. Dagmar Dotřelová, MD, FEBO

Senior consultant: Milan Odehnal, MD, MBA

Head nurse: Bc. Jana Králíčková

Basic characteristics:

The department of Ophthalmology provides preventive, diagnostic, conservative and surgical care for patients from the birth till old age.

In the field of paediatric ophthalmology, the department serves as a superconsiliary centre in Central and Eastern Europe.

In the field of adult ophthalmology our department covers a wide spectrum of up-to-date modern diagnostic-therapeutic interventions, including cataract and vitreo-retinal surgery.

The Department of Ophthalmology has two professional eye care centers for children and adults and two clinics for orthoptic and pleophobic training. The bedside section of the clinic has 25 beds, about 17 doctors and 15 nurses.

In 2016, 498 adult and 756 child surgeries were performed. The most common surgical interventions were cataract surgery in adults (164 interventions), children's operations of strabismus (159) and congenital cataract surgery (69). 6,674 children and 11,404 adults were treated or treated in an outpatient setting. Consular examination was performed in 3,270 patients. The total number of outpatient services was 81,518. 3 725 patients were treated on an emergency.

Specialized outpatient facilities for:

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

New methods and procedures:

- The retinal treatment of retinopathy prematurely borned controlled by retinal camera of RETCAM digital apparatus;
- New surgical procedure for congenital drops of eyelids consisting of the introduction of fascial grafts with an original pentagonal cut and a new variant of ankle fascia.
- In 2016, after approval by the Motol Ethics Committee, intra-arterial ophthalmic treatment of Milphalan was initiated again in patients with advanced retinoblastoma retinoblastoma. The treatment method is carried out in cooperation with KI Imaging methods and KI Child hematology and oncology.
- Since 2016, has been in use the application of the Lucentis biological preparation (anti VEGF treatment against vascular growth endothelial factor) is injected into the vitreous area in the indications: diabetic macular edema, macular edema after retinal venous occlusion.

Unique technological equipment:

- Eye retinal camera designed to investigate young children
- An ocular refractometer designed for diopter examination
- Specialized ultrasound for examination of children

Important event in 2016:

- Prof. Dagmar Dotřelová, MD, FEBO is delegated on an ongoing basis every year as the examiner of the international European trials of Ophthalmology held in Paris (Fellow of the European Board of Ophthalmology).
- Martin Hložánek, MD successfully defended in the autumn of 2016 Doctoral Dissertation and finished his postgraduate degree and obtained the Ph.D degree.
- Third prize for best work published in Czech and Slovak Ophthalmology for 2015 was granted to Gabriele Mahelková, MD, Ph.D. in 2016 and to her co-workers
- „Osmolarity of tears in patients with severe dry eye syndrome before and after application of autologous serum. Comparing with the values of healthy volunteers.“
- In 2016, Aeskulap Edition (Mladá fronta Publisher) published the second revised and extended edition of a multi-author monograph: „Neonatology“. The chapter of Retinopathy of Prematured by Milan Odehnal, MD, MBA.
- Professor Dagmar Dotřelová, MD, CSc., FEBO has been a long-term vice-chairman of Specialization Field Councils for Ophthalmology.

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

Head physician: Prof. Tomáš Trč, MD, MBA

Senior consultant: Daniel Rybka, MD

Head nurse: Helena Hlásková

Basic characteristics:

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

In 2016, 1,462 children and 2,145 adult patients were hospitalized, ie a total of 3,616 patients. 1,197 surgical procedures were performed in paediatric patients and 2,089 surgical procedures in adult patients, ie a total of 3,286 operations.

On an outpatient basis 25,633 patients were treated in the children's section, 14,719 in adult patient section, ie 40,352 patients.

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

Specialized outpatient facilities for:

- Scoliosis
- Sport traumatology for both children and adults
- Specialised arthroscopic interventions
- Neurogenic defects
- Congenital skeletal defects
- Primary and revise endoprosthetics

- Complex surgery of the humeral joint
- Complex surgery of the shoulder joint

New methods and procedures:

- The LCA sculpture using an all-inside method alongside with one of the hamstrings, which tends to restore knee joint stability by mini-invasive arthroscopic technique. The method respects LCA anatomy, allowing balance and proper graft toning. All targeting, channel preparation, and grafting are performed from the inside of the joint. Due to minimal traumatization, the subsequent rehabilitation and overall recovery of patients will be significantly accelerated and facilitated.
- Application of V.A.C. (Vacuum Assisted Closure) – system with extended active automatic cleaning wounds V.A.C. ULTREA VERAFLUO. Vacuum therapy is combined with flooding defect rinsing solution or with treatment solution. The result is a very significant removal of bioburden, demarcation necrosis and acceleration of proliferation of fibrocystic;
- Meniscus transplantation by allograft;
- Surgical replacement of the anterior cruciate ligament in children with open growth joint technique without disturbing the growth plate;
- Preparation of a strategy for treating patella luxation in children and adolescents - preparation of a national standard of treatment, publication in domestic and foreign literature, organization of an international monothematic congress;
- Development of mini-invasive hip joint surgery - standard hip arthroscopy;
- Treatment of cartilage defects by a collagen-based implant.

Important event in 2016:

- Organization and professional guarantee of Central European Congress CEOC from 9th – 11th June, 2016 in Prague, Malé Město.
- Topics:
 - New Trends in Hip and Knee Arthroplasty
 - Arthroscopy of Hip, Elbow and Ankle
 - Tumors Metastasis and Bone Tumors
 - Osteoporosis from Orthopaedic Point of View and-Non Prosthetic Osteoarthritis Treatment (Stem Cells, Pcr, Cultivated Chondroblasts)
 - Paediatric Orthopedics
 - Trauma
- Organizing of the international event „VI. Spring Orthopaedic Symposium „from 31st March to 1st April, 2016 at the National Technical Museum in Prague, incl. Professional guarantees. Topic: Controversies in knee arthroplasty.
- Organizing of XIX. Traditional Teplice Orthopedic Symposium in Teplice on 15th – 16th December, 2016 incl Professional guarantees. Topic: Arthroscopic surgery and subsequent treatment.
- For the orthopaedic public, the department provided live annotated transmission from the operating theater cinema of Prof. Rene Verdonka, MD of the Universitair Ziekenhuis Gent in Belgium. Unique method of menopause transplantation.
- Award was granted for the best article in the journal Orthopedics in 2016: Šťastný E, Trč T, Philippou T, Lisý J, Bruna R.: The use of computed tomography in assessing osteointegration and remodeling of bone tissue in the vicinity of the uncemented

revision oval-type TC.

- Head of the department, prof. T. Trč, MD, CSc., MBA was elected at the National Congress as a chairman of the Society for Sports Traumatology and Arthroscopy of CzMA JEP (The Czech Medical Association J. E. Purkyně)

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

Head physician: Ass. Prof. Michal Tichý, MD

Senior consultant: Jiří Steindler, MD

Head nurse: Gabriela Šuláková

Basic characteristics:

The department is focused on specialised neuro-surgical acute or planned care for paediatric and adult patients; consulting services are provided in the whole range of its specialisation. It also provides education for pre- and postgraduate study courses and scientific and research activities. In 2016, a total of 1,344 patients were hospitalised in both paediatric and adult parts; 1,161 patients undergone a surgery and the outpatient treatment was provided for 5,959 patients.

Specialized outpatient facilities for:

- Neurosurgery for children
- Neurosurgery for adult patients

New methods and procedures:

- Measurement of the neurophysiological function in the brain and spinal cord with the help of a multimodal instrument, an intraoperative stimulation of the brain center for young children.
- Implantation of baclofen pump for the treatment of generalized spasticity in children and adults continues.
- Another broad area is the surgical treatment of craniosyntheses. Our department, thanks to many years of experience and the presence of a maxillofacial surgeon in the workplace, is able to treat even the most complex deformities and treats most of the affected patients from all over the country every year.
- Orientation to miniinvasive approaches in the treatment of degenerative diseases of the spine.
- Vertebroplastics and stentoplasty in the therapy of osteoporotic fractures of the spine in cooperation with the Department of Radiology and the Department of Rehabilitation and Sports Medicine.
- Radiofrequency of neuromodulation in painful conditions (vertebrogenic, peripheral nerves).
- Within the multidisciplinary collaboration with maxillofacial surgeon, ENT specialist and a plastic surgeon, we are engaged in solutions of large lesions in skull base and face. These are often performances unsolved and unsolvable elsewhere, where a multidisciplinary approach is essential. A reconstruction often follows the resection performance with the need to treat huge soft tissue defects. The reconstructive part of our team has an extensive experience with coverage of such defects via microvascular transfer of free flap.

- The department is the only one which is dealing with reanimation of paretic face with the use of dynamic and passive suspensions and reinnervation of paretic face via cross-face method.
- Use of highly specialized multimodal monitoring in patients with craniocerebral injury in the field of neuro-traumatology;
- Within the neurovascular program, the surgical program and endovascular techniques are both developed in cooperation with the Department of Imaging methods. Also decompressive craniotomy in patients with ischemic diseases is performed in collaboration with the Department of Neurology;
- Sophistication and standard use of frame and frameless stereotaxes - application in the introduction of deep brain electrodes and in biopsy of the brain.
- The program for the treatment of refractory epilepsy in the Center for Epilepsy of the Motol University Hospital continues. Stereotactic implantation of deep brain electrodes for subsequent long-term video-EEG monitoring for pharmaco-resistant epilepsy and resection epileptocirgic procedures is performed.
- Endoscopy development of congenital developmental defects techniques in children with hydrocephalus and synostoses; in the last year also in neonates.

Unique technological equipment:

- Electromagnetic neuronavigation Medtronic without a need of fixation of the head on the new central operating theatres for children (including frameless stereotactic).
- Cerebral neuronavigation BrainLab, integrated with the Pentero microscope (Zeiss), the company's SW equipment.
- Neuro-monitoring device Nicolet Endeavor for the intra-operative follow up of neurophysiological functions
- Ultrasound applicator of the fixation of absorbable osteosynthesis SonicWeld.
- Stereotactic frame device Radionics
- Neuroendoscopic device
- DIGI - LIFE IP digital transcranial Doppler
- possibility of direct transmission of operational performance including connection to the operating microscope and possibility of videoconferencing

Important event in 2016:

- The Active participation of hospital employees at a number of professional events at home and abroad, besides on ESTM (epilepsy surgery techniques meeting) in Prague, 2016 - Karolinum - International Congress on Operational Techniques in Epileptosurgery.

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

Head physician: Prof. Tatjana Dostálová, MD, 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 of a practical dentist, pedodontologist, parodontologist, prosthetics, orthodontist, dentoalveolar and craniomaxillofacial surgeon in treatment of congenital and acquired developmental defects, injuries and tumors, children center distraction osteogenesis of facial skeleton of inborn developmental defects and joint center for jaw joint endoprosthesis. In collaboration with other departments and institutions (eg neurosurgery, ENT, ophthalmology, oncology, plastic surgery, biology and genetics) diagnostics and treatment of congenital and acquired defects of splanchno-neurocrania, development of microscopic craniomaxillofacial operatives. In 2016, 31,291 outpatient treatments and 702 one-day treatments were performed / 272 dental restoration in general anesthesia and 430 surgical procedures. 872 patients were hospitalized at the inpatient section and 847 operations were performed of which 293 rehabilitation of dental patients in general anesthesia.

Specialized outpatient facilities for:

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

New methods and procedures:

- use of new augmentative materials/MEDPOR/
- care for cleft patients/comprehensive dental care/
- orthognathic surgical procedures, including specialized counselling and 3D modelling, planning and reconstruction
- dental implantology and guided bone regeneration with a focus on young handicapped patients
- dental care of handicapped patients under general anesthesia and analgesia
- Surgery of the temporomandibular joint, including the image of the Endoprosthesis
- Facial skeletal distraction in children with birth defects;
- Digital dentistry using 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 preparation /
- SurgicPro - load-analytical implantation system
- CATCAM / technology for dental refunds creation/
- PC dental arch
- 3-D imaging system CBCT I-CAT
- Intraoral scanner

Important event in 2016:

- Publishing of a handbook: „Children’s Dentistry“ - a brief overview in slogans. Author: Kristina Ginzlová, ISBN 978-80-270-0085-2.
- Participation in grant studies
- a. Rare congenital and developmental diseases of the orofacial system (Norwegian funds)
- b. Congenital and developmental defects of the orofacial system (Center for the Czech Republic within the EU)
- In the framework of European cooperation, participation in studies:
- a. Rare congenital and developmental diseases of the orofacial system (Norwegian funds)
- b. Congenital and developmental defects of the orofacial system (Center for the Czech Republic within the EU)
- In 2016, MDDr. Michaela Buckova, MD; Nima Mahdian, MD and Petra Hliňáková, MD completed their PhD studies with a Ph.D. degree
- Multiple active participation in international and national congresses (eg 3 active participation in EACMFS (European association for cranio maxillo facial surgery) 2016, SPIE PHOTONIC WEST 2016, EAO 2016).

Adult inpatient part

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

Head of department: Prof. Milan Kvapil, MD, MBA

Head Physician: Vladimír Srnský, MD

Head nurse: Mgr. Kateřina Lisová

Basic characteristics:

The Department of Internal Medicine provides comprehensive diagnostic and therapeutic care in almost the whole range of internal discipline, hospitalized and out-patients of the catchment area, and superconsiliary services for patients in the Czech Republic. It allows undergraduate teaching of Czech and foreign students of III-VI. year at the 2nd Faculty of Charles University and graduate teaching within the scope. The department is a training center for doctors before the attestation of internal medicine, gastroenterology, diabetology/endocrinology, nephrology, intensive metabolic care and parenteral and enteral nutrition. The department is an educational institution for abdominal Sonography courses organized by the POSTGRADUATE MEDICAL EDUCATION, Inc. licensing of

PHARMACISTS guaranteed by Czech Medical Association. In 2016, there were treated on an outpatient basis a total number of 53,235 patients. 4,715 patients were hospitalized.

Specialized outpatient facilities for:

- Generally internal (incl. consult with the services)
- Gastroenterology (including endoscopy and Sonography)
- Diabetology
- Nephrology (incl. peritoneal dialysis)
- Cardiology (incl. ECHO)
- Angiology (incl. DUS examination of arteries and veins)
- Podology
- Nutritional (incl. obezitology)
- Lipodology
- Endocrinology

New methods and procedures:

- New possibilities for bile duct investigation using the SpyGlass endoscopic system that allows direct visualization of bile duct mucosa with targeted biopsy or intra-ductal lithotripsy. The examination is indicated especially for stenoses of bile ducts of an unclear biological nature or of difficult choledocholithiasis.
- The continuation of the use of method of continual monitoring of glucose concentration with focus on pregnant women, followed by an observing of the child’s diabetic mother after birth.
- The clinic has fully developed its „Department of Vascular Catheters“, providing mid-term and long-term venous intakes for adult patients (midline, PICC, permcath, port), implemented according to recommended international standards.
- On the metabolic unit, a method of positioning PICC using the ECG at the patient’s bed began to be used.
- A new method of differential diagnosis of hyponatraemia based on differential values and the ratio of serum sodium and chloride concentrations was introduced. Results published in the journal Internal medicine.
- The Department of Dialysis introduced the therapeutical apheresis - a method serving as:
 - a. Lipoprotein apheresis in patients with extreme dyslipidaemia and cardiovascular risk
 - b. Reopheresis in patients with diabetic foot syndrome of ischemic origin without the possibility of revascularization in order to influence microcirculation and healing of defects (instrument: Art Universal Fresenius).
- Unique technological equipment:
- Sono Side Monom ultrasound device used for ultrasound navigation when introducing vascular access at the patient’s bed“Pocket“ infusion Batcher for the sick on the „home“ parenteral nutrition
- „pocket“ infusion dispensers for patients on „home“ parenteral nutrition
- Toshiba Xario 200 for Doppler vascular examination

Important event in 2016:

- Prof. Otto Schück, MD, was awarded within his jubilee anniversary with Silver Medal of Charles University in Prague, Thomayer Medal, and IKEM Medal;
- Associate Professor Kateřina Štěchová, MD, Ph.D. was appointed professor of Internal Medicine;
- Jiří Drábek, MD successfully completed his Ph.D., Pavlína Piňhová, MD were awarded the „Teacher of the year 2015/2016“
- Prof. Kvapil is the author of the book: Diabetology 2016 (Triton, 2016).
- Prof. Štěchová and company published a monograph: Technology in Diabetology (Maxdorf, 2016), which maps current technical possibilities and their potential in the treatment of diabetes mellitus
- Prof. Charvát and company are the authors of the book: Venus Entries - Medium and Long-Term (Grada, 2016).
- Prof. Charvát and company held certified courses MZ:
 1. to gain the competence of introducing PICC and midline catheters
 2. for proper treatment of vascular inputs.
- Three two-day symposia for diabetologists, internists and cardiologists called „Brainwaves“ were organized.
- The traditional three-day 22nd postgraduate seminar „News in Diabetology“ was organized in Poděbrady.
- An annual cycle of two-day seminars „Myths, Mistakes and Truths in Diabetology“ continued.
- Souček, MD lectured as part of a neurointensive course for doctors of the Department of Neurology, 2nd Faculty of Medicine, Charles University and Motol University Hospital.
- Publications:
 - Brož, MD is the co-author of publications: Alcohol and diabetes mellitus (2016, Prague).
 - Doc. Piňha co-authored the chapter on foreign monograph, Tips and Tricks in Angiology, published by Edizioni Minerva Medica in S.p. And (Torino, 2016)
 - Prof. Kvapil is co-author of article: missense and variants in the gene is associated with GLPR the glycaemic response to treatment with gliptins. (Diabetes, Obesity and Metabolism 2016, IF 6.198).
 - Assoc. Prof. Keil is co-author of the recommendation: the Pediatric gastrointestinal endoscopy. European Society of Endoscopy (ESGE) Gastrointestinal and European Society for Paediatric Gastroenterology, Hepatology and Nutrition (ESPGHAN) Guideline Executive summary. (Endoscopy 2016, IF 5.634).
 - Doc. Piňha is co-author of publications: Biphasic response in a number of stem cells and endothelial progenitor cells after left ventricular assist device implantation: A 6 month follow-up. (International Journal of Cardiology 2016, IF 4.64).
 - J. Žďárská MD and company published the article: Student-organized street screening for diabetes mellitus and metabolic syndrome: a Mere celebration of World Diabetes Day or actual preventive and diagnostic step? (Diabetes Research and Clinical Practice 2016, IF 3,045).
 - Brooch, MD and company are the authors of the article: Licensing regulations for diabetes and driving – Two sides of the same coin? (Diabetes Res Clin Pract. 2016,

IF 3.045).

- Assoc. Prof. Keil. published article: What is the role of endoscopic retrograde cholangiopancreatography in assessing traumatic rupture of the pancreatic in children? (Scandinavian Journal of Gastroenterology 2016, IF 2,199).
- Assoc. Prof. Keil. the authors of the communication are: Clinical monitoring: infliximab biosimilar CT-P13 in the treatment of Crohn's disease and ulcerative colitis. (Scandinavian Journal of Gastroenterology 2016, IF 2,199).
- Šťovíček, MD is a co-author of publications: Leg raise increases pressure in the lower and upper esophageal sphincter among patients with reflux disease gastroesophageal reflux. (The Journal of Bodywork Movement Therapies 2016, IF 1.93).
- Malá, MD is the co-author of the article: Recurrence plot of heart rate variability signal in patients with vasovagal syncope. (Biomedical Signal Processing and Control 2016, IF 1,521).
- Prof. Charvát with collective published the article: Space Glucose Control system for blood glucose control in intensive care patients--and the European multicentre observational study. (BMC Anesthesiology 2016, IF 1,320).

Part of the is the 6th clinic is –

Infectious Diseases

Head Physician: Tulach Martin, MD

Basic characteristics:

Department of Infectious Diseases provides outpatient and inpatient care for patients with infectious diseases or suspicion on them. It performs the diagnosis and treatment of fever, respiratory tract infections, blood vessels, soft tissues, CNS infections, acute infections of the digestive tract, incl. acute and chronic infectious inflammation of the liver, as well as imported infections etc. Care is granted to adults and children since three years of age. The Department has 23 contracted beds – of which 20 beds standard including one insulation box and 3 beds of intermediate care. The number of hospital admissions for the year 2016: 581, Performances: lumbar puncture: 22.

Specialized outpatient facilities for:

- General outpatient centre for infectious diseases
- Treatment of viral hepatitis Center
- Travel Medicine Center
- Infectious Center for drug addicts

New methods and procedures:

- Since 2015, chronic viral hepatitis C has been administered directly to the next-generation virostatic (simnprevir) to treat genotype 1 in combination with ribavirin and pegylated interferon α .
- Uninterferon therapy was initiated for new generation virostatic agents (sofosbuvir, ledipasvir, ombitasvir, ritonavir, paritaprevir, dasabuvir, daclatasvir).

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

Head physician: Prof. Jiří Hoch, MD

Senior consultant: Zbyněk Jech, MD

Head nurse: Bc. Jitka Kabrnová

Basic characteristics:

Department of Surgery of 2nd Faculty of Medicine, Charles University and Motol University Hospital in 2016 ensured patients with complete surgical, outpatient, consulting and hospital care across the entire field, i.e. - General and abdominal surgery and traumatology, abdominal and chest. Plastic Surgery treated the patients on outpatient and inpatient spectrum and provided plastic-surgical interventions in the field of interdisciplinary care also at the workplaces of other surgical disciplines. Interdisciplinary care was focused on solving serious conditions in cooperation mainly with the Department of Urology, Department of Obstetrics and Gynaecology, 1st Department of Orthopaedics, the Spinal Unit of the Rehabilitation Department and the Department of Paediatric Surgery. The number of reconstructive and preventive operations on the breast operated with a spastic hand increased. The proportion of laparoscopic optics and the use of the surgical rectoscope (TEO) and ICG methods in anastomosis control increased significantly. The department participated in pre-graduate and postgraduate education and was the focal point of the research assignments and the head of the IGA multidisciplinary grant.

In 2016, on an outpatient bases, 23,791 patients were treated and 4,006 patients within the department; 3,509 patients were hospitalized and 3,164 patients underwent a surgery.

Specialized outpatient facilities for:

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

New methods and procedures:

- OTSC-OVESCO for doctors
- Certified course in laparoscopic operation for doctors
- Surgical proctoscope-TEM/TEO
- ICG anastomosis control

Unique technological equipment:

- The state-of-the-art dissection and electrocoagulation techniques including the harmonic scalpel and LigaSure are used in the operative.

- Scintillation probe is used to identify the sentinel node in breast and malignant melanoma operations.
- Ultrasonic dissector is available for liver operations.
- Conventional and microsurgical using the TAMIS method and using the surgical rectoscope is performed transanal surgery. Various methods, including DG HAL, are available to treat hemorrhoidal disease.
- As a follow-up to the National Colorectal Cancer Screening Program, the scope of counseling, including endoscopic examination, has been expanded.
- Functional examination of anorect.

Important event in 2016:

- Organization of the Working Day of the Coloproctological Section of ČCHS ČLS JEP (Check surgical company of Czech medical society of Jan Evangelista Purkyně) with foreign participation;
- Course for „Comprehensive care for patients with breast cancer“
- ConvaTec Academy - a certified training course for stoma nurses.
- Certified Endoscience Course.
- Completion of the IGA NT13726 multicentre grant „Parametric quality monitoring of TME as a tool for limiting local recurrences after rectal cancer surgery.“ And putting its results into practice.
- Continuation of Grant of Motol „Modern Technologies“ - nanofibrous technology; Filing of the patent.
- Managing a multi-center study of stomic devices.
- At the department, a pre-qualification course in surgery was held in October 2016, and in November 2016 a surgical attestation.
- In the framework of the extension of specialization, the professional internship in coloproctology and on surgery
- Three doctors are chairmen of the expert sections, the other two are members of the committees of international companies, one of the doctors is a member of the Czech Medical Academy.
- Physicians have taken part in a number of domestic and international conferences - posters and lectures.
- Significant publications in Czech and foreign reviewed and impacted journals.

Monograph:

- Hoch J. and Adámek, J.: Department of Surgery, 2nd Faculty of Medicine, Charles University and Motol University Hospital. In J Šváb and company
- Chapters from the history of surgery in the Czech lands. Karolinum 2016, s. 112-115. ISBN 978-80- 254-3238-4.
- Hoch. J., Antoš F.: Koloproktology -selected chapters, Mladá fronta a. s., 2016, ISBN 978-80-204-4179-9.

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

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

Senior consultant: Jiří Tvrdoň, MD

Head nurse: Mgr. Ida Šmolíková

Basic characteristics:

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

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

It provides medical care in the whole range of abdominal surgery (surgeries of oesophageal reflux disease, diaphragmatic hernia, oesophageal achalasia, a surgery of the stomach and small intestine, liver, biliary tract and pancreas, a surgery of the colon and rectum, hernia surgeries, minimally invasive laparoscopic techniques, thoracic and abdominal traumatology and endocrinosurgery).

In 2016, 3,273 surgeries were performed; 3,717 patients were hospitalized and 15,887 patients were treated on outpatient basis. 42 transplantations of the lungs were performed.

Specialized centres:

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

Specialized outpatient facilities for:

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

New methods and procedures:

- Preparation and introduction into clinical practice of the Ex vivo pulmonary perfusion and pulmonary recondition programme, a method leading to an increase in the number of suitable grafts for lung transplantation;

- Preparing a lung transplantation program from DCD donors (donor after circulation);
- Preparation and implementation in clinical practice of the Heart and Lung Transplantation Program in cooperation with IKEM;
- Introduction of endoscopic application of absorbable stents in oesophageal, stomach and respiratory diseases.

Unique technological equipment:

- 3D instrumentarium - for laparoscopic and video-thoracochurgical surgery

Important event in 2016:

- Prof. Pavel Pafko, MD, DrSc. and Prof. Robert Lischke, MD, Ph.D. received annual award of Czech transplantation company (for 2015) for the exceptionally successful launch and development of the Lung Transplantation Program in the Czech Republic.
- 25.11.2016 - Meeting of thoracic surgeons of the Czech Republic. To the meeting was invited Prof. Joseph Furak, Szeged, Hungary. He gave a lecture on Surgical Treatment of Lung Cancer and VATS. The meeting was attended by the Section of Breast Surgery of the Czech and Slovak Republics.
- Press conference for anniversary of 300 lung transplantations in the Czech Republic's Lung Transplantation Program

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

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

Senior consultant: Jana Páleníčková, MD

Head nurse: Bc. Jana Kovalčíková

Basic characteristics:

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

In 2016, more than 23,000 patients were treated on outpatient basis, 4,400 patients were hospitalized. 3,340 selective coronarographies, 1,029 percutaneous coronary interventions, 550 catheterization examinations of peripheral arteries, more than 7,000 echocardiographic examinations, 151 radiofrequency ablation arrhythmias, 119 implants of ICD, and 3,450 duplex ultrasound examinations of peripheral blood vessels were performed.

Specialized outpatient facilities for:

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

New methods and procedures:

- Intravascular spectroscopy - in the Czech Republic this is a unique research use of new invasive methods for evaluating the qualitative composition of the athe-

- rosclerotic plaque;
- Extension of using the fractional flow reserve technique in patients with a stable AP and angiographic findings at the borderline level
- Catheterisation implantation of 2nd generation of 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 set in the Czech Republic;
- Carotid stenting – the largest collection in the Czech Republic;
- Using of the proximal-protection system during the stent implantation in the carotid bed;
- Catheterisation occlusion of atrial septal defect and patent foramen ovale (PFO);
- Catheterisation occlusion of para-valvular leak and aortic valve Amulet;
- Method of controlled hypothermia in resuscitated patients;
- Imaging of the heart by 3D echocardiography;
- Program of endomyocardial biopsy;
- Treatment of rhythm disorders with the help of 3D electroanatomical mapping;
- Program for cardiological examination of marathon runners.
- 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 catheterization hall
- Lucas Compression System – a device for external cardiac compressions

Important event in 2016:

- First Interactive Internet Textbook in Clinical Medicine for Cardiology Physicians and Advocates - „Cardiovascular Medicine“ is available free of charge on the Internet (www.kv-medicina.eu). The book recorded 3,300 individual downloads within one year.
- It was published 19 papers in foreign journals with impact factor, first papers in Lancet magazines (in press, IF 44), Eur Heart J (IF 15), Heart (IF 6), Int J Cardiol (IF 5)
- The Lancet Magazine Publication: Veselka J.: Hypertrophic Obstructive Cardiomyopathy, Lancet 2016 has received an extraordinary award for 20 years of scientific work and success not only in the context of Czech medicine.
- The organization of the Annual Congress of the International World Congress of Angiology 2016 in Prague is an expression of international recognition by prof. Josef Veselka, MD, CSc. In the field of interventional angiology. During this congress several of our colleagues were awarded for their active presentation, namely Bonaventura, MD, Honěk, MD, Jahnlová, MD and Tomašov, MD.
- Doc. Petr Hájek, MD, PhD. became one of the vice-presidents of this organization in 2016.
- Prof. Veselka received the award of prof. John B. Chang Research Achievement Award, awarded by the International College of Angiology.
- Best Poster of the European Cardiology Congress 2016 in Rome: Jakub Honěk, MD

was awarded for the best poster in his category at ECS 2016.

- Active participation of our doctors at the EACTS Barcelona Congress, N.Y. Veith Symposium New York, ESC Rome, Congress of Young Cardiologists Salzburg.
- Cardiological Congress Brno - Competition of Young Cardiologists – Honěk, MD won 2nd prize for his presentation.
- Organization of the annual Prague Intervention IX symposium. With presentations of foreign lecturers.
- Organized a regular, abundantly attended arrhythmological day called „Arrhythmia for practice“.

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

Head physician: doc. MUDr. Vilém Rohn, CSc.

Senior consultant: Milan Horn, MD

Head nurse: Mgr. Barbora Kolářová, MSc.

Basic characteristics:

The department provides comprehensive care in cardiac surgery and vascular surgery. It is directly related to the Department of Cardiology and the Department of Radiology, it also cooperates closely with the 3rd Department of Surgery, Transplantation Centre and the Department of Anaesthesiology and ICM.

The department provides continuous surgical emergency for all urgent cardiovascular system including traumas.

In 2016, 5,386 patients were treated on an outpatient basis and 985 large surgeries were performed, of which 518 heart attacks (6% increase versus 2015) and 467 vascular operations.

A team of our hospital has performed a total of 49 extracorporeal membrane oxygenation (ECMO) in own patients, patients of the 3rd Department of Surgery and the Department of Anaesthesiology and ICM.

In collaboration with the Children's Cardiocentre was provided comprehensive care for patients with congenital heart defects in adulthood. In 2016, 32 patients with congenital malfunction underwent a surgery. Within the transplantation programs, 30 transplantations of lungs were provided by extracorporeal circulation.

Specialized outpatient facilities for:

- Cardiology
- Cardiosurgery
- Vascular diseases
- Congenital heart defects in adults
- Patients after surgical treatment of infective endocarditis

New methods and procedures:

- Video-assisted surgery in all patients with disease of the mitral valve, tricuspid valve and atrial septum;
- Miniinvasive surgery of the aortic valve, use of non-stitches valvular prosthesis;

- Video-assisted mini-invasive surgery of some congenital heart defects (eg atrial septal defect, resynchronization therapy);
- Comprehensive care for adult patients with congenital heart disease;
- Surgical treatment of infectious endocarditis, including the treatment of drug addicts in collaboration with the Department of Infectious of Motol University Hospital;
- Hybrid minimally invasive solutions of polymorbid patients with CAD (PCI - stent + MIDCAB - from minithoracotomy bypass without extracorporeal circulation);
- Mechanical heart and lung support - ECMO;
- Reconstruction (conserving) surgery of the aortic valve.

Important event in 2016:

- Active participation of the hospital employees at 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 Cardiology Society.
- Organization and successful course of attestation examinations of specialized education in the field of vascular surgery
- 21. 10. 2016 - Organizing a training course Congenital heart defects in the clinical practice of an outpatient cardiologist of the Czech Cardiology Society.

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

Head physician: Prof. Jan Betka, MD, Ph.D.

Senior consultant: Pavol Jablonický, MD

Head nurse: Jana Jandová

Basic characteristics:

The department provides a complete spectrum of examination and treatment of diseases in the ENT field. Surgical methods are performed in the full extent including super-specialised interventions and are conducted in most cases for the whole Czech Republic.

In the year 2016, a total of 3,048 patients were hospitalised, of which 1,288 at the ICU. In our operating theatres, 3,135 surgeries were performed including 217 surgeries performed outside the department. The department performed 48,548 outpatient examinations. In 2,482 patients there were performed further specialised audiometric examinations and a total of 7,529 surgeries were undertaken. Objective audiometry was performed in 259 patients and otoacoustic emissions in 350 patients. The examination of the statokinetic apparatus was performed in 955 cases and the ENG examination in 212 patients. The department performed 260 examinations for indication of hearing aid and a total of 63 hearing aids were distributed.

Specialised outpatient facilities for:

- Oncology
- Kophosurgery

- Rhinology
- Endocrinosurgery
- Otoneurology
- Correction of hearing disorders - hearing aids
- Laryngo-phonosurgery
- Rehabilitation of voice - voice prostheses
- Sleep disorders and snoring-related problems
- Sonography
- Salivary glands disorders
- Swallowing disorders
- Neurosurgery and cranial base disorders

Specialised centres:

- Centre for lasersurgery
- Centre for surgery of the thyroid and parathyroid glands
- Centre for cochlear implants
- Centre for head and neck oncosurgery
- Centre for rehabilitation in patients after 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 Montgomery Salivary Bypass Tube after resection and reconstruction interventions in oncological surgery of head and neck
- Augmentation of vocal cords via Radiesse
- Treatment of patients with sleep apnea using the DISE method (Drug Induced Blindly Endoscopy)
- Treatment of Frey's syndrome by botulinum toxin
- CODACS – the first surgery of this cochlear implant in Czech Republic
- Endoscopic approaches in removal of tumours of the internal auditory meatus
- Perioperative neuromonitoring
- Fibroendoscopy of swallowing pathways with functional assessments (FEES)
- Extended microsurgery in tumours of paranasal sinuses and crania using the navigation
- Examination of vestibular myogenic potentials / VEMP / in patients with equilibrium disorders
- Endoscopic surgeries of esophageal diverticula
- Endoscopic diagnostics of respiratory tract tumours and tumours of swallowing pathways with the help of MBI
- Endoscopic examination of the salivary glands and endoscopic treatment of sialolithiasis
- Rehabilitation of patients after total laryngectomy by 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, radio-frequency scalpel, shaver;
- Endoscopic equipment for mini-invasive interventions of thyroid gland and in the surgery of cranial base and internal auditory meatus;
- Videostroboscope, ENG Video
- NBI in early diagnostics of tumours
- Neuronavigation
- Video-endoscopy of salivary glands
- Microcutter and laser for stapedius ear surgery

Important event in 2016:

- A significant event in the existence of the department was the replacement of leading positions. On 1.1.2017 left Prof. Jan Plzák, MD after 30 years of successful leadership of the department the position of head physician and he was replaced by Prof. Jan Betka, MD. The new senior consultant became Jan Kluh, MD who replaced Pavol Jablonický, MD after 25 years in function. The official handover took place on 2.1.2017 at the ceremony with the participation of significant guests of 1st Faculty of Medicine, Charles University and MUH and 2nd Faculty of Medicine, Charles University and MUH.
- 1. - 3. 6. 2016 in Karlovy Vary took place 78th Congress of the Czech Society of Otolaryngology and Head and Neck Surgery of the Czech Medical Chamber of J.E. Purkyně (CzMC JEP).
- 5. - 7. 10. 2016 Prague - IFHNOS World Tour – the department was the organizer of the Prague stage, IFHNOS World Tour.
- 7. – 9. 10. 2016 - Prague hosted ENT meeting of the UEMS section. The department participated the ENT meetings of the EU section in medical specializations, the meeting was for the first time in its history organized in the Czech Republic.
- Within the year 2016, the department provided specialized program and lecturers at a number of courses of The Institute of Postgraduate Medical Education:
- 23rd specialized supra-regional conference with international participation Sláma Day
- Medical Expert in Clinical Training Benefits of the NBI in the Diagnostic Endoscopy in Laryngology - this event was organized in collaboration with the company Olympus
- 23. – 25. 9. 2016, Hamm 15th Czech-German Days
- 15th edition of ENT Vincentka Forum 2016
- 8. – 11. 11. 2016 Prague, 29th International Course of Endoscopic Endonasal Surgery (EES, FES, FESS)
- In a number of these courses participated actively pre- and post-graduate students (lectures and posters).

Prestigious Awards

- Congress of young ENT doctors (Rožnov pod Radhoštěm) – Response of FaDu line to irradiation V. Živicová (Best Poster Award)
- 78th Congress of the Czech Society of Otolaryngology and Head and Neck Surgery - Rehabilitation of voice in patients after total laryngectomy using personalized voice synthesis and its impact on quality of life of these patients, authors: Řepová

B., Matoušek J., Betka J. (Best Poster Award)

- 78th Congress of the Czech Society of Otolaryngology and Head and Neck Surgery CzMA JEP - Importance of infiltrating lymphocytes in tumors of head and neck, authors: J. Bouček, M. Zábrodský, S. Partlová, K. Kloudová, V. Koucký, R. Špíšek, A. Fialová, T. Eckschlager, B. Říhová J. Betka (Best Abstract Award)
- 78th Congress of the Czech Society of Otolaryngology and Head and Neck Surgery CzMA JEP - Specialized hearing tests to distinguish between different levels and types of presbycusis, Svobodová V. (Diploma for the Best E-poster)
- Kutvirtova Prize for the Year 2015 (category of physicians under 35 years) for publication:
- Kalfert, D., Pesta, M., Kulda, V., Topolcan, O., Ryska, A., Celakovsky, P., Laco, J., Ludvikova, M.: MicroRNA Profile in Site-specific Head and Neck Squamous Cell Cancer. *Anticancer Res*, 35, 2015, 4, p. 2455-2463. IF (1,895)

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

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

Senior consultant: Kateřina Táborská, MD

Head nurse: Jana Richterová

Basic characteristics:

This interdisciplinary workplace for nuclear medicine and endocrinology is focused besides standard diagnostics by radioisotope methods, also on diagnostics, treatment and dispensary care of patients with differentiated carcinoma of the thyroid gland and severe forms of thyroid orbitopathy and on therapy of 131I-MIBG from the whole Czech Republic. The department also serves as an educational centre, it is accredited in specialisations of endocrinology and nuclear medicine. In the last year, the department provided care for 20,000 patients, of which 1,000 were hospitalised. The nuclear medicine outpatient facility provided almost 7,000 examinations and therapeutic applications of radioactive pharmaceuticals.

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

Specialized outpatient facilities for:

- Endocrinology focused on differentiated thyroid carcinoma (DTC), the dispensary has over 15,300 patients (this is one of the biggest ensembles in the world)
- Advisory for thyroid gland microcarcinoma
- Advisory for medullary thyroid carcinoma (MTC)
- Advisory for thyroid autoimmune orbitopathy (TAO)
- Nuclear medicine

New methods and procedures:

- Diagnostics and treatment of differentiated carcinoma of the thyroid gland using

- human recombinant thyreostimulation hormone (rhTSH);
- Diagnostics using a hybrid method of combination of X-ray (CT) scanning and isotope (SPECT) imaging;
- Introduction of new diagnostic procedures in patients attending check-up examination after therapeutic thyroid elimination via radioiodine (TGL program)
- In cooperation with the Department of Oncology, 2nd Faculty of Medicine, Charles University and MUH, the department provides targeted biological treatment of radioiodine-refractory thyroid gland carcinomas;
- Providing of genetic testing in patients with familial forms of medullary thyroid gland carcinoma and testing of patients with papillary thyroid gland carcinoma.
- Treatment of patients with high-risk neuroblastomas with the help of combined ¹³¹I-MIBG and Topotecan with whole-body dosimetry in collaboration with the Department of Paediatric Haematology and Oncology.
- Unique technological equipment:
 - SPECT / CT camera Symbio Inteva Excel for nuclear medicine outpatient facility and the two-headed camera with crystal 5/8 „Symbio S at the inpatient ward
 - Modern radiopharmaceutical laboratory with the C level of cleanness
- Important event in 2016:
 - Organization of the 9th Workshop of Nuclear Endocrinology for the Czech and Slovak inpatient departments of nuclear medicine in Humpolec;
 - A total of 8 scientific articles published in domestic and foreign journals.

Department of Long-term treatment - Aftercare Centre

Senior consultant: Martina Nováková, MD

Head nurse: BA Lucie Kubová

Basic characteristics:

LTT-Aftercare Centre has a total of 381 beds at 13 inpatient wards. It is specialized on one hand in geriatric issues, and on the other hand in care of patients after trauma, surgery, chronic internal diseases, cerebrovascular accidents etc. without age restrictions.

The 10th-inpatient ward has 24 beds and it is focused on hospitalized patients requiring intensive care, respectively care which is required by acute internal department.

The 14th-inpatient ward, which is situated outside the main building, has 29 beds and it is focused on aftercare in patients in chronic hemodialysis program.

LTT- Aftercare Centre is specialized in wound healing, nutrition, physiotherapy and ergotherapy. Clinical psychologist, speech therapist, 14 physiotherapists, 2 ergotherapists and 4 social workers are available here for patients.

The physiotherapy is carried out individually or in groups using the most modern methods such as electrotherapy, magnetic therapy, ultrasound, biolamp, vacuum compressive therapy on the healing of chronic defects etc.

The cooperation with the Volunteer Centre continues, it organizes entertainment and educational programs, trainings of memory or dog therapies for the patients. For patients, there is also a library within the Aftercare Centre.

The department obtained an accreditation of the first degree for teaching of geriatrics

and it is involved in postgraduate medical education in the field of geriatrics, internal medicine and bachelor's degree education for nurses.

The centre hosts training courses.

New methods and procedures:

- Extension of speech therapy and care of patients with swallowing disorders;
- Strategy for the development of palliative care in the adult part of the Motol University Hospital was implemented together with the establishment of palliative team.

Unique technological equipment:

- Extremiter 2010-better future - + CO2 therapy - a device for vacuum-compression therapy in wound healing
- Two fitness machines for muscle strengthening of the lower extremities (project MIDFRAIL)
- Device for electrotherapy and magnetic therapy

Important event in 2016:

- Participation in the organization of Certified Course of Wound Healing (in collaboration with the Spinal Unit, MUH)
- Graur, MD has acquired professional competence in the field of geriatrics by passing the postgraduate exam (November 2016).
- Kamburov, MD met the criteria for obtaining the internal strain
- Head nurse Kubová has finished her university studies and obtained Master's degree in nursing.
- Employees of the department have actively participated in congresses in the Czech Republic where they have presented and published.

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

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

Senior consultant: Aleš Tomek, MD, Ph.D.

Head nurse: Hana Chvátalová

Basic characteristics:

The department provides comprehensive diagnostic and therapeutic care for patients with diseases of the nervous system. The main programs developed on the highest possible level in the Czech Republic are cognitive, epileptological, neuro-otological, neuromuscular, neuro-immunological and neurovascular programs. In addition to care for patients from the surrounding area, a superconsiliary care is here selectively provided for patients from all over the country.

In 2016, the department provided outpatient examination for more than 40,000 patients. A total of 2,170 patients were hospitalised.

Highly specialised centres:

- Highly specialized centre for cerebrovascular care accredited by the Ministry of Health of the Czech Republic
- Highly specialized centre for pharmaco-resistant epilepsy accredited by the Ministry of Health of the Czech Republic

Specialised centres:

- Centre for diagnostics and treatment of demyelination diseases;
- Cognitive centre
- Neuromuscular centre
- Centre for Parkinson's disease and other extrapyramidal disorders;
- Centre for hereditary ataxia
- Neuro-otological centre

Specialised outpatient facilities for:

- Advisory for neuroAIDS
- Advisory for headaches
- Advisory for neurocutaneous diseases
- Vertebro- and myoskeletal advisory centre

New methods and procedures:

- In cooperation with the Academy of Sciences of the Czech Republic and Czech Technical University, an advanced EEG assessment in the field of intracranial EEG and high-density scalp EEG was introduced, as well as implementation of protocol for examination and mapping of cognitive functions from intracranial electrodes.
- The department participates in the international project E-PILEPSY which has enabled an implementation of the methodology for EEG sources evaluation (Electrical Source Imaging) and post-processing in the field of neuro-imaging (advanced processing of PET image and its co-registration, 3D Slicer).
- Within the long-term study Czech Brain Ageing Study (CBAS), levels of homocysteine, oxidative stress markers and pathological proteins (TDP-43, phosphorylated tau and beta-amyloid) are analyzed both in serum and in CSF. Genetic examination was extended by the determination of polymorphism for TOMM 40 in homozygotes for ApoE3 / E3 apolipoprotein. A polymorphous examination for BDNF-met has recently been introduced.
- Continued extension of sampling of patients with limbic encephalitis and investigation of neutralizing antibodies in patients with multiple sclerosis. A group of patients treated with donepezil, where their SCF sample was taken, was extended by the group of patients with rivastigmine and memantine.
- In the field of multiple sclerosis, a new multiple sclerosis investigation protocol was developed and a study of structural correlates in multiple sclerosis on MRI was carried out.
- The cognitive centre innovated the tests for preclinical examinations and prodromal Alzheimer's disease, including new investigative battery for spatial cognition testing in virtual reality.
- The CSF laboratory in collaboration with the Department of Immunology, 2nd Faculty of Medicine and MUH has implemented a new immunoassay methodolo-

gy for determining the intrathecal synthesis of anti-GAD antibodies. The existing diagnostic panel of autoimmune encephalitis - examination of antibodies against well-characterized onconeural antigens (Hu, Yo, Ri, MA2 (Ta), CV2, (CRMP5), amphiphysin) conducted with the method of Western blot with a subsequent automated semiquantitative evaluation. The detection of antibodies against membrane and synaptic antigens (NMDAR, AMPA1R, AMPA2R, GABABR, Caspro-2 LGI-1) through indirect immunofluorescence on cells transfected by genes for the relevant antigens was extended by Zic4, Tr (DNER), SOX1, Ma1.

- Within the laboratory differential diagnostics of neurodegenerative diseases, a unique fingerprinting method electrochemical body fluids was introduced.
- Routine use of video-EEG monitoring and cerebral perfusion using TCD at the ICU
- Extension of the program of personalized medicine of antithrombotic agents in the secondary prevention of cerebrovascular disease by measuring of the effectiveness of new oral anticoagulants in collaboration with 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 and MUH).
- A method for rehabilitation of patients with chronic dizziness and balance disorders which is unique in the Czech Republic was launched in the hospital. The method uses a visual biofeedback using force platform and tablet. Our department contributed to the system development.
- Launching of programs for rehabilitation of strabismus, amblyopia and functional version of Hess Screen was under way in cooperation with the Department of Cybernetics, FEE CTU and common inpatient Department of Ophthalmology, 2nd Faculty of Medicine and MUH.
- Examination of otolith system using cervical myogenic evoked potential method, introduction of the pupilometry method - extension of possibilities for testing of the existing equipment for video-oculography (VOG). A new methodology of examination of the vestibulo-ocular reflex functions was introduced with the help of the ICS Impulse device by Otometrics. The device is unique because it allows the examination of the function of individual semicircular canals in order to detect incomplete vestibular lesions.
- Testing of thin fibers of peripheral nerves via method of thermal threshold determining using the Peltier element.
- Introduction of a unique neurophysiological diagnostics of disorders of thin nerve fibers (A delta, C fiber) in patients with peripheral and autonomic neuropathy. Introduction of neurophysiological tests (spectral analysis - frequency and time) in cardiac autonomic neuropathy in diabetic patients.
- A new methodology of quantitative electromyography in the diagnostics of myopathy (computer processing of EMG signal - power spectrum analysis, peak ratio, number of small segments). The methodology enhances the sensitivity from the original percentage of 64% to the new result of 91%.

Unique technological equipment:

- 256-channel high-density EEG for epileptological and cognitive programs
- device ICS Impulse by Otometrics for examination of the function of individual

- semicircular canals
- Telemetry with the central monitor Philips IntelliVue M3150 for 9 patients
- Ultrasonographic device RIMED Intraview with a helmet for long-term monitoring
- Ultrasonographic device Toshiba Aplio 500 for examination of transcranial and extracranial arteries and peripheral nerves with a 3D imaging together with MR / CT data
- 128-channel EEG system NicoletOne video-EEG monitoring
- Rotating armchair NYDIAK for electronystagmography - ENG examination
- FAN Study system for a complete evaluation of the autonomous nervous system function including the test on an inclined plain.
- Termotester Somedic, Sweden - electrodiagnostic device for evaluation of the function of thin fibers Adelta + C fiber.
- Digital algeziometr Somedic, Sweden - electrodiagnostic device for research of 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 event in 2016:
 - Organization of the 30th Czech and Slovak Neurological Congress in Prague, the chairman of the organization committee was prof. Marusic and participants other physicians of the department
 - The Motol Epilepsy Center was incorporated in the proposal of the European Reference Network for Rare and Complicated Epilepsy (EpiCARE) and was accepted by the council of the member countries of the European Commission in the final evaluation.
 - The Center for Hereditary Attacks was approved as a part of the European Reference Network for Rare Neurological Diseases
 - The Center for Neuromuscular Diseases was approved within the framework of the European Network of Rare Nervous System (EURO-NMD network).
 - Organization of international training days in neuro-otology and regular annual courses of neuro-otology;
 - A total of 37 scientific publications in international journals with IF, 11 articles in domestic journals with IF, 7 articles in peer-reviewed Czech journals and 1 chapters in domestic monography.

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

Head physician: Prof. Ivan Landor, MD, Ph.D.

Senior consultant: Prof. Stanislav Popelka, MD, Ph.D.

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 the spine and paediatric orthopaedics.

The department has 129 beds of which 14 at the ICU for non-septic patients and 2 beds at the ICU for septic orthopaedics, 30 beds for traumatology and 20 beds for septic patients.

A total of 4,859 patients were hospitalised in 2016 and the outpatient care was provided for 52,576 patients. The total number of surgeries performed was 4,584.

Specialised outpatient facilities for:

- Joint replacement
- Surgery of major joints
- Surgery of hand and leg
- Arthroscopy of shoulder, wrist, knee and ankle joint
- Sport traumatology
- Septic orthopaedics
- Rheumatology
- Oncology
- General traumatology

New methods and procedures:

- Research and development of new joints implants in cooperation not only with domestic but also foreign partners;
- New techniques in wrist surgery;
- Implementing of omega splint for a broken pelvis;
- Introduction of minimally invasive surgical techniques for Hallux valgus solution;
- Arthroscopic stabilization - AC luxation - Dogbone button Arthrex;
- Reconstruction of inveterate AC luxation by the tendon graft;
- Introduction of laboratory determination of alpha defensin into the diagnostics of joint implant infection;
- Introduction of rapid determination of alpha defensin Synovasure (lateral flow test) to intraoperative diagnostics of joint implant infection;
- Introduction of leukocyte esterase test in the diagnostics of joint implant infection;
- Introduction of endoscopic method of Meduloskopia in the treatment of chronic osteomyelitis;
- Introduction of Masquelette technique in the treatment of infected nonunions;
- Introduction of vacuum therapy for the treatment of infected defective wounds;
- Introduction of our own method of coating nails with the help of bone cement in the treatment of infected nonunions.

Important event in 2016:

- Prof. David Pokorný, MD - 1st prize in the competition of The Technology Agency of the Czech Republic in the category „Solutions for the quality of life“ for the project „Optimization of the properties of UHMWPE“ - TA01011406;
- The main award of the competition of the Technology Agency of the CR - „Price of the future“ - for the project „Optimization of the properties of UHMWPE“ - TA01011406;
- Prof. David Pokorný, MD - Shoulder total replacement system SMR. International course- life-long learning, cadaver lab. Date: 18. – 19. 1. 2016. Location: Poznań, Poland;

- Prof. Ivan Landor, MD - International Symposium: Revision hip replacement. Date: 21. – 22. 1. 2016 Location: NH Hotel, Prague;
- Harrachov Orthopedic Symposium – 20. – 21. 10. 2016. Location: Orea Resort Sklář, Harrachov 520;
- Organization of regular quarterly surgical courses of implantation of shoulder total replacements taking place on the operating theatres of our department - for participants from Eastern Europe.

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

Head physician: Prof. Jan Štulík, MD

Head nurse: Mgr. Dagmar Šeborová

Basic characteristics:

The centre with nationwide competences is specialized on treatment of injuries and spine diseases, including their consequences in children and adults (acute fractures of the spine and treatment of their consequences, primary and secondary tumors, degenerative diseases, inflammatory diseases, congenital and acquired deformities). In 2016, a total of 1,355 patients were operated, 1,448 patients were hospitalised and outpatient care was provided for 13,419 patients.

Specialised outpatient facilities for:

- Treatment of injuries and diseases of spine
- Scoliosis in children
- Neurology

New methods and procedures:

- New technique of resection - en bloc - of subaxial cervical vertebra;
- En bloc resection of sacrum;
- En bloc resection of thoracolumbar vertebrae;
- Correction of deformities of scoliosis;
- Correction of deformities of kyphosis;
- Spinal osteotomy PSO;
- Axial transsacral fixation;
- Cultivation of osteoblasts from stem cells.

Unique technological equipment:

- Surgical microscope Carl Zeiss
- Source of light + mobile stand
- telescopic system EyeMag
- magnifying glasses EyeMag Smart
- LED lighting EyeMag Light II.

Important event in 2016:

Courses and Congresses:

- AOSpine Principles Course, Trauma and degenerative, Prague, Czech Republic - chairmen

- Aesculap Spine Days, Perspectives in cervical spine surgery, Tuttlingen, Germany - lecture
- X. Brandys symposium, Brandýs nad Orlicí
- Active participation of the physicians of the department on domestic and international conferences.

Awards:

- Zahradníčková prize of the Czech Society for Orthopaedics and Traumatology

Publications:

- Štulík, J. : Cervical spine injury. In: Čech, O., Douša, P., Krbec, M. et al. : Traumatology of the musculoskeletal system, pelvis, spine and nonunions. Praha, Galén, 2016.

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

Head physician: prof. Miloslav Marel, MD, PhD.

Senior consultant: František Petřík, MD

Head nurse: Mgr. Jana Zelenková

Basic characteristics:

The Department of Pneumology is concerned with the diagnostics, treatment, evaluation and research of diseases of the lower respiratory tract with orientation to intensive pneumological care, interventional bronchology, comprehensive care for patients with chronic obstructive pulmonary disease, treatment of patients with cystic fibrosis, oncology including biological therapy, sleep medicine, examination of patients prior to lung transplantation and the treatment of tobacco addiction.

In 2016, a total of 1,642 patients were hospitalized, outpatient treatment was provided for 12,250 patients, bronchoscopy was performed 1,423 times and 1,315 times was given chemotherapy. At the intensive respiratory care unit, a total of 304 patients were hospitalised in 2016, out of which 74 patients (24%) were treated by non-invasive mechanical ventilation and 23 patients (7,6%) by invasive mechanical ventilation.

Specialised outpatient facilities for:

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

New methods and procedures:

- Biological treatment of bronchogenic carcinoma in patients with ALK gene translocation using the crizotinib medication;
- Biological treatment of patients with cystic fibrosis via Kalydeco medication;
- Endobronchial ultrasonography (EBUS) allowing puncture of mediastinal lymph nodes under ultrasonographic control in real time with immediate cytological

evaluation of findings via ROSE (Rapid On Site Evaluation);

- Introduction of bronchoscopic lung cryobiopsy, what is a method that prevents open lung biopsy in some cases;
- Treatment of tracheal stenosis via implementation of biodegradable stents.

Unique technological equipment:

- Ultrasound bronchovideoscope Olympus BF-UC160F
- ICU equipped with modern non-invasive ventilator Philips V60 which can be used also as a portable device
- Measurement of carbon monoxide in exhaled air with the help of Smokerlyzer device to verify non-smoking
- An conference audio-video interconnection of the auditorium hall with the bronchoscopic operating theatre for the purpose of pre- and postgraduate teaching.
- Important event in 2016:
- In cooperation with 3rd Department of Surgery, 1st Faculty of Medicine, Charles University and MUH and Department of Paediatrics, 2nd Faculty of Medicine, Charles University and MUH, a total of 61 patients were included on the waiting list for lung transplantation in 2016 and the transplantation was performed in a record number of 42 patients.
- In the competition for the best original thesis in 2016 of the journal *Studia pneumologica et phthiseologica* won the 1st prize doctor Fila and prof. Marel.
- Prof. Marel is the national delegate for the Czech Republic in the European Respiratory Society.
- Dr. Fila and dr. Valentová Bartáková are the co-authors of the Recommended practices for the diagnosis and treatment of COPD exacerbation and for tuberculosis and potential tuberculosis infection in patients before and after solid organ transplantation or after transplantation of hematopoietic stem cells.
- Dr. Fila is the co-author of the publication in the journal *CHEST* about new biomarker HE-4 (human epididymal protein 4) in cystic fibrosis.
- Prof. Marel was for the fourth time in a row named the best teacher of the 2nd Faculty of Medicine, Charles University and MUH.

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

Head physician: Ass. Prof. Jana Prausová, MD, Ph.D., MBA

Senior consultant: Zdeněk Linke, MD

Head nurse: Gabriela Žáková

Senior radiology assistant: Alena Čuprová

Basic characteristics:

The department provides complete care for oncological patients in the field of anti-tumourigenic pharmacotherapy and radiation therapy. It belongs to Complex oncological centres in the Czech Republic that provide highly specialised care, in 2014 the department successfully passed the audit. The department is accredited for specialised education in clinical oncology and radiation oncology.

In 2016, a total of 230,011 patients were treated on the outpatient basis, 2,945 patients were newly admitted (of which 1,748 to chemotherapy and 1,197 to radiotherapy), a total of 2,919 patients were hospitalised in 2016 on both inpatient stations. The number of irradiated fields was 145,950, the number of brachytherapy applications was 869 and more than 11,000 applied cycles of chemotherapy.

Furthermore, an unique radiotherapy for the prostate cancer with grain application was newly performed in 46 patients. Besides that, 34 paediatric patients from the Department of Paediatric Haematology and Oncology underwent radiotherapy.

Specialised outpatient facilities for:

- Dispensary care for patients after the anti-tumourigenic 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 of the treatment of malignancies with the introduction of new molecules of cytostatics, new combinations of cytostatics and biological therapy. An immunological therapy was newly implemented. Improvement of symptomatic therapy, improvement of pain treatment, monitoring of nutrition in patients, improvement of nutritional supplementation, use of growth factors for the treatment and prevention in order to reduce the number of blood elements during treatment of cancer.
- Introduction of central venous access (ports) and peripheral PICC or midline in all patients with chemotherapy applications.
- Cooperation in multicentric international clinical studies and grants with an international participation in the field of treatment of solid tumours and haematologic malignancies.
- Cooperation with genetic oriented departments when searching for families with a genetic risk of malignancies.
- Cooperation with the Department of Immunology and the Department of Urology, MUH in the application of SNP01 medication - Centre for the treatment of prostate cancer.
- Improvements and full use of IMRT method (intensity modulated radiotherapy) which allows higher amount of radiation in the target spot within the examination of healthy tissues.
- Implementation of IGRT techniques (image guided radiotherapy), based on the control of current position of patient in radiotherapy and the possibility of its correction according to the reference position for the simulation of radiation plan. The use of dynamic wedges on linear accelerators allows better 3D (three dimensional) planning. Option fusion of images from MRI and CT examinations with the planning CT images in order to create better radiation plan.
- Improvement and full use of fractionated stereotactic radiotherapy. The department has been performing prostate brachytherapy since 2015.

Unique technological equipment:

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

Important event in 2016:

- The department participated in organization and lecturing at the 7th PragueOnco colloquium. It actively participated in the organization of Uro-oncologic Symposium and other Czech symposia.
- The department annually organizes Symposium of Radiotherapists, oncologists, medical physicists and laboratory technicians – Days of Motol. In 2016, the XVIII. Days of Motol were organized in collaboration with the Department of Oncology in Thomayerova Hospital, Department of Surgery, 1st Faculty of Medicine, Charles University and MUH, Department of Paediatric Surgery, Centre for Spinal Surgery and the Department of Urology, 2nd Faculty of Medicine, Charles University and the MUH.
- Physicians actively participated in international events ASCO, ESMO with their abstracts and posters.
- Head physician of the department is the president of the Czech Oncological Society of the Czech Medical Chamber of J.E. Purkyně.
- The department significantly contributes to the therapeutic results of medication registries of the Czech Republic in the field of biological medicine treatment of cancer therapy.
- The department is an active member of the Sarcoma Group EORTC - participation in academic clinical studies, centre for the treatment of gastrointestinal stromal tumour
- Kubáčková, MD et al.: two publications - Rare diseases in brief and Rare tumours in oncology.
- The department is involved in the grant of the Czech Science Foundation (GACR): Nanofiber systems for local drug release in the treatment of cancer, in cooperation

with the Institute of Macromolecular Chemistry of the Academy of Science of the Czech Republic.

- The department participates in the 4th EU Health Program: 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 1st and 2nd Faculty of Medicine, Charles University and the MUH).
- Academic Study: Survival Outcomes in Adolescent and Young Adults with Colorectal and Pancreatic Cancer – Jewish General Hospital, Montreal, QC, Canada, Institut Paoli-Calmettes, Marseille, France, Department of Oncology, 2nd Faculty of Medicine and the 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

Head nurse: Mgr. Jana Boháčová

Basic characteristics:

The department of Urology provides therapeutic and preventive care in the full range in the field of adult urology with the nationwide and also international scope. It is specialised in surgical treatment of cancer of the urogenital tract including the subsequent oncological treatment. It belongs to top workplaces in the treatment of lithiasis and laparoscopy. It is the only workplace for surgical conversion of sex in the Czech Republic.

In 2016, the department performed 26,465 outpatient examinations, 1,975 hospitalisations and 1,739 surgeries.

Specialised outpatient facilities for:

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

New methods and procedures:

- Laparoscopic radical cystectomy;
- Enhancement of nephrectomy technique performed by using the single-port approach (LESS nephrectomy);
- Enhancement of laparoscopic technique of radical prostatectomy;
- Laparoscopic resection of the kidney tumour;
- Improvement in endoscopic treatment of lithiasis - a technique of percutaneous mini-nephrolithotomy, percutaneous nephrolithotomy in the supine position, flexible ureteroscopy etc.;
- Enhancement of shunt surgeries after cystectomy;

- Use of new imaging methods for diagnostics of the urinary bladder tumours (NBI = „narrow band imaging“) in common use;
- Neurostimulation in the treatment of urgent urinary bladder symptoms;
- Introduction of microsurgical techniques in andrologic surgeries (varicocele surgeries, vaso-vasoanastomosis etc.);
- Use of Ho:YAG laser in surgical interventions;
- Transurethral enucleation of prostate using morcellator.
- MRI / USG fusion of prostate biopsy

Unique technological equipment:

- Ho:YAG laser
- devices for NBI (“narrow band paging”), fluorescence cystoscopy
- devices for LESS
- devices for miniPNL
- 3D laparoscopic System Einstein Vision
- Piranha endoscopic morcellator
- Toshiba Aplio 500 sonography device for the MRI / USG fusion prostate biopsy

Important event in 2016:

- Workshop – Basic laparoscopic course for urologists 22. 9 -23. 9. 2016;
- Completion of the reconstruction of operating theatres – there are now available three operating theatres equipped with the latest technology, enabling online broadcasts of surgical procedures.

Common examination and therapeutic units

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

Head physician: Prof. Miloslav Roček, MD, FCIRSE

Senior consultant: Radek Pádr, MD

Head of RA: Mgr. Tomáš Schilla

Basic characteristics:

The Department of Radiology performs all X-ray, sonographic, mammographic and angiographic examinations, computed tomography and magnetic resonance. In 2016, a total of 268,743 examinations were performed at the department, of which 196,421 for adult patients and 72,322 for paediatric patients. That is a 4% increase compared to the year 2015. The number of performances increased in all modalities including MR and CT workplaces. A total of 224,718 patients were examined at the department in 2016, of which 66,352 patients were hospitalized and 158,366 were treated on outpatient basis. A total of 2,210,835 exposures were performed.

Specific features of the department:

- In 2016, an exchange of the skiagraphic device was carried out at the Emergency Department, MUH, where an unique Adora device by Canon was purchased. Reconstruction of the new CT unit was launched.

- The entire Department of Radiology performed an internal clinical audit followed by an external audit at workplaces with ionizing radiation sources and an update of local radiological standards was launched.

Unique technological equipment:

- Magnetic resonance - 4 devices: examination in its whole range, including spectroscopy
- CT - 3 devices with 64 rows of detectors, CT Toshiba Aquilion One with 320 rows
- Toshiba Infinix angiography
- Mammography, breast sonography, stereotaxy, vacuum biotom
- Sonography in children and adults, Doppler sonography
- 6 fully digitized skiagraphies, new modern skiagram for traumatology Adora by Canon
- Mobile X-ray unit DR Fuji Go - 2 pieces
- New methods and procedures – unique technological equipment:
- CT angiography, 3D VR visualization, CT cardio, CT coronary angiography;
- CT imaging of VOL data for neuronavigation, ENT navigation and stomatology;
- MR - new opportunities for examination of blood vessels, heart function tests, tractography, T2 relaxometry, examination of uncooperative patients, spectroscopy;
- Prenatal ultrasound and MR diagnostics;
- MAMO SONO centre - ductography, cyst puncture and core cut biopsy under ultrasound control, puncture by Vacora device;
- Radio-frequency ablation and chemo-embolisation of metastases in the liver and lungs;
- Implantation of aortal stentgrafts (also fenestrated), cerebral thrombectomy, subintimal recanalisation of peripheral arteries, treatment of acute and chronic deep venous thrombosis, treatment of vascular accesses to haemodialysis;
- Treatment of cerebral malformations in both children and adults;
- Interventions on the bile ducts, spondyloplasty and vertebroplasty;
- Interventions under CT sciascopy;
- Ultrasound equipment Toshiba Aplio with software enabling the use of diagnostics with the help of contrast agents, especially for dynamic diagnostics of focal lesions mainly in liver, the liver are being examined also by elastography;
- Extended use of dictation systems;
- Polycom device, the department performs conferences and consultations with other departments within the Czech Republic and abroad.
- Implementation of conference system enabling monitoring of surgeries;
- Establishment of Arterial spin labelling as a recent method for visualizing of cerebral perfusion;
- Software for Toshiba APLI 500. Super Microvascular Imaging (SMI) allows accurate detection of microvascular tissue structure.

Important event in 2016:

- The department organized an international school of radiology – 5th Prague European Tutorial of Radiology which lasted for two weeks.
- The VI. Motol Day of Paediatric Radiology with large multidisciplinary participation was organized in the MUH.

- Organization of multidisciplinary seminar Manchester Triage System (prof. Susanne Rienmüller, Graz) in June.
- Within the International Day of Radiology, an open door day for children and parents at the paediatric section of the Department of Radiology was organized on 6th November.

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

Head physician: Prof. Milan Macek, MD, Ph.D.

Senior consultant: Markéta Havlovicová, MD

Senior laboratory technician: Mgr. Hana Strouhalová

Basic characteristics:

This department (DBMG) provides a wide range of preventive and diagnostic medical care in the field of medical and molecular genetics. It determines the diagnostics of selected congenital developmental disorders, hereditary tumours, neurodegenerative diseases in children and adults, including disorders of mental development in both prenatal and postnatal periods. At the same time the DBMG cooperates with other departments of the Motol University Hospital in solving of subsequent genetic issues (Department of Obstetrics and Gynaecology, Department of Paediatrics and other). In 2016, the outpatient facilities of our department provided consultations for 10,457 patients / 5,945 families. The laboratories of DBMG performed a total of 6,047 examinations, out of which 422 examinations were prenatal.

The department solves projects in the field of biomedicine research, it participates in the undergraduate, postgraduate and specialising education of physicians and health care professionals.

Specific features of the department:

- Within the DBMG was established the National Coordinating Centre for Rare Diseases in the MUH - Ministry of Health of the Czech Republic Bulletin no. 4/2012 from 28. 5. 2012 (NCCRD) and confirmed for another term in July 2015. Also, the Centre for Cystic Fibrosis, MUH (centre for the diagnostics and treatment of paediatric and adult patients with CF) was established in cooperation with the Department of Paediatrics – Ministry of Health of the Czech Republic Bulletin no. 4/2012 from 28. 5. 2012. Since 2011, the department is also a part of the important national research centre - „National Centre for Medical Genomics“.

Specialised outpatient facilities for:

- Prenatal genetic consulting
- Neurogenetic consulting
- Genetic consulting for sensoric disorders and non-syndromic deafness
- Cardiogenic consulting
- Genetic consulting dealing with dysmorphology
- Genetic consulting for couples with reproductive disorders
- Genetic consulting for patients with insufficient intellectual and autistic spectrum disorders

- Genetic consulting for thrombophilic conditions
- Genetic consulting for gastroenterology and hereditary pancreatitis
- Genetic consulting for cystic fibrosis – screening of CF in newborns in cooperation with the Centre for Cystic Fibrosis of the MUH

New methods and procedures:

- We continue with an extension of the diagnostics of new microdeletion syndromes by the method of FISH and aCGH. A diagnostics without the need of direct cultivation of the amniotic / chorionic cells is also being extended.
- We continuously put stress on the accuracy of the diagnostics of submicroscopic aberrations by array CGH method with the help of different types of oligonucleotide chips (eg. Illumina, Agilent) including the most accurate commercially available chips for aCGH - oligo 4x180K with locuses for testing of the loss of heterozygosity, important e.g. for hereditary tumour syndromes. We manage to reduce the time of examination, in ideal case it is ready in up to two days after the removal of the material. Also an algorithm for cases where the method cannot reliably distinguish between benign and pathologic findings was developed.
- Since 2013, the method of SNP-aCGH is available also for prenatal diagnosis, not only from cultivated, but also from native (i.e. freshly collected) prenatal material.
- Accreditation of the Czech Accreditation Institute – ČIA 15189 is granted to all cytogenetic and molecular cytogenetic methods, also the international EQA is regularly being conducted.
- We extended the DNA diagnostics by the method of DNA sequencing according to Sanger or by method of fragmentation analysis on more than 120 genes responsible for genetically determined syndromes with mental retardation / autistic spectrum disorders, ataxia, dystonia, muscular dystrophy, myopathy, growth disorders, osteochondrodysplasia, craniosynostosis, disorders of sex development, syndromes with tumour predisposition, organ and sensory disabilities, thrombophilia, rare diseases and genetic syndromes. Since 2016, a robotized process for Sanger sequencing samples and for libraries of NGS analysis is being used.
- We perform testing for imprinting disorders in the PWS / AS and BWS / RSS syndromes.
- Gene deletions / duplications or microdeletion syndromes are being examined via the method of MLPA.
- Introduction of diagnostics of the syndrome of hereditary breast and ovarian cancer, Lynch syndrome, neurofibromatosis, RASopathies, Duchenne muscular dystrophy by NGS methods. In 2016, a total of 200 patients with suspicion of hereditary breast and ovarian carcinoma, 112 patients with neurofibromatosis or rasopathy and a total of 35 HNPCC patients were examined via these methods. We have diagnosed dozens of rare genetic diseases with the help of exome NGS sequencing.
- We have successfully met the requirements of the external international interlaboratory quality control of molecular genetics laboratories for 14 different diagnoses, Sanger DNA sequencing and NGS.
- New approaches for better accurate interpretation of the a priori mutation of unknown significance were introduced.

- Within the National Coordination Center for Patients with Rare Diseases, a significant number of patients with rare diseases were examined via exome new generation sequencing with the help of HiSeq2500 platform by Illumina and kits for the use in libraries FocusedExome by Agilent or TruSightONE by Illumina.
- In 2016, we continued with scanning of the faces of patients with different genetic diagnoses to ensure the most accurate description of the phenotype of patients with a rare disease and the need for its „digitization“.
- In collaboration with the Vinohrady University Hospital and the General University Hospital in Prague a newborn screening for cystic fibrosis is conducted for the whole country (cca. 50,000 newborns).
- In the field of assisted reproduction, a method of cryopreservation of ovarian tissue for oncological patients prior to the treatment is being implemented in collaboration with the Department of Obstetrics and Gynaecology.

Unique technological equipment:

- Special platform Agilent Technologies for aCGH evaluation
- Peltier PTC 100 thermocycler
- Hanabi - device for preparation of uniformly distributed metaphases for molecular cytogenetics
- Maylor-Wharton Cryogenics, type K10 with a capacity of 10,000 doses
- Laminar box by Faster, SafetyFast Classic, class II biohazard
- MagCore Nucleic Acid Extractor for DNA / RNA isolation
- HiSeq 2500 by Illumina, MiSeq by Illumina and MiniSeq by Illumina for NGS
- CBOT, Covaris S200, Agilent Bravo pipettor for NGS
- External temperature and CO2 concentration analyser enabling cultivation of conditions unification in all incubators (InControl 1050)
- Cryptor Compact Plus by Thermo Scientific for biochemical screening in pregnant women

Important event in 2016:

- Prof. Milan Macek, MD, the head of the department, is the National Coordination Center for Rare Diseases coordinator managing and guaranteeing the incorporation of a number of MUH departments in the European Reference Networks (ERN) for rare diseases.
- http://ec.europa.eu/health/rare_diseases/european_reference_networks/erf_en
- https://ec.europa.eu/health/rare_diseases/european_reference_networks_cs
- <http://vzacni.cz/ern/>
- Pourová, Radka. Genetics of hearing impairments. In: Dršata, Jakub; Havlík, Radan et al. Phoniatics: Hearing. Havlíčkův Brod: Tobiáš, 2015, p.53-61. ISBN: 978-80-7311-159-5; www.tobias-ucebnice.cz/foniatrie-sluch/; Monograph awarded: Award for best publication of the Czech Society of Otorhinolaryngology and Head and Neck Surgery CzMA JEP
- Permanent cooperation with the Czech Association for Rare Diseases with the purpose of raising awareness of rare diseases - related articles in regular newsletter of the Czech Association for Rare Diseases, press releases on the website <http://www.vzacna-onemocneni.cz/>, shared with NCCRD.

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

Head physician: Prof. Richard Průša, MD

Senior consultant: Jana Čepová, MD, MBA

Senior laboratory technician: Mgr. Martina Bunešová

Basic characteristics:

The department's laboratory provides over 220 different laboratory examinations. A daily average is about 2,099 biological samples, i. e. 647,383 examinations per month in a 24 hour three shift operation. A number of examinations (MTX, cyclosporine A, tacrolimus, sirolimus, lead, platinum, antimycotics, busulfan, IGF-1 etc.) is performed also for other health institutions. A total number of performances in 2016 reached 7,768,599 which is by 5% more than in 2015. Other sections of the department are specialised in outpatients facilities focused on hyperlipoproteinemia, disorders of bone metabolism, nutrition disorders in terms of obesity and malnutrition. In 2016, a total of 4,000 patients were treated at outpatient basis.

Specialised outpatient facilities for:

- Treatment of hyperlipoproteinemia
- Dealing with bone metabolism
- Nutrition issues

New methods and procedures:

- 2014 - Introduction of a highly sensitive determination of thyroglobulin TGL hs
- 2014 – Change in determination of IGF-1 and IGFBP3 (immunoradiometric method IRMA) has been replaced by automated chemiluminescent (CLIA)
- 2014 – At the Emergency department for Adults, two new methods of beta-hCG and D-dimer were added to the immunochemical analyzer AQT90
- 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 automatic analyzers Advia 1800 – 2x
- 2015 - Examination of hemoglobin in faeces via sensitive quantitative immunochemical determination
- 2015 - Examination of 1,25-dihydroxyvitamin D (calcitriol) in serum using the chemiluminescent immunoassay
- 2015 - A new highly sensitive method for the determination of estradiol
- 2015 - Abolition of TPA examinations and replacement by CYFRA 21-1
- 2015 - A new highly sensitive method for the determination of troponin (hs-cTnI)
- 2016 - A new method for determination of glycated haemoglobin on the principle of capillary electrophoresis
- 2016 - The transfer of the SHBG determination to automated immunoassay analyzer Centaur XPT by Siemens with an automatic calculation of free androgen index (FAI)
- Unique technological equipment:

- Gas chromatograph
- Analyzer for measurement of chloride in sweat
- New blood gas analyzer Rapidlab 1245
- ABL 837 Flex Radiometer (1x neonatal intensive care unit - a reduction in blood volume necessary for the determination of neonatal bilirubin of 35 ul)
- ABL 825 Flex Radiometer (2x ARKD2 - Replacement Nova SP CCX)
- Liquid chromatograph Agilent 1260
- Exchange automated ADVIA 1800 new
- IQ 200 ELITE analyzer and iChem VELOCITY analyzer for urine analyzing
- ELISA microplate washer
- Reverse osmosis system
- Nicolet IS 10 FTIR spectrometer (cost of equipment with accessories 1 087 790,00 CZK)
- LIAISON XL analyser by DiaSorin
- Biochemical analyzer: Cobas Integra 400 Plus (Roche) - replacement for the old type of the same analyzer
- 2 devices ABL 800 Radiometer from company Radiometer for the Department of Anesthesiology and Resuscitation
- 2015 – ADVIA 1800 automatic analyser– 2x
- 2015 - OC Sensor IC analyser for quantitative determination of hemoglobin in faeces
- 2015 - Semi-automatic analyser Hydrasys for electrophoresis
- 2015 - A2O Advance osmometer
- 2015 - SP pHox Ultra 3x
- 2015 - AQT90 FLEX immunochemical analyzer for the Emergency Department
- 2015 - Installation of 67 professional hospital portable glucose meters StatStrip with full connectivity
- 2016 - 2 new immunochemical Siemens Centaur XPT analysers
- 2016 - Roche Cobas 6000 immunochemical analyzer - two modules e601
- 2016 - Abbott Architect i4000SR immunochemical analyzer
- 2016 - Advanced A2O automatic osmometer by Advanced Instruments
- 2016 - Osmostation 6060osmometer by Arkray
- 2016 - VITROS 4600 biochemical analyser by Johnson & Johnson (biochemical analyzer with a maximum capacity of about 850 tests / hour, dry chemistry principle - measurement of microslides, unique technology which allows direct spectrophotometric determination of conjugated and unconjugated bilirubin)
- 2016 – Implementation of deionized GORO water maker and construction work related to it
- Important event in 2016:
- 28. 1. 2016 – The Menhir of professor Masopust (a scientific conference, 100 participants from the Czech Republic)
- 12. 10. 2016 - conference Glucocorticoid-induced Osteoporosis (a scientific conference, 105 participants from the Czech Republic)
- Number of publications in total: 15, of which with IF: 8

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

Head physician: Prof. Jiřina Bartůňková, MD, MBA

Senior consultant: Prof. Anna Šedivá, MD

Senior laboratory technician: Bc. Anna Skalická

Basic characteristics:

The department of immunology provides full care for both paediatric and adult patients with immunopathological conditions including clinical and laboratory examinations as well as dispensary care. Besides the outpatient examination and treatment in the full extent of allergology and clinical immunology, the Department of Immunology provides also a regular therapy and infusion application of the indicated pharmaceuticals in serious immune disorders for both paediatric and adult patients. Since 2012, a part of the Department of Immunology are the Vaccine Centre and the CSF laboratory. The department serves as a basis for pre- and postgraduate education in immunology and is also concerned with research in the same discipline.

The outpatient facilities in 2016 examined 15,181 patients and the laboratories carried out 226,908 examinations of 34,915 patients, in the CSF laboratory other 19,131 examinations in 2,889 patients.

Specialised outpatient facilities for:

- Immunodeficiencies
- Allergies, autoinflammatory and autoimmune diseases
- Therapy of immunopathological conditions in children and adults
- Specialized premises for the application of antitumourigenic vaccines within our clinical studies
- Vaccination centre

Specialised centres:

- Centre for treatment of hardly treatable asthma (Omalizumab, a monoclonal antibody anti IgE)
- Centre for treatment of hereditary angioedema (C1inhibitor substitution, inhibition of bradykinin)
- Center for diagnosis and treatment of immunopathological conditions of the Department of Immunology, 2nd Faculty of Medicine, Charles University and Motol University Hospital
- Specialized laboratory:
- CSF laboratory (in collaboration with the Department of Neurology)

New methods and procedures:

- Extension of diagnostic methods for severe immune disorders mainly in the methods of cellular immunity examinations;
- Functional testing of parameters of innate immunity
- Intracellular examination of pro-inflammatory cytokines IL-1, IL-6, TNF
- Expansion of equipment in supervision of subcutaneous immunoglobulin home

- applications;
- Clinical studies of immune-globulin preparations;
- Clinical study of modern targeted treatment of immune pathological conditions
- Unique technological equipment:
 - Completely equipped laboratory for flow cytometry including the sorter
 - Microscopic workplace including confocal microscope and scanning cytometer
- Important event in 2016:
 - Continuous development of an individual application of unregistered product DCVAC within the hospital exceptions for medicines of modern therapy §49b) and §49c) of the Act on Pharmaceuticals;
 - Management of Immunodeficiency Centre within the global network of Centres of Jeffrey Modell Foundation, USA;
 - Organisation of international summer school ESID (European Society for Immunodeficiencies) Eastern Spring School in Primary Immunodeficiencies in May 2016;
 - Continuous development of FOCIS Centre of Excellence (Federation of Clinical Immunology Societies);
 - Solutions of the projects if institutional support in Motol University Hospital; Solution of the grants of the Agency for Healthcare Research of the Czech Republic
 - Solutions 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;
 - A total of 15 foreign publication with IF, 7 publications in Czech language, 2 chapters in a book;
 - Inclusion in the scheme of the European Reference Networks.

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

Head physician: Ass. Prof. Pavel Dřevínek, MD, Ph.D.

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 the ATB therapy, differential diagnosis of infections and infectious complications. It cooperates in monitoring of the incidence of nosocomial infection and it monitors the abnormal profiles of ATB resistance. The department participates in the activities of the Independent Quality Control Department in form of preparation, implementation and evaluation of prescribed audits focused 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 of the incidence of infections caused by *Clostridium difficile*. Through representatives of the Central Coordination Group of the National Antibiotic Program and the Subcommittee for Antibiotic Policy of the Czech Medical Chamber of J. E. Purkyně, the department is actively involved in the implementation of antibiotic policies in the country. The department collaborates on solving national projects CELL and FUNGISKOPE focused on the issues of invasive fungal infections. Particular emphasis is placed on evaluating of the latest

diagnostic methods and their implementation into clinical use with the aim of further improvement of the microbiological diagnostics.

In 2016, the department reported a total of 94,494,706 points.

New methods and procedures:

- Diagnostics (i) based on PCR: panel 16 respiratory viruses, panel of 7 originators of STD, panfungal PCR, micromycetes and candidates, pan-bacterial PCR, pertussis, originators of gastroenteritis including enterohaemorrhagic *E. coli* (ii) using immunochromatography: astroviruses
- Detection of virulence factors and resistance genes: (i) PCR: MRSA and PVL in *S. aureus*, (ii) MALDI-TOF: carbapenemase
- Molecular typing: *C. difficile* (for the needs of the Czech Republic including national surveillance), *P. aeruginosa* and complex *B. cepacia* (chronic infections in patients with cystic fibrosis)
- Demonstration of neutralizing of antibodies against pharmaceuticals of type beta-interferon for RS centres of the Czech Republic;
- Cooperation with the Department of Internal Medicine, Motol University Hospital in introducing of fecal transplantation in patients with recurrent colitis induced by *C. difficile*.

Unique technological equipment:

- Insulator of nucleic acids for PCR Qiacube diagnostics
- JOUAN and BENTLEY anaerobic boxes
- MALDI-TOF: mass spectrometry equipment for quick and highly reliable identification of bacteria and mycosis.
- PCR cyclers with high resolution melting analysis
- System for the extraction of bacterial and fungal DNA (NA Select)
- BD MAX fully automated system designed to molecular diagnosis of a broad spectrum of infectious originators

Important event in 2016:

- Active participation in international conferences: ECCMID Amsterdam; European Congenital Cytomegalovirus Initiative (ECCI), European Congenital Cytomegalovirus Initiative (ECCI) Lisbon
- Co-organization of interdisciplinary conference „Clostridial Day“ in the National Institute of Public Health, Prague, co-organization of Hradec virological days and organization of specialized courses in the field of medical microbiology
- The Price „Creative Award of the Year“ granted by the director of MUH for the project „New Microbiological Diagnosis of Serious Non-cultivation Cases“
- Publication activity: 14 international scientific articles, 1 home impacted publication, 2 articles in Czech peer-reviewed journals, 1 chapter in Czech memoir.
- Ass. Prof. Pavel Dřevínek, MD, PhD. was the head of the European project “The Standards of Care” of the European society of Cystic Fibrosis.
- Mgr. Marcela Krůtová was appointed to 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

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 methods of classical histology and cytology with other subsequent special laboratory methods. In 2016, the department examined 28,018 patients, including 459,244 histological and cytological preparations. In the laboratory of molecular pathology, a total of 27,064 examinations in 2,423 patients were conducted by flow cytometry, PCR, FISH and predictive IHC. The department is both pre- and postgraduate teaching workplace. The autopsy section of the department has educational and supervisory functions in the frame of the whole hospital.

Specialised laboratories:

- Electrone microscopy
- Immunohistochemistry
- Diagnostics 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 have continuously implemented new immunohistochemical methods for tumour diagnostics, e.g. GATA3 in mammary gland carcinoma
- Implementation of new colouring techniques for the proof of bilirubin within the biopsy lab;
- Implementation of the methodology for next generation sequencing (NGS) on paraffin tissues of ovarian carcinoma.
- New colouring methods in pulmonary cytology, which have significantly shortened the investigation process.

Unique technological equipment:

- Cyclery for real-time PCR
- MiSeq device for methodology for „Next Generation Sequencing“ panel TruSight Tumour – detection of changes in 26 genes
- Eight-capillary genetic analyser
- New colouring and installation device which has simplified working in the laboratory and has significantly reduced the concentration of toxic substances in the lab.

- New autotechnicon tissue processors for drainage, brightness and saturation of the tissues, which have improved the quality of the preparations.
- Idylla Biocartis device allowing the detection of specific gene changes. It is being used in predictive diagnostics of patients with colorectal ca, melanoma, histiocytosis, Langerhans cells and brain tumours.

Important event in 2016:

- The project of institutional support of the Ministry of Health of the Czech Republic continues at a high level in 2016, the total IF for year 2016 was 143.41.

Department of Clinical Haematology, Motol University Hospital

Senior consultant: Ivana Hochová, MD

Senior laboratory technician: Blanka Hájková

Basic characteristics:

The department provides enhanced hemato-oncological care according to the criteria of the Czech Society of Haematology of the CzMA of J. E. Purkyně. The department is divided into two parts, laboratory and clinical part. The laboratory performs routine and special haematologic examinations for the Motol University Hospital with supra-regional powers. In 2016, the laboratory conducted 842,000 performances. The laboratory is the reference lab for the diagnostics of acute paediatric myeloid leukaemia and myeloproliferative conditions in children. In adult haematology, the attention is focused on morphological diagnosis of the myelodysplastic syndrome.

The clinical part of the department includes an outpatient facilities for paediatric and adult ward. A part of the adult outpatient centre is a day care centre responsible for applications of blood preparations and chemotherapy. A total of 12,275 patients were examined in 2016 at the outpatient basis.

New methods and procedures:

- Procedures for functional analysis of platelets
- Introduction to the methodology of the evaluation of new antithrombotic pharmaceuticals
- More accurate and faster diagnostics of Willebrand's disease
- Morphological laboratory of the department participates in the International Study of the treatment of paediatric acute lymphoid leukemias Protocol – Interim ALL- BFM 2000
- Department of Clinical Haematology participates in the project of the European register of patients with myelodysplastic syndrome (EUMDS), which is organized by European LeukemiaNet in cooperation with the European Association of Haematology.
- The department is actively involved in activities of CZECH MDS GROUP and twice a year it organizes nationwide morphology seminars.
- An international study is under way at the department - Open-label, randomized, parallel-group, active controlled, multi-centre, non-inferiority study of dabigatran etexilate versus standard of care for treatment versus thromboembolism in children from birth to less than 18 years of age: The DIVERSITY study Clinical Phase IIb / III.

Unique technological equipment:

- Coagulometer (ACL) for the examination of special coagulation tests
- Device for platelet function analysis (Innovance PFA 200)
- Sysmex XE-Alpha N, Sysmex XE – 1000 haematologic lines
- Microscope (Olympus, Leica) with camera equipment

Important event in 2016:

- The department further develops Internet application of morphological atlas - „Atlas of Myelodysplastic Syndrome“ on the MDS CZECH GROUP web page.

Department of Clinical Psychology, Motol University Hospital

Head psychologist: Mgr. Zuzana Kocábová

Basic characteristics:

The department employs 30 clinical psychologists (full-time and part-time employees) who work in the paediatric as well as adult section and provide preventive, diagnostic, psychotherapeutic and rehabilitation care for in- and outpatient patients and their families. In 2016, the department treated 5,000 patients (that is a 28 % increase compared to the year 2015). The department is accredited by the Czech Ministry of Health and it provides theoretic-practical as well as practical issues of pre-attestation stage in the field of Clinical Psychology and Paediatric Clinical Psychology.

New methods and procedures:

- Development of cooperation with other departments specialized in psychological care of patients in the transplantation program and further development of the care of these patients;
- Participation in an international project aimed at the development of competences in children undergoing cystic fibrosis treatment;
- Neuropsychologic team has successfully continued in the development of neurodegenerative disorders diagnostics and examination of patients in the epileptological program;
- Investigation of the development level of preterm infants within the Center of Complex Care continues;
- Psychologists continued to develop psychological diagnostics in paediatric patients with autistic spectrum disorders;
- Psychological care for Spinal unit patients has been established and developed;
- Specialized family therapy continues.

Important event in 2016:

- The Department of Clinical Psychology has received an accreditation of the Ministry of Health of the Czech Republic for organization of educational program of the certified course „Paediatric Clinical Neuropsychology“.
- Employees of the department actively participated in Czech and international professional conferences, they were involved in international research projects and they published their theses in major scientific journals. The Department of Clinical Psychology organized 10 scientific seminars on psychological topics.

Blood Bank Department, Motol University Hospital

Senior consultant: Eva Linhartová, MD

Senior laboratory technician: Mgr. Martin Matějček

Basic characteristics:

The Blood Bank Department is one of the CITD at the Motol University Hospital. It provides purchasing, storing and expedition of all types of transfusion preparations for patients of MUH. In 2016 there was dispatched a total of 33,104 T.U. of all types of transfusion preparations, of which 20,449 T.U. were erythrocytic preparations, 9,285 T.U. plasma, 3,218 T.U. thrombocytic preparations and 152 T.U. granulocytic TP. Compared to the year 2015, there was a slight decrease in the consumption of blood preparations for all types of preparations, except for granulocyte transfusion preparations.

The Blood Bank Department carries out basic and special immuno-haematological examinations according to the requirements of medical workplaces, prenatal examinations for pregnancy counselling for the Department of Obstetrics and Gynaecology and if needed, it procures transfusion preparations for intrauterine and replaceable transfusion. In 2016 were carried out following numbers basic pretransfusion examinations: 9,401 blood group tests, 20,575 antibody screenings and 41,561 compatibility tests. The number of specialized immuno-hematological examinations raised compared to 2015 to 1,519. There are no major changes in prenatal examinations. The number of irradiations of blood transfusion preparations was almost the same as in the year 2015 - 9,476 irradiations.

In the field of autologous donations, the donations of autologous whole blood are performed mainly for orthopaedic patients of MUH, Department of Urology, Charles University, 2nd Faculty of Medicine and MUH, but also for patients of Hospital Na Homolce. In 2016, a total of 251 autologous donations and 19 leukapheresis were carried out.

The department provides teaching within the 2nd Faculty of Medicine including pre- and postgraduate education in the field of transfusiology for physicians and other employees.

Specific features of the department:

- Laboratory section
- Stretch apheresis and autologous donations
- Irradiator for the irradiation of blood preparations
- New methods and procedures:
- Examination via automatic analyzer is being routinely used
- Unique technological equipment:
- Automatic analyzer Erytra

Important event in 2016:

- Separation (leukocytapheresis) in patients involved in clinical studies
- A permission to perform autologous separations of peripheral blood stem cells granted by the State Institute for Drug Control

Department of Rheumatology, Motol University Hospital

Senior consultant: Rudolf Horváth, MD, Ph.D.

Senior laboratory technician: Indira Jankovičová

Basic characteristics:

The Department of Rheumatology provides complex diagnostics, treatment and dispensarisation of paediatric and adult patients with inflammatory rheumatic diseases with a focus on juvenile idiopathic arthritis, rheumatoid arthritis, ankylosing spondylitis and other seronegative spondyloarthritis, further it is psoriatic arthritis, systemic connective tissue diseases and primary vasculitis. The department is actively involved in consulting activities within the MUH and it provides advisory for other Prague hospitals and also workplaces outside Prague. In 2016, a total of 4,662 outpatient examinations, 1,808 minimal contacts, 1,054 telephone consultations, 623 specialized ultrasound examinations were performed and a total of 130 professional consultations were conducted at the inpatient clinics of the MUH.

Specialised outpatient facilities for:

- Adult rheumatology
- Paediatric rheumatology
- Musculoskeletal ultrasonography
- Centre of biologic therapies in rheumatologic indications for children and adults
- New methods and procedures:
- The portfolio of biological medication being used was extended by biosimilar TNF α inhibitors and biological medicine with different mode of effect than the TNF α blockade.
- Introduction of the „bedside“ diagnostics and dynamic monitoring of the activity of inflammatory rheumatic diseases using a musculoskeletal ultrasonography.
- Within the projects of institutional support at the Motol University Hospital, an ultrasound examination of cartilage damage in inflammatory and non-inflammatory rheumatic diseases was introduced.
- We newly perform an ultrasound-guided puncture 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 event in 2016:
- The Department of Rheumatology of Motol University Hospital became part of a significant international organization PRINTO (Paediatric Rheumatology International Trials Organisation).
- The employees of the department regularly contribute with their lectures at scientific domestic congresses organized by the Czech Rheumatologic Society of the CzMA of J. E. Purkyně.
- The department actively participates in the presentation of the ATTRA registry in

the Czech Republic at the EULAR and ACR international congresses.

- In 2016, one original study with IF 4 was published in a foreign journal and a total of 4 theses were printed in domestic peer-reviewed journals.

Central Operating Theatres - Paediatric Part, Motol University Hospital

Head nurse: Bc. Alice Podařilová

Senior physician: Vladimír Mixa, MD, Ph.D.

Basic characteristics:

In addition to the cardiac surgeries, the Department of Central Operating Theatres for children concentrates all interventions of all surgical as well as non-surgical disciplines from the paediatric departments of the hospital in the field of ophthalmology, stomatosurgery, orthopedics and ENT, it ensures also surgeries in adult patients. A total number of performed surgeries in 2016 was 7,462.

New methods and procedures:

- permanent expansion of endoscopic and laser techniques
- broader use of navigation in neurosurgery
- pilot transmission from the operating microscope to the room of the head physician and to the internship room of neurosurgery
- electronic documentation management
- Department of Paediatric Surgery: 2,061 performances achieved
- new techniques in the surgery of severe hypospadias with the help of free skin graft
- continuous reconstruction of bladder neck and genitalia in children with severe congenital defect of bladder exstrophy
- implementation of new methods of ultrasound-guided regional anesthesia in children
- specialized surgical care for severely premature infants in cooperation with the neonatal ICU stations of Prague maternity hospitals
- V.A.C. (Vacuum Assisted Closure) application
- Department of Neurosurgery: 335 performances achieved
- expansion of endoscopic surgeries in the frame of the hydrocephalus solution in newborns and infants
- implementation of deep electrodes into the brain for invasive electroencephalography monitoring
- launching of intraoperative neuro-monitoring during brain surgeries
- launching of monitoring of patients in the general anesthesia using NIRS-monitoring of the CNS regional flow
- Department of Orthopaedics: 1,142 performance in children and 174 performances in adult patients achieved
- LCA reconstruction by the method of all-inside using one of the hamstring tendons
- surgery of the anterior cruciate ligament replacement in children with open growth gap using a technique which enables surgery without the growth plate disruption
- V.A.C. (Vacuum Assisted Closure) application - system with an extended active automatic V.A.C ULTA VERAFLU wound cleaning

- performances in the field of hand plastic surgery
- Department of Stomatology: 517 performances achieved
- Department of ENT: 2,084 performance in children and 64 performance in adult patients achieved
- bilateral cochlear implantations since 2014
- program of early surgeries of cleft defects in neonatal period
- laser mucotomy by diode laser
- ENT thyroid surgery in adult patients
- launching of auricular blockades application eg. in tympanoplasty surgery
- Department of Ophthalmology: 932 performances achieved
- Lucentis application
- Ozurdex application
- implantation of platinum cap implant
- Department of Gynecology and Obstetrics: 14 performances achieved
- In the field of transplantology were achieved: 7 kidney transplantations.
- Other non-surgical disciplines incl. bone marrow sampling: 32 performances achieved.
- Endoscopic surgeries in paediatric bronchoscopy: 100 performances achieved.

Unique technological equipment:

- Extension in the number of endoscopic devices in all specialisations
- LSV 980 diode neolaser
- Modernisation of equipment for operating theatres - mechanism for support of the head within neurosurgical performances and hanging mechanism for arm anchoring during shoulder arthroscopies
- Stelaris optical system for cataracts and anterior/ posterior segment
- Biom optical system, in addition to the microscope being used in posterior segment surgeries

Important event in 2016:

- International workshop focused on reconstructive urology in cooperation with the Great Ormond Street Hospital, UK - Prof. Imran Mushtaq, MD;
- Live broadcast of the surgical procedure to the cinema for orthopaedic public - a unique method of meniscus reinforcement implantation „Actifit the importance of meniscus, cartilage and bone regeneration in joint preservation“ – Prof. Em. Rene Verdonk, MD, Universitair Ziekenhuis Gent, Belgium

Central Operating Theatres - Adult Part, Motol University Hospital

Head nurse: Mgr. Vladana Roušalová

The physician responsible for the supervision: Petr Příklad, MD

Basic characteristics:

The department provides a background for 9 out of 11 surgical departments of the adult part of Motol University Hospital; it ensures about two thirds of the surgical performances. In 2016, a total of 18,274 surgeries were performed. Since 2013, the department of the COT for adults is led by head nurse. As the supervising institution from the medical point of view regarding the operation of COT for adults was entrusted the Department of Anesthesiology and Intensive Care Medicine (KARIM).

Important event in 2016:

- A total of 5 operating theatres received new lights and 8 operating theatres received new operating tables, 2 operating theatres were equipped with coagulating devices.
- 1 surgery nurse completed her post-high school education.

Department of Transplantation and Tissue Bank of Motol University Hospital

Senior consultant: Jan Burkert, MD, Ph.D.

Basic characteristics:

The Department of Transplantation and Tissue Bank as the only workplace in the Czech Republic ensures at the same time the program of organ procurement and transplantation (TC) as well as donations and tissue transplantations.

Specific features of the department:

The Department of Transplantation and Tissue Bank - TC creates the organizational prerequisites for individual workplaces so that removals of organs and tissues, kidney transplantations in children, heart transplantations in children and lung transplantations in children and adults can be performed at the Motol University Hospital.

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

In 2016, a total of 10 multi-organ collections from cadaverous donors were realised. At the department were performed a total of 8 kidney transplantations in children (7 from cadaverous donors + 1 from living donor). A total of 42 lung transplantations (of which 29-69% were realised within ECMO) and 3 heart transplantations in children.

Into the cardiovascular tissue bank, a total of 67 hearts were brought and a total of 114 grafts for transplantation of heart valves were given out (an increase of 16 grafts compared to the previous year).

Important event in 2016:

- The transplantation team led by prof. Lischke managed to increase the number of lung transplantations to 42 (in average 4.2 / 1 mil. inhabitants), which ranks us to the level of developed countries.
- We managed to significantly reduce the number of children on the waiting list for kidney transplantation (waiting time for a suitable graft is on average 6.5 months).
- A significant monography „Aortic regurgitation“ from the authors Jan Vojáček, Pavel Žáček, Jan Dominik et al. was published by Grada – our department has written the chapter „Valvular allograft in the Aortic Valve Surgery.“

Outpatient Section

Emergency Department for Children, Motol University Hospital

Senior consultant: Marie Mikulecká, MD, MBA

Head nurse: Zdena Čechová

Basic characteristics:

The Emergency Department for Children, MUH is considered to be the gateway to the Children's Hospital for all acute paediatric patients, whether brought by ambulance or their parents. It has been operating at the MUH in its current structure since 2011. The department is the only independent paediatric emergency unit in the Czech Republic.

The Emergency Department for Children provides comprehensive basic examination and treatment of acute conditions in children from birth until the age of 17 years + 364 days. The department runs an acute paediatric outpatient section during the day time and in the evening and at the weekend it is an emergency ward. During the emergency hours runs the department also specialized acute outpatient facilities - surgical, ENT, orthopaedic, stomatosurgical, neurological and ophthalmological. On the week days is open at the department the Centre for Foreigners as a paediatric outpatient facility for foreign children.

In the year 2016, a total of 32,926 patients were treated at the Emergency Department for Children, Motol University Hospital, of which 5,918 were treated at the Emergency Unit for Children.

Important event in 2016:

- Marie Mikulecká, MD left the senior consultant position after 20 years of successful management of the department on 31. 12. 2016. She was replaced by Jitka Dissou, MD.

Department of Dermatovenereology and Venerology, Motol University Hospital

Senior consultant: Alena Machovcová, MD, Ph.D., MBA

Head nurse: Mgr. Helena Janoušková

Basic characteristics:

This is an outpatient department with no connection to any inpatient ward of Motol University Hospital. The department provides basic and specialised outpatient and consulting care in the field of dermatovenereology focused on dermato-allergology and profession-related skin diseases, prevention and treatment of skin cancer and treatment of psoriasis. In the year 2016, a total of 8,515 patients were treated on an outpatient basis, together were performed 25,153 examinations.

Specialised outpatient facilities for:

- Venereology
- Pigmentary nevi and skin tumours

- Dermatoallergology and job-related dermatoses
- Corrective dermatology
- Lymphology
- Acne advisory centre
- Care of patients after organ transplantation
- Lamphology
- Phototherapy
- Nail advisory centre
- Diagnostics and treatment of nail disorders
- Centre for biological treatment of psoriasis

New methods and procedures:

- Examination of pigmented lesions by digital dermoscope;
- Laser procedures in aesthetic and corrective dermatology;
- Nail surgeries (eg. ingrown nails, deformation of discs).

Unique technological equipment:

- MoleMax I plus digital dermatoscope;
- Fotona XS Erb: YAG and Nd: YAG high power laser.

Department of Paediatric Dermatology, Motol University Hospital

Senior consultant: Štěpánka Čapková, MD

Head nurse: Alena Kurešová

Basic characteristics:

The department treats patients in the field of paediatric dermatology, it operates nationwide and provides not only consulting services to all paediatric inpatient sections of the hospital but also superconsultancy services for the whole Czech Republic in severe diagnostic or therapeutic cases. In 2016, a total of 7,741 patients aged 0-19 years were treated at the department and 278 consultations within the inpatient sections and paediatric departments of Children's Hospital, which the department closely cooperates with, were performed. The department provides pre- and postgraduate teaching in the field of paediatric dermatology with the aim of basic certificate preparation in the field of dermatology and short-term internships of general doctors treating children and adolescents.

Specific features of the department:

The physicians perform specialized consultancy for extremely serious patients with atopic dermatitis, pigmented moles, genodermatosis and hemangiomas. There is no inpatient section at the department therefore patients with serious skin diseases are admitted at the Department of Paediatrics, 2nd Faculty of Medicine and Motol University Hospital.

Important event in 2016:

- Co-organization of the Paediatric Dermatology Conference at the occasion of the 20th anniversary of the Section of Paediatric Dermatology (Czech Diabetes Society, CzMA JEP). Čapková, MD and Čadová, MD had lectures at this conference.

- Head physician Čapková, MD organised in October 2016 a one day training course Paediatrics - Paediatric Dermatology for the Czech Medical Chamber. She was the coordinator of the course, the garant and also the principal lecturer (together with Čadová, MD).
- Jana Čadová, MD was selected by a tender and on 6. 11. - 12. 11. 2016 she participated in postgraduate educational dermatological program under the auspices of the American Austrian Foundation in Open Medical Insitute (OMI) - „Salzburg Medical Seminars“.

Publications:

- Čapková Š.: Current treatment options in the treatment of atopic eczema. *Dermatol. praxi* 2016; 10 (3): 106-110.
- Čadová J. co-author of: Odontogenetic keratocyst in the Basal Cell Nevus (Gorlin-Golz) Syndrome. *Neuroendocrinology Letters*, Vol. 37/2016, Authors: Milan Hubáček, Tereza Kripnerová, Michaela Němčíková, Anna Křepelová, Alena Puchmajerová, Marcela Malíková, Markéta Havlovicová, Jana Čadová.

Emergency Department for Adults, Motol University Hospital

Senior consultant: Jiří Šoupal, MD
Head nurse: Bc. Renáta Všečeková

Basic characteristics:

The emergency department is focused on basic adult examination, stabilization of vital functions, treatment of acute problems and the decision of reception or release in all patients who seek this department. An amount of 60% of patients are brought to the department by ambulance, 25% of patients come without recommendation and 15% are sent to the department by general practitioners.

The department treats about 250 patients a day, each year the total number reaches more than 90,000 treated patients. The department includes an urgent reception, equipped with 17 monitored beds, acute outpatient surgery with 12 examination beds, traumatology, neurology, urology and first-aid services which have together 12 examination beds. From 09:00 to 17:30, a physician specialized in internal medicine is available at the department.

New methods and procedures:

- The department is equipped with modern POCT laboratory devices enabling blood analysis within couple of minutes / couple of dozens of minutes.
- The average examination time is stable at 120 minutes including the waiting time.
- Since December 2015, a new trauma-team has been established. Also the established system of care has been changed so that all the care of acute trauma-patients is now conducted within the Emergency Department for Adults with the help of the Department of Anesthesiology and Intensive Care Medicine (KARIM), surgery, traumatology and emergency physicians.

Unique technological equipment:

- New CT, ultrasound device and new beds and monitors, ventilators along four beds

Important event in 2016:

In the spring and autumn, the department hired 3 graduates from medical faculties and launched a program of training of young doctors in the field of emergency medicine. In 2017, there is a plan to hire other 2-3 graduates.

Primary Care Department, Motol University Hospital

Senior consultant: Jaroslava Kulhánková, MD
Head nurse: Mgr. Alena Kašajová

Basic characteristics:

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

In 2016, a total of 27,889 patients were treated at the Primary Care Department.

Department of Hygiene and Epidemiology, Motol University Hospital

Head epidemiologist: Vilma Benešová, MD
Senior hygiene technician: Mgr. Jana Hrončeková

Basic characteristics:

Inspection and prevention of infections associated with providing of health care, community infections, implementation of measures to reduce their incidence and spread, application of hygienic and antiepidemic requirements in medical and non-medical facilities according to the specific conditions of individual workplaces, ensuring of a healthy and safe environment for patients and work conditions for employees.

Specific features of the department:

The results of monitoring of infections associated with health care shows the amount of 2.24 % of reported infections. In 2015/2016, also a method of prevalence, which makes the data from the process of monitoring comparable at European level, was used. A total of 172 MRSA seizures were recorded, of both colonizations and clinical infections what corresponds to 2.56 cases per 1 000 patients. Isolation due to *Cl.dif.* reached 175 presenting the most common reason for isolation of the patient.

According to the valid legislation, an inspection of compliance with hygiene-epidemiological regime was carried out at healthcare workplaces. A total of 317 internal hygienic audits of the hospital's departments and 252 inspections of sterilization techniques were conducted. The institutions of public health authorities conducted inspections on an ongoing basis at selected sites with the help of employees of the hospital. From laboratories of individual departments – a total of 631 monitoring handprints for microbiological examinations and a total of 3,457 cultivations in order to control bacterial cleanliness of the environmental were performed. Special attention was paid not only to important epidemiologically inclining workplaces, but also to so called clean spaces, where was the

environment monitored regularly by aeroscopic methods in terms of the requirements for certain levels of cleanliness – a total of 89 comprehensive measurements (microorganisms and micro-particles in the air of the clean spaces) were performed. As a part of the usual hygienic supervision is an inspection of warm drinking and non-drinking water (252 samples), modified water for dialysis, pool water and water for rehabilitation purposes - including the detection of Legionella presence.

A total of 812 examinations of diagnosed infections in hospitalized patients were performed. To the institutions of public health authorities were reported 857 community infections which were documented for subsequent investigations of the infections. A total of 262 disinfection of the hospital space were performed by the state disinfector.

As part of the Observe application – a program for monitoring of compliance with hand hygiene, a total of 264 observations were evaluated.

New methods and procedures:

- Introduction of regular microbiological inspection of endoscopes;
- An access to the EPIDAT data repository which is used by the Hygienic Service of the Czech Republic at the national level was granted to selected employees of the department in order to ensure the mandatory reporting, recording and analysis of infectious diseases. The data repository serves for the safe exchange of current information on the incidence of infections between the various workplaces of the Hygienic Service of the Czech Republic, the Ministry of Health of the Czech Republic and the State Health Institute in Prague.

Important event in 2016:

- Ongoing participation in an international study PPS ECDC about monitoring of the incidence of infections associated with health care providing.

Hospital Pharmacy, Motol University Hospital

Head pharmacist: PharmDr. Petr Horák

Deputy: Mgr. Milan Vegerbauer a PharmDr. Markéta Petržalová

Head pharmaceutical assistant: Helena Bohabojová

Basic characteristics:

The main task of the Pharmacy of Motol University Hospital is to provide effective and safe pharmaceuticals for in- and out-patient 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. The hospital pharmacy provides next to dispensation of the pharmaceuticals also individual and collective preparation of medicines, and sterile (from cytotoxic agents, parenteral medicinal products without antimicrobial agents and others) and non-sterile (individual preparations, especially for paediatric patients), furthermore acquisition of unregistered medicines and providing of drugs for clinical evaluations and clinical-pharmaceutical practice.

The pharmacy provides consulting services to patients and healthcare professionals and educational activities incl. organisation of internships for pre- and postgraduate students.

The hospital pharmacy is involved in formulating of the medication policy of Motol University Hospital - establishment of a positive list of pharmaceuticals, ensuring the most

cost-effective medicine etc. It also forms the internal regulations of Motol University Hospital in handling the pharmaceuticals.

In 2016 were prepared in the hospital Pharmacy - at the Department of Central Preparation of Cytostatics a total of 32,364 ready-to-use doses of cytotoxic pharmaceuticals, of which 10,176 were prepared for paediatric patients. The Department of Individual Preparation of the Pharmaceuticals prepared among others nearly 300,000 capsules. The pharmacy prepares and distributes parenteral nutrition and associated health care for 30 outpatient (home cared) patients, including individual dietary nutrition that was prepared by the Department of Sterile Pharmaceuticals for eleven patients. At the Department of Sterile Pharmaceuticals were performed together 7,843 individual preparations (hydration bags 1,036, cardioplegia solutions 977 and parenteral nutrition 5,830 out of which 923 were neonatal bags). In addition, it prepares a range of products unavailable in the form of mass produced pharmaceuticals in inventories (antidotes etc.). The hospital received a total of 881,202 packs of mass produced pharmaceuticals prescribed on 45,782 request forms (vehicula and large-scale infusion medications are not included). A total of 3,171 orders for laboratory diagnostics were handled, out of which 514 were from grant funds. A total of 1,012,255 packages of pharmaceuticals, medical devices and complementary assortments were distributed to public, out of which 556,960 packages of pharmaceuticals were prescribed by physicians on 233,872 prescriptions. In accordance with the principles of good clinical practice and correct laboratory practices, the pharmacy participates in all clinical evaluation of pharmaceuticals conducted within the Motol University Hospital. A total of 6,131 pharmaceuticals were issued as a part of clinical evaluation. The Department of Clinical Pharmacy recommended a total of 504 interventions in the framework of comprehensive reviews of pharmacotherapeutic regimes and provided 86 requested consultations.

New methods and procedures:

- Suggestion and preparation of selected medicines as substitutes of the pharmaceuticals that were temporarily inaccessible on the market, e.g. antibiotic ointments.
- Preparation of medicines according to newly introduced treatments (dimethylsulfoxide ointment).
- Completion of the study of proposed liquid oral formulations of omeprazole.
- Acquisition of new conductive probes and ion-selective electrodes for laboratory drug control.

Important event in 2016:

- Published results of a survey of the implementation rate of European „statements“ in the field of hospital pharmacy at the European level.
- Major staff changes have taken place at the department – retirement of the head of the Sterile Pharmaceutical Preparation Department and the Pharmaceutical Assistant Leader.
- Active participation of employees of the Pharmacy 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.

NURSING CARE

Nursing care is an integral part of health care. In 2016, Motol University Hospital continued to improve the quality of care and patient safety focusing on providing individual comprehensive care.

The issue of the treatment of vascular inputs is continuously treated within the provided care. In 2016, the Department of Vascular Catheter with Peripherally Inserted Central Catheter Team / PICC Team / under the auspices of the Internal Clinic was established. The PICC nurse team ensures the introduction and care of PICC and Midline catheters in hospitalized and outpatient patients within the faculty hospital. In the autumn of 2016, Motol University Hospital acquired the accreditation of the Ministry of Health of the Czech Republic Certified Course „Introduction of PICC and Midline Catheters“ for non-medical health professions. Accreditation of Ministry of Health of the Czech Republic was also granted for a certified course „Complex Nursing Care for Vascular Entrances“. Monitoring of nursing care / decubitus and fall / indicators is a matter of fact. Emphasis is placed primarily on preventive measures. Motol University Hospital has joined for the third time the International Day „Stop the Pressures“ that was announced on 17.11.2016. The purpose of this event is to approach the problem of prevention and treatment of decubitus for the general public through leaflets, video projection and educational posters in the hospital premises. For the second year, we also monitored the incidence of other non-healing wounds. We have recently focused on the issue of decubitus in connection with surgical procedures, the use of medical aids and equipment. In 2016, Ministry of Health of the Czech Republic was accredited a certified Wound healing course. The first stage of the course was attended by wound healing consultants dealing with issues at the hospital. Another of the key themes of 2016 was the diagnosis and healing of IAD - Incontinence Associated Dermatitis (focusing on the resolution of decubitus and IAD).

Social Care

In 2016, social workers in acute care beds provided social care to 3,516 patients, an increase of 355 patients compared to 2015. 712 patients from all the wards were released with home health care, 69 with home hospice care. 631 patients were discharged to rehabilitation care beds and 21 patients were assigned a sleeping hospice. 1,181 patients have been transferred to beds in long-term patients. Healthcare workers in the Post-Care Center had 1,396 patients in social care. 478 home care patients and 136 patients in social care facilities were discharged from the Aftercare Center. These were primarily homes for the elderly and homes with a special regime.

The number of children and their families in social care (including neonates and children in the Children's Psychiatric Clinic) is 752.

Spiritual Care

In 2016 there was an increase in demands for spiritual care, mainly in an increase in the total number of consultations. Satisfying spiritual needs is increasingly becoming a desirable part of comprehensive patient care and contributing to improving nursing care.

Volunteer Center

In 2016 there were 460 volunteers in the hospital. They handled 3,100 hours and devoted 4,900 patients. The volunteers make the stay more comfortable for hospitalized adults and paediatric patients. The courses that are very popular are led by our volunteers such as: beadwork, music and drama, animal assisted therapy, art, drama, memory training and many others.

Central Sterilization

Central sterilization is a self-contained specialized workplace that provides pre-sterilization preparation and sterilization of medical devices for the entire faculty hospital. Provides sterilization with steam, plasma and chemical sterilization. In the year 2016, 112,530 sterilization units were sterilized, the sterilization unit being a 30x30x60cm container / basket, steam sterilizers, 5,740 plasma sterilizers and 4,050 chemical sterilizers.

Healthy Hospital

University Hospital Motol is a member of the international network of hospitals in the WHO project "Hospitals Promoting Health" since 2003. We are focusing on lifestyle programs and the environment for employees. In 2016 we continued all the physical activities (swimming pool exercises, circle training, relaxation exercises, balloon exercises, walks around Prague, etc.). In October, the course „Run up“ took place. The programs are also focused on nutrition, motivation and smoking. In the adult and child section of the hospital, we placed libraries for the public and patients under the title „Chain Reading“. The AcorD Choir also operates in the hospital. Nutritional therapists have been involved in the project „Fit forever and without torture“ and „Fit forever without forever and without torture even on Christmas“.

In September, an international conference entitled „The Way to Modern Nursing XVIII“ was held, which was attended by great interest.

HOSPITAL OMBUDSMAN

Hospital ombudsman has been operating in Motol University Hospital since January 2012. A year after the department changed its name to **Department of the Hospital Ombudsman and Complaints**. The main objective of this department is to protect patient's rights, improving communication between patients, their relatives and hospital staff, improving 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.

For the period of 2015 the department was solving a total of **390 submissions**. Furthermore **406 non-written submissions** were examined and solved. From the total amount of **390 submissions** there were **344 complaints**. Compared to the year 2015, this situation represents an increase of **96 submissions**, respectively about **123 complaints**. The majority of **complaints were assessed as unjustified complaints, partly justified complaints 30**, (decrease compared to 2015 by 2 complaints), and **authorized complaints 25** (increase in **11 complaints**). In case of justified or partly justified complaints the corrective measure in the form of education employees were chosen.

The most frequent submitters were patients (**145 submissions**), a person close to the patient (**114 submissions**) and the legal guardian of a minor patient (**90 submissions**). The most frequent subject of the submissions was an inappropriate communication (announced in **154 cases**) and the provision of health services (**111 submissions**). Against healthcare departments there were in total **330 submissions**, against non-medical department there were **50 submissions** in total. In **75 cases**, the complaints were directed against a specific person.

The legitimate submissions are always dealt by the management of the individual departments. In some cases, in order to successfully resolve the submission is the implementation of an oral hearing that is procured from the written record. In the case of justified or partly justified complaints, the corrective measures are determined. The department maintained in accordance with applicable legislative requirements detailed records of complaints and other proposals. The outputs of the department are regularly presented at the meetings of leading hospital staff, alongside with the proposals to adopt the necessary measures.

A separate department of the hospital ombudsman handles complaints and requests under the law of the free access to information. For the past period, a total of **11 requests** for information were dealt out of which **1 request** was rejected. Every year in connection with this agenda an annual report is prepared and published. A separate Department of the Hospital Ombudsman and Complaints disposes with a detailed evidence of dealt complaints and other submissions according to individual criteria in accordance with required applicable legislation.

SCIENTIFIC RESEARCH ACTIVITIES

The Motol University Hospital (MUH) has constantly and for the long time supported the research activities that permeate the entire spectrum of disciplines represented. In this activity employs close links with the 2nd Faculty of Medicine and co-operation with other research organizations in the Czech Republic and abroad. In accordance with the new trends in applying the results of scientific research supports the Motol University Hospital innovation and implementation of research results into practice.

Support for Science, Research and Innovation at Motol University Hospital is carried out by combined funding of 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 and newly start with Horizon 2020 projects.

Scientific issues are also intertwined other aid schemes structural EU funds and Norwegian funds.

Institutional support and research grants:

- MUH is since 2012 a receiver for institutional support of the Ministry of Health of the Czech Republic. In 2014 it defended a statute „research organization“ and continues to remain beneficiary of institutional support.
- Institutional support research organizations in the MUH are an organized system of internal grants solved at the individual clinics and hospital departments. The year 2016 was the fifth year of the scheme.
- In 2016, the hospital dealt with 14 projects of the Agency for Health Research of the Ministry of Health as the main investigator and 32 projects as the co-investigator.
- In the framework of Institutional Support, 35 Internal Grant Projects were solved in 2016. 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 2016, Motol University Hospital invests its allocated funds in the field of science and research as follows (CZK):

Agency	Amount	Number of Grants
AZV CEO	34,379,000.00	14
AZV co-investigator	15,996,000.00	32
TAČR co-investigator	1,044,296.00	1
GAČR co-investigator	1,013,000.00	2
IP	67,526,000.00	35
FP7	605,646.04	3
Leonardo da Vinci	13,606.99	1
Norwegian funds	18,822,674.19	3

Horizont 2020	1,527,750.78	2
Czecrin	390,000.00	1
OPPK -CLIP UK main-investigator	189,000.00	1
Chiltern (Department of Paediatric Haematology and Oncology)	181,302.01	1
Vertex Pharmaceutical	560,629.08	1
MS EU & Canada (Department of Neurology)	964,800.00	1
WHO	60,000.00	1
Total 2016	143 273 705,09	

- Support of research activities in direct connection with the outputs of science, research and innovation, as reported in national databases Council for Research, Development and Innovation. The results of the outputs of science, research and innovation are used both for comparison within the Czech Republic, where the Motol University Hospital occupies one of the leading positions, both the allocation of resources in the internal system, internal grants so that individual researchers, supported in accordance with their performance. In 2016, the rise of the global impact factor, which reached 1.631 points.
- The Motol University Hospital has gradually allocated priority PRI in hospital. As the strongest lines of research are shown pediatric fields, particularly pediatrics and its subspecialties (endocrinology, gastroenterology, pneumology, etc.), children hematooncology, cardiocentre child and adult cardiology, pediatric and adult neurology. Own research activities are mainly formed in the laboratory hinterlands of the Paediatric haematooncology, Institute of Pathology, Molecular Medicine and the Institute of Immunology and Institute of Microbiology
- In recent years, we vigorously support the development of innovative therapeutic and diagnostic procedures based on modern technologies, which provide space for the development and clinical testing. Newly introduced administrative support application of research results into practice, support the patenting of results and their practical application.

Projects of Advanced therapies

In order to support innovation, transfer of research outcomes research into practice Motol University Hospital introduced the System Project „advanced therapies“. Under this scheme were resolved 5 projects in 2016, from which is expected practical output in the form of new diagnostic and therapeutic options. In 2015, together with the Institute of Organic Chemistry and Biochemistry filed a utility model, resulting from the joint development of antimicrobial peptides for the treatment of osteomyelitis which was extended to an international patent in 2016.

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

Combined program of education of MD / Ph.D. has been working in Motol University Hospital since 2004. For 13 years over 86 students has undergone the program, 16 students have earned a Ph.D. and specialization in the field. Actively in the program enrolled 33 students, 4 students will graduate in the new academic year 2016/2017.

International activity

In 2016, we continue to develop international activities in the field of research, especially at the level of individual clinics and institutes. In 2016, we dealt with four EU FP7 programs and we have, as partners, participated in 4 projects of Horizon 2020. It also increased significantly publications reflecting international cooperation.

Creative initiative

The Motol University Hospital follows and appreciates the quality and successes in the field of medicine and scientific research progress. In 2016, the best creative achievement in the previous year was awarded for the ninth time, which was awarded to the Department of Microbiology for the study “New microbiological diagnosis of serious, cultivation-negative conditions.”

INTERNATIONAL COOPERATION

Asia

Department	Country	Field of cooperation	Partner institution	Other notes
MUH	Mongolia	Education of Mongolian physicians within development projects (Ministry of Industry and Trade)	Central University Hospital of Mongolia, Ulaanbatar	Agreement on Cooperation
MUH	Vietnam	Education of Vietnamese physicians within development projects (Ministry of Industry and Trade)	Viet Tiep	Agreement on Cooperation
MUH	China	Short-term exchange internships, exchange of experience, support for the Zdeněk Miller Foundation	Beijing Children's Hospital	Memorandum on Cooperation
MUH	China	Short-term exchange internships, exchange of experience	Ruijin Hospital	Agreement on Cooperation
MUH	China	Scientific cooperation in the field of neurology	Drum Tower Hospital of Nanjing University	In the preparation phase
Children's Heart Centre	Cambodia	Participation of Czech paediatric cardiac surgeons on surgeries, providing of education for foreign cardiac surgeons, surgeries in children in Phnom Penh or Prague	Hospital Calmette, Phnom Penh	MEDEVAC program of the Ministry of the Interior of the Czech Republic
Children's Heart Centre	Jordan	Participation of Czech paediatric cardiac surgeons on surgeries, providing of education for foreign cardiac surgeons, surgeries in children in Amman or Prague	Al Khalidi Hospital, Amman	MEDEVAC program of the Ministry of the Interior of the Czech Republic

Department of Neurosurgery	China	neuro-imagining (MRI), mentoring of Ph.D students, exchange internships of Chinese Ph.D. students in the UHM a Czech students and scientists in China, courses and lectures of Czech expats in China, common publications, neuro-imagining and translating research	Nan Jing Drum Tower Hospital	prof. Bing Zhang
Department of Medical Microbiology	Iran	molecular type determination of C. difficile isolates	Foodborne and Waterborne Diseases Research Center, Research Institute for Gastroenterology and Liver Diseases, Shahid Beheshti University of Medical Sciences, Tehran, Iran.	
Department of Biology and Medical Genetics	Bahrain	molecular genetics of cystic fibrosis	National Genetics Centre, Manama	dr. Cristina Skripnyk

North and South America + Australia

Department	Country	Field of cooperation	Partner institution	Other notes
Department of Internal medicine	USA, Alabama	Pathogenesis of IgA nephropathy	University of Alabama at Birmingham, Dept. Immunology	Cooperation within the grant for Epstein-Barr Virus research and development of IgA nephropathy
Department of Neurology	USA	Neurology - primary and secondary prevention of dementia, mindfulness, non- Alzheimer dementia, internships	Harvard Medical School and Massachusetts General Hospital	prof. Growdon, dr.Gomez-Isla
Department of Neurology	USA	Neurology, epidemiology, scientific methodology, statistics - Czech Brain Ageing Study, ADNI-like arm, research on animals, internships of our scientists, visits of foreign expats, organization of courses in MUH	University of South Florida	dr. Morgan, prof. Brent Small, prof. Ross Andel, Memorandum of cooperation signed
Department of Neurology	USA	Development of tests for spacial navigation	Georgia Institute of Technology	dr. Moffat,
Department of Neurology	USA	Neurology, genetics, pathology, internships, organization of courses in MUH	Dartmouth Medical Center, New Hampshire,	prof. Rhodes
Department of Neurology	USA	Neurology, MRI imagining, common publications, internships of Ph.D. students, courses of foreign expats in the CR	Mayo Clinic, Rochester,	dr. Kantarci
Department of Neurology	USA	neuro-otology, specifically vestibular rehabilitation, organization of common workshops (2015 in Prague)	Baylor College of Medicine, Houston, Texas	prof. Helen Cohen
Department of Neurology	Australia	Neuro-science, neuro-imagining, translation research, education of PhD students	Queensland Brain Institute, University of Queensland	prof. Elizabeth J. Coulson
Department of Neurology	Australia	Neurology, neuro-psychology, Ph.D. internships, common research	Wicking Dementia Research and Education Centre, Tasmania	prof. J. Vickers, auspices of the Australian Trade Chamber, Czech subsidiary

Department of Immunology	USA	cooperation in application development in the field of immunology, cancer immunology, auto-immune diseases	FOCIS, The Federation of Clinical Immunology Societies	Department of Immunology is one of the FOCOS centers of excellence
Department of Immunology	USA	primary immuno-deficiency	JMF Jeffrey Modell Foundation	Department of Immunology is one of the JMF world centers
Department of Anaesthesiology and ICM	Canada	simulation medicine	McGill University, Montreal	cooperation on the project of simulation medicine on the 2nd Faculty of Medicine, MUH, exchange of experience, partnership in project solving
Children's Heart Centre	USA	paediatric electro-physiology	PACES - Pediatric Arrhythmia and Electrophysiology Society	Participation in international multicentric studies
Emergency Department for Adults	USA	cooperation in the field of acute care, management of patients' flow at the emergency department, research, education of residents	Brigham-Womens Hospital Boston, Affiliated Harvard Medical School Institution	2 meetings and 6 conference calls
1st Department of Orthopaedics	USA	Fluoroscopy of knee while walking	J.Vrayton Pruitt Family Department of Biomedical Engineering	participation in common projects
1st Department of Orthopaedics	USA	septic orthopaedics	Rothman Institute at Thomas Jefferson University Hospital Philadelphia	cooperation on the methods of treatment of septic patients
Department of Otorhinolaryngology and Head and Neck Surgery	USA	Oncology	Dep. Of Otolaryngology, Head and Neck Surgery, University Hospital, Rochester / Prof. Beatty/	

Department of Otorhinolaryngology and Head and Neck Surgery	USA	Oncology, Otology	Dep. Of Otolaryngology, Head and Neck Surgery, University Hospital, Pittsburg/Prof. Myers/	
Department of Paediatric Haematology and Oncology	USA	Molecular genetics of liquid biopsy in paraganglioma and pheochromocytoma	NIH, Bethesda	
Department of Medical Microbiology	USA	Herpes-virus infection	University of Massachusetts Medical School, Worcester, MA	Cooperation on the whole-genom sequencing of CMV in patients with serious CMV complication - resitance, CMV after transplantations
Department of Medical Microbiology	USA	Herpes-virus infection/ Pathogenesis of IgA nephropathy	University of Alabama at Birmingham, Dept. Immunology	Cooperation within the grant for Epstein-Barr Virus research and development of IgA nephropathy
Department of Biology and Medical Genetics	USA	Reproductive genomics	Reproductive Genetics Innovations LLC, Chicago - Northbrook	Dr. Svetlana Rechitsky
Department of Biology and Medical Genetics	USA	Metabolomics	Metabolon	Dr. Carlos Malpica
Department of Biology and Medical Genetics	Canada	"Undiagnosed disease programme"	Care4rare Research Consortium	Prof. Kym Boycott
Department of Biology and Medical Genetics	USA	Genomics of mental retardation and authistic spectre disorders	Howard Hughs Medical Institute, University of Washington, Genome Sciences, Seattle	Prof. Evan Eichler
Department of Biology and Medical Genetics	Australia	3D "gestalt analysis" in syndromology	Genetic Services of Western Australia, King Edward Memorial Hospital, Perth	Prof. Gareth Baynam
Department of Biology and Medical Genetics	Australia	"Undiagnosed rare disease programme"	Office of Population Health Genomics, Department of Health, Perth	Prof. Hugh Dawkins

Europe

Department	Country	Field of cooperation	Partner institution	Other notes
Centre for Spinal Surgery	Macedonia	Spinal surgery	Ministry of Health of Macedonia	Exchange of experience, further education of physicians, Memorandum of Understanding signed
Children's Heart Centre	Slovenia	Participation of Czech paediatric cardiac surgeons on surgeries, providing of education for foreign cardiac surgeons, surgeries in children in Ljubljana or Prague	Univerzitetni Klinični Center	Contract preparation - Letter of Intent
Department of Clinical Haematology	Netherlands	Clinical haematology for adult patients	Radboud University Nijmegen, Medical Centre for European Leukemia - Net	Registry of patients with MDS and IPSS low and intermediate -1
Department of Paediatrics	Finland	Molecular virological and bacteriological studies	University in Tampere, Medical Faculty, Institute of Virology	Testing of bacteria and virus in cohorts in subjects with autoimmune disease risk
Department of Paediatrics	Norway	Molecular virological studies	National Institute of Public Health, Epidemiology Division	Testing of virus and individual viruses in cohorts in subjects with type 1 diabetes and celiac disease risk
Department of Paediatrics	Germany	Paediatric diabetology	Kinderkrankenhaus auf der Bult Hannover	SWEET Study, www.sweet-project.eu , creation of European Reference Centers.

Department of Paediatrics	Spain	Paediatric nephrology	ESPN (European society for paediatric nephrology)	"5th Global Nephrologist Annual Meeting", Valencia, 31.3.-2.4.16 - educational lecture
Department of Paediatrics	Sweden	Experimental growth and secondary osteoporosis	Institut Karolinska, Stockholm	Development of an in-vivo model of glucocorticoid-induced osteoporosis, testing of potential medicine.
Department of Paediatrics	Switzerland	Multicentric co-operation in the diagnosis and treatment of primary ciliary dyskinesia	University of Bern, Institute of Social and Preventive Medicine (ISPM)	
Department of Paediatrics	United Kingdom	Multicentric co-operation in the diagnosis and treatment of primary ciliary dyskinesia	University of Southampton	COST Action BM 1407 BEAT-PCD
Department of Paediatrics	Germany	Cystic fibrosis	Medizinische Fakultät Carl Gustav Carus, Technische Universität Dresden, Fetscherstraße 74, 01307 Dresden, Germany	"Common publication in the Journal of Cystic Fibrosis (in the preparation phase): A Product of Immunoreactive Trypsinogen and Pancreatitis-Associated Protein as Second Tier Strategy in Cystic Fibrosis Newborn Screening. Sophia Weidler a,1, Konrad H. Stopsack b,1, Jutta Hammermann a, Olaf Sommerburg c, Marcus A. Mall c, d, Georg F. Hoffmann e, Dirk Kohlmüller e, Jürgen G. Okun e, Milan Macek Jr. f, Felix Votava g, Veronika Krulišová f, Miroslava Balašćaková f, Veronika Skalická h, Min Ae Lee-Kirsch a, Marina Stopsack i*"

Department of Paediatrics	Portugal	Cystic fibrosis	"Faculty of Sciences/ University of Lisboa/ Campo Grande-C8 / 1749-016 Lisboa / Portugal "	"Measurements of Functional Responses in Human Primary Lung Cells as a Basis for Personalised Therapy for Cystic Fibrosis" A usage of explant lung tissue in patients after lung transplantation with the diagnosis of cystic fibrosis. Coordinator from MUH - Tereza Doušová, MD
Department of Paediatrics	Finland - Jake Lin	Common project "Virom a diabetes", visit of the partner hospital	University of Tampere	Work and study stay
Department of Paediatrics	Ukraine - Evgenia Globa, Dr.	ESPE Clinical Fellowship	Institute of Endocrinology, Kijev	Three-month study and work stay, supported by the European Society of Paediatric Endocrinology
Department of Paediatrics	Austria - Herwig Frisch, Prof Dr.	Symposium "Best of EDGE", 22.11.2016	Medical University Vienna	Lecture tour
Department of Paediatrics	Israel - Zvi Laron, Prof Dr.	Symposium "Best of EDGE", 22.11.2017	Schneider's Children Hospital, Petah Tikva	Lecture tour
Department of Medical Microbiology	Danemark	Molecular microbiology	Rigshospitalet, Copenhagen	
Department of Medical Microbiology	Switzerland	Molecular microbiology	University of Lausanne, CHUV	
Department of Medical Microbiology	United Kingdom	Herpes virus infections	London School of Hygiene & Tropical Medicine, London	Cooperation on study of HHV-6 and chromosomally integrated HHV-6 and its pathological impacts

Department of Medical Microbiology	France	Herpes virus infections	Hôpital de la Salpêtrière/ Université Paris 6 Pierre et Marie Curie, Paris	Cooperation in the field of herpes virus resistant infections
Department of Medical Microbiology	United Kingdom	Herpes virus infections	Centre for Virus Research, University of Glasgow	Cooperation on whole-genome CMV sequencing in patients with congenital or early post-natal infection
Department of Medical Microbiology	United Kingdom	C. difficile - EUCLID study	Leeds Teaching Hospital	Cooperation on study - Incidence and ribotype determination of C. difficile
Department of Medical Microbiology	United Kingdom	C. difficile - CloSER study	Leeds Teaching Hospital	Cooperation on study - antibiotic resistance in prevalent ribotypes
Department of Medical Microbiology	United Kingdom	C. difficile - ORCHID study	Leeds Teaching Hospital	Cooperation on study - clinical effects of CDI
Department of Medical Microbiology	Netherlands	C. difficile	Leiden Medical Centre	Long-term cooperation in the field of C. difficile
Department of Medical Microbiology	Finland	Molecular type determination of C. difficile	National Institute for Health and Welfare, Finland, Helsinki	Project focused on the familial analysis of C. difficile isolates.
Department of Medical Microbiology	Slovakia	Molecular type determination of Slovak isolates of C. difficile	XIX. Slovak-Czech Congress on Infectious Diseases, Trnava, June 2015, presentations	Project focused on the familial analysis of C. difficile isolates.
Department of ENT	Netherlands	Clinical-scientific cooperation	Keel, neus-en oorarts, Geldrop	
Department of ENT	Latvia	Training on surgical techniques for cochlear implantation	ENT Clinic, Riga	Prof. Sokolovs

Department of ENT	Slovakia	Clinical and scientific cooperation	Department of Paediatric Otolaryngology, Children University Hospital Bratislava: surgery, screening of hearing, care for deaf patients	Ass. Prof. Šebová
Department of ENT	Poland	Clinical and scientific cooperation	Paediatric ENT Clinic, Bydgoszcz	Prof. Józef Mierzwiński
Department of ENT	Italy	Clinical and scientific cooperation	Dep. of Endocrinology, University of Pisa, Italy.	Prof. R. Elisei
Department of Cardiology	Germany, Denmark, Netherlands, Austria, Poland, Norway	Diagnostics and treatment of hypertrophic obstructive cardiomyopathy	(Germany—Bad Oeynhausen; Czech Republic—Prague, Trinec, Brno; Denmark— Copenhagen, Gentofte; the Netherlands— Nieuwegein; Poland - Warsaw; Norway - Oslo; Austria - Innsbruck)	Euro-ASA International Registry - long- term follow-up of patients after alcohol septal ablation, two publications in the European Heart Journal (IF 15)
Department of Paediatric Haematology and Oncology - Centre of Complex Care of Haemophilia Patients	United Kingdom	Participation in the European Register	European Haemophilia Safety Surveillance (EUHASS)- University of Sheffield	Data sharing of security within the treatment of haemophilia
Department of Paediatric Haematology and Oncology	SIOPEN European multicentric society- main cooperation: Vienna, Austria	Detection of neuroblastoma cells by QRT-PCR	Leeds Institute of Cancer and Pathology, Cancer Research UK Leeds Centre, St James's University Hospital	Study within Minimal Monitoring Group SIOPEN
Department of Paediatric Haematology and Oncology	SIOPEN European multicentric activity- main cooperation: Vienna, Austria	Biology and molecular oncology of neuroblastomas	St. Anna Kinderkrebsforschung, Childer's Cancer Research Institute	Study within SIOPEN Biology

Department of Paediatric Haematology and Oncology	SIOPEN European multicentric activity- main cooperation: Oslo, Norway	Detection of neuroblastoma cells by immunocytochemistry	UiO Institute of Clinical Medicine Faculty of Medicine Oslo	Study within Minimal Monitoring Group SIOPEN
Department of Paediatric Haematology and Oncology	Greece	Immunophenotyping of neublastomic cells in KD	GENERAL HOSPITAL OF ATHENS " G. GENNHMATAS"	
Department of Paediatric Haematology and Oncology	Germany	Experimental oncology - common publications and projects	German Canc Res Ctr, Div Prevent Oncol, Natl Ctr Tumor Dis, D-69120 Heidelberg, Germany	2015 - one article in a journal with IF, 2014 - one article in a journal with IF
Department of Paediatric Haematology and Oncology	United Kingdom	Experimental oncology - common publications and projects	Kings Coll London, MRC, PHE Ctr Environm & Hlth, Analyt & Environm Sci Div, London, England	2014 - one article in a journal with IF
Department of Paediatric Haematology and Oncology	Greece	Eckschlager - member of the editorial board of the journal "International Journal of Oncology"	Spandidos Publications	IF = 3,025
Department of Paediatric Haematology and Oncology	Austria	LCH-IV – International Collaborative Treatment Protocol for Children and Adolesctns with Langerhans Cell Histiocytosis	International study for the treatment of children with Langerhans cell histiocytosis	Patient registration and treatment according to the protocol
Department of Paediatric Haematology and Oncology	Austria	SIOPEN-R-NET study	International study for treatment of children with high risk neuroblastoma	Patient registration and treatment according to the protocol
Department of Paediatric Haematology and Oncology	Germany	SIOP neuroblastoma study	International study for treatment of children with neuroblastoma	Patient registration and treatment according to the protocol
Department of Paediatric Haematology and Oncology	Italy	The European paediatric Soft tissue sarcoma Study Group (EpSSG),Protokol EpSSG RMS 2005 (for non metastatic rhabdomyosarcoma)	University of Padova	Academic study of the treatment of children with soft tissue sarcomas

Department of Paediatric Haematology and Oncology	Germany	EuroNet-Paediatric Hodgkin's Lymphoma Group, EuroNet-PHL-LP1 Protocol (for the treatment of early stages of nodular lymphocytic predominant of Hodgkin's lymphoma in children and adolescents)	University in Halle	Academic study on the diagnostics and treatment of children with Hodgkin's lymphoma
Department of Paediatric Haematology and Oncology	Germany	Ewing 2008 - International Protocol for the Treatment of Ewing's Sarcoma - exchange of information on efficiency of the treatment, randomization	University in Münster	
Department of Paediatric Haematology and Oncology	Germany, Italy, Austria, Switzerland, Australia, Israel	Study of acute lymphoblastic leukemia treatment - AIEOP-BFM ALL 2009	University Hospital in Kiel	
Department of Paediatric Haematology and Oncology	Germany	Study of the relapsing acute lymphoblastic leukemia treatment - IntReALL	Berlin-Charité University Hospital	
Department of Paediatric Haematology and Oncology	Germany	EuroNet-PHL-C2 protocol	University in Giessen	Academic study on the treatment of classical Hodgkin's lymphoma
Department of Paediatric Haematology and Oncology	Germany	NHL-BFM Working Group, NHL-BFM Registry 2012	University in Giessen	Diagnostics and treatment of non-Hodgkin's lymphomas
Department of Paediatric Haematology and Oncology	Germany	EUROPEAN RHABDOID REGISTER (EU-RHAB)	University Hospital in Augsburg	Registry and recommended treatment of rabdoid brain tumor
Department of Paediatric Haematology and Oncology	Germany, Netherlands, Italy, Switzerland, France	International European PanCareLife grant - assessment of late effects of oncology treatment - fertility, ototoxicity, quality of life	EU	

Department of Paediatric Haematology and Oncology	Austria	ALL SCT Forum study	St. Anna Hospital, Vienna	Academic study on bone marrow transplantation in paediatric acute lymphoblastic leukemia
Department of Paediatric Haematology and Oncology	Germany	AML SCT study	Faculty of Medicine and Hospital in Hannover	Academic study on bone marrow transplantation in acute myeloid leukemia
Department of Paediatric Haematology and Oncology	Austria	CML SCT study		
Department of Paediatric Haematology and Oncology	Germany	Molecular classification of brain tumors in children (outcome of publications)	University in Heidelberg	
Department of Ophthalmology	Slovakia	Organization of bilateral annual congresses organized by the Committee of the Czech and Slovak Society of Paediatric Ophthalmology and Strabology	Klinika detskej oftalmológie LF UK Bratislava	Exchange of experience of leading experts in the field of paediatric ophthalmology in the CR and SR
Centre for Spinal Surgery	Macedonia	Spinal surgery	Ministry of Health of Macedonia	Exchange of experience, further education of physicians, Memorandum of Understanding signed
Children's Heart Centre	Slovenia	Participation of Czech paediatric cardiac surgeons on surgeries, providing of education for foreign cardiac surgeons, surgeries in children in Ljubljana or Prague	Univerzitetni Klinični Center	Contract preparation - Letter of Intent
Department of Internal medicine	Sweden	Diabetology, study of immune mechanisms stimulating the DM1	Jönköping University, Dept of Natural Science & Biomedicine, School of Health Sciences	Common publications

Department of Internal medicine	United Kingdom	Diabetology, optimization of insulin pump therapy	"University of Cambridge, Institute of Metabolic Science, Cambridge"	Common journal with IF in the field of Sensor Augmented Pump Therapy (in the preparation phase)
Department of Internal medicine	Germany	Neuromuscular electro-stimulation: Outlooks for patients with pulmonary transplantation	University of Würzburg and KfH Kidney Centre Würzburg, Dept. Of Internal Medicine	Cooperation in post-graduate education
Department of Neurology	Macedonia	Spinal surgery	Ministry of Health of Macedonia	Exchange of experience, further education of physicians, Memorandum of Understanding signed
Department of Neurology	Slovakia	Research of Alzheimer's disease biomarkers and treatment strategies	Slovak Academy of Sciences (SAVBA)	prof. Novak
Department of Neurology	Germany	Neurology, cooperation with German registry for Tauopathie	University Ulm	prof. Otto
Department of Neurology	Hungary	Neurology, common research, mentoring of Ph.D. students	University of Szeged	dr. Kincses
Department of Neurology	Sweden	Neurology - epidemiology, Czech Brain Ageing Study, mindfulness, common Ph.D. program, internships of Ph.D. students	Karolinska Institutet	prof. Windblad, doc. Religa, prof. Eriksdotter, common Letter of intent
Department of Neurology	Spain	Neurology of neuroscience - clinical importance of biomarkers, neuroscience, CSF biomarkers	ICN Hospital Clinic i Universitari and Pasqual Maragall Foundation	dr. Molinuevo, application for grant

Department of Neurology	Austria	Neurology, neurosciences, translational research	Neuroscios gmbh	dr. Windisch, development of a new space research facility
Department of Neurology	United Kingdom	Neuropsychology, common publications, internships of PhD. Students	1) Imperial college London 2) Queensquare Institut of Neurology, London 3) Guy, St. Thomas London	prof. Harrison, dr. S. Crutch, prof. Kopelman
Department of Neurology	Germany	Neurology, autoimmune encephalitis, cooperation with the German registry	"Universitätsklinikum Schleswig-Holstein Campus Kiel "	doc. Leypoldt, Neuro-immunology, Institut für Klinische Chemie und Klinik für Neurologie, doc. Marusič + dr. Elišák
Department of Neurology	Slovenia	Epileptosurgical program	Univerzitetni Klinični Center, Ljubljana	Exchange of experience, consultation activity, surgical treatment for patients from Slovenia, doc. Marušič
Department of Neurology	France, UK, Germany, Netherlands, Austria, Sweden, Norway, Italy, Croatia, Greece, Bulgaria, etc.	Epileptosurgical program	Project to improve accessibility and level of surgical treatment of epilepsy across different EU countries	EU E-Pilepsy project together with the Charles University, www.e-pilepsy.eu, possibilities of exchange internships, harmonization of procedures
Department of Immunology	EU	Primary immunodeficiency	ESID European Society for Immunodeficiency, cooperation with a numebr of centers	Participation in common projects and clinical studies
Department of Anaesthesiology and ICM	Slovakia	Hemocoagulation in intensive medicine	II. Klinika anestéziológie a intenzívnej medicíny LF UK a OÚSA, Bratislava	Participation in common projects, exchange of experience

Department of Anaesthesiology and ICM	Slovakia	Introduction of peripheral long-term venous inlets in children	Klinika detskej anestéziológie a intenzivej starostlivosti, Banská Bystrica	Exchange of experience, cooperation, lecturing
Department of Anaesthesiology and ICM	Austria	Hemocoagulation in intensive medicine	Tirolkliniken, Innsbruck	Exchange of experience, internships
Department of Anaesthesiology and ICM	Austria	Lung transplantations	Allgemeines Krankenhaus, Vienna	Internships, exchange of experience
Department of Anaesthesiology and ICM	EU	Intensive medicine	ESA (European Society of Anesthesiologists), ESICM (European Society of Intensive Care Medicine)	Participation in common clinical studies and academic studies (Dr. Vymazal is the national coordinator of studies: AbSeS and Pneumolnspire)
Department of Subsequent Intensive and Long-term Intensive Nursing Care	Spain	The MID-FRAIL study (A randomized Clinical Trial to evaluate the effectiveness of a Multimodal intervention in frail and pre-frail older people with type 2 Diabetes on frailty and Quality of life)	Fuándacion Para Investigacion Biomedica Del Hospital Universitario De Getafe, España	Participation in the Mid-Frail study
Children's Heart Centre	Slovenia	Personnel for hearth surgeries in children throughout Slovenia by the Children's Heart Centre, education of paediatric cardiac surgeons and cardiologists	Univerzitetni Klinični Center, Ljubljana	Contract between MUH and Univerzitetni Klinični Center, Ljubljana
Children's Heart Centre	Evrope	Pediatic electrophysiology	Cardiac Dysrhythmias and Electrophysiology of the AEPC (Association for European Paediatric and Congenital Cardiology)	Participation in international multicentric studies, organization and participation in teaching symposia

Department of Pneumology	Hungary	Cystic fibrosis, HE4 marker	University of Debrecen	Common publications in CHEST journal, IF 5.94
Department of Cardiology	Macedonia	Spinal surgery	Ministry of Health of Macedonia	Exchange of experience, further education of physicians, Memorandum of Understanding signed
Department of Cardiology	Slovenia	Participation of Czech paediatric cardiac surgeons on surgeries, providing of education for foreign cardiac surgeons, surgeries in children in Ljubljana or Prague	Univerzitetni Klinični Center	Contract preparation - Letter of Intent
Department of Cardiology	Germany, Denmark, Netherlands, Austria, Poland, Norway, UK	Diagnostics and treatment of hypertrophic obstructive cardiomyopathy	(Germany—Bad Oyenhausen; Czech Republic—Prague, Trinec, Brno; Denmark—Copenhagen, Gentofte; the Netherlands—Nieuwegein; Poland - Warsaw; Norway - Oslo; Austria - Innsbruck, Liverpool - England)	Euro-ASA International Registry - long-term follow-up of patients after alcohol septal ablation, two publications in the European Heart Journal (IF 15)
1st Department of Orthopaedics	Germany	Biomechanical study of joint replacement	Klinik und Poliklinik für Orthopädie, Physikalische Medizin und Rehabilitation	Participation in a common project
1st Department of Orthopaedics	United Kingdom	Clinical study of total knee joint replacements - GMK	South West London Elective Orthopaedic Center	Participation in a clinical evaluation
1st Department of Orthopaedics	United Kingdom	Collaboration in development of new design of the total knee replacement - GMK	Royal London Hospital for Integrated Medicine	Development of joint replacement of the knee

1st Department of Orthopaedics	Germany	Cooperation in the field of septic orthopaedics	Hereus Medical GmbH	Study focused on antibiotics used for surgeries of total replacements
1st Department of Orthopaedics	Switzerland	Center for Septic Surgeries	European Bone and Joint Society, EBJIS	Establishment of the Centre for Septic Surgeries
1st Department of Orthopaedics	Germany	Cooperation in the field of septic orthopaedics	ENDO-Clinic Hamburg	Septic orthopaedics
Department of Rheumatology	EU	Pediatric rheumatology	PRINTO (Paediatric Rheumatology International Trials Organisation)	Participation in common projects and clinical studies
Department of Rheumatology	EU	Rheumatology, musculoskeletal ultrasonography	Clinica Reumatologica - Scuola di Specializzazione in Reumatologia, Università Politecnica delle Marche, Ancona - Italy	Participation in common research projects (prof. Walter Grassi, Dr. Emilio Filippucci)
Department of Clinical Psychology	United Kingdom	Neuropsychology	King's College London Institute of Psychiatry, Psychology and Neuroscience	Participation in common projects and publishing activity
Department of Clinical Psychology	United Kingdom	Neuropsychology	Neuropsychiatry and Memory Disorders Clinic, St Thomas's Hospital, London	Participation in common projects and publishing activity
Department of Clinical Psychology	Germany	Algeciology	Anfofo, Koeln am Rhein a Uniklinik Koeln and Rhein	Educational activities
Department of Clinical Psychology	Belgium	Psychoanalysis, tumors in pregnancy	Universitní nemocnice Leuven v Belgii - Prof. Frederic Amant, M.D., Ph.D.	Cooperation and scientific activities

Department of Ophthalmology	EU	The department is part of a network of European Retinoblastoma Centers	European retinoblastoma group (EURBG)	In cooperation with the Department of Paediatric Haematology and Oncology
Department of Otorhinolaryngology and Head and Neck Surgery	Germany	Oncology, plastic surgery	Univ. HNO-Klinik, Magdeburg, /B.Freigang/	
Department of Otorhinolaryngology and Head and Neck Surgery	Germany	Middle ear surgery, micromechanics of the middle ear transmission system	HNO Klinik Karl Gustav Kahler, Dresden, /T. Hüttenbrink/	
Department of Otorhinolaryngology and Head and Neck Surgery	Germany	Otologic surgery, surgery of cranial base	HNO Kopfklinik, Würzburg /J.Helms/	
Department of Otorhinolaryngology and Head and Neck Surgery	Italy	Oncology	Instituto Europeo di Oncologia, Unita di Chirurgia Cervico-Facciale, Milano /F.Chiesa/	
Department of Otorhinolaryngology and Head and Neck Surgery	France	Oncology	Institut Gustave Roussy, Département de Chirurgie Cervico-faciale, Villejuif /F. Janot/	
Department of Otorhinolaryngology and Head and Neck Surgery	Germany	Stem implantations	Neurochirurgische Klinik Braunschweig /W.P.Sollmann/	
Department of Otorhinolaryngology and Head and Neck Surgery	Slovakia	Oncology, otologic surgery, cochlear implantations	ENT Dept. of the University Hospital in Bratislava /M.Profant/	
Department of Otorhinolaryngology and Head and Neck Surgery	Netherlands	Otologic surgery	ENT Dept., University Hospital Rotterdam /L.Feenstra/	
Department of Otorhinolaryngology and Head and Neck Surgery	Netherlands	Otologic surgery, cochlear implantations	ENT Dept., University Hospital Nijmegen / van den Broek /	

Department of Otorhinolaryngology and Head and Neck Surgery	Germany	Sleep Laboratory / Sleep Apnea Syndrome /, glycobiology of head and neck tumors, cochlear implantations, cranial base	HNO Klinik Mannheim /Prof. Karl Hörmann/	
Department of Otorhinolaryngology and Head and Neck Surgery	United Kingdom	Othology	Whiston Hospital, Prescot /Dr. Audisio/	
Department of Otorhinolaryngology and Head and Neck Surgery	Austria	Othology	ENT Dept., University Hospital Innsbruck / Prof. Riechelman/	
Department of Otorhinolaryngology and Head and Neck Surgery	France	Cranial base	Hospital Lariboisiere, Paris / Prof. Tran Ba Huy/	
Department of Otorhinolaryngology and Head and Neck Surgery	Austria	Oncology	Dept. of Otolaryngology, Head and Neck Surgery / Prof. M. Burian /	
Department of Otorhinolaryngology and Head and Neck Surgery	Germany	Oncology	HNO Klinik und Poliklinik /Prof. W. Mann/	
Department of Otorhinolaryngology and Head and Neck Surgery	Austria	Oncology, Rhinology	ENT Dept., LKH Universitaetsklinikum Graz /Prof. Thurnher/	
Department of Otorhinolaryngology and Head and Neck Surgery	Austria	Laryngology	ENT Dept., Klinikum Klagenfurt am Worthersee /Prof. Eckel/	
Department of Paediatric Haematology and Oncology	Germany, Austria, Italy, Benelux, Skandinavia	European Cooperative Group of Diagnostics and Treatment of Myelodysplastic Syndrome - EWOG-MDS	Freiburg, Germany	Academic study
Department of Paediatric Haematology and Oncology	Germany, Austria, Italy, Benelux, Skandinavia	European Cooperative Group on Diagnosis and Treatment of Aplastic Anemia	Freiburg, Germany	Academic study

Department of Paediatric Haematology and Oncology	Netherlands and 11 European countries	EuroFlow	University in Leiden	Development and standardization of flow cytometry methods in haematology
Department of Paediatric Haematology and Oncology	Netherlands and 23 countries from all over the world	EuroMRD	University in Leiden	Development and standardization of molecular detection of persistence of diseases in haematology
Department of Paediatric Haematology and Oncology	Netherlands, Germany, France, Italy, UK	EuroClonality NGS	Erasmus Medical Center Rotterdam	Development and standardization of new generation sequencing methods in haematology
Department of Paediatric Haematology and Oncology	Germany, Austria, Netherlands, France, Italy, Israel	Genetic Variation Task Force I-BFM	Hannover Medical Center	Research on genetic predispositions of leukemia in children
Department of Paediatric Haematology and Oncology	European multicentric activity	ExporNet: Late effect advisory	Lund University, Bologna University	Consultation system for late consequences within Europe - for doctors and patients
Department of Medical Microbiology / Department of Paediatrics	Not Applicable	Cystic fibrosis	European Society for CF	ass. prof. Dřevínek - member of the committee for the European project Standards of Care
Department of Medical Microbiology	United Kingdom	Common research projects	Cardiff School of Biosciences	

Department of Medical Microbiology	France	Common research projects	University of Montpellier, INSERM	
Department of Medical Microbiology	France	Development of antimicrobial preparation	Alaxia SAS, SME	Participation in the Advisory Board, common research project
Department of Medical Microbiology	Italy	Development of antimicrobial preparation	University of Pavia	Common research project
Department of Medical Microbiology	Danemark	Molecular microbiology	Rigshospitalet, Copenhagen	Common research project
Department of Medical Microbiology	Romania	Molecular microbiology	National Institute of Infectious Diseases	Common research project
Department of Medical Microbiology	United Kingdom	Herpes virus infections	London School of Hygiene & Tropical Medicine, London	Cooperation on the study of HHV-6 and chromosomally integrated HHV-6 and its pathological effects
Department of Medical Microbiology	France	Herpes virus infections	Hôpital de la Salpêtrière/ Université Paris 6 Pierre et Marie Curie, Paris	Collaboration on resistant herpes virus infections
Department of Medical Microbiology	United Kingdom	Herpes virus infections	Centre for Virus Research, University of Glasgow	Cooperation on whole-genome CMV sequencing from patients with in-born or early post-natal infection
Department of Medical Microbiology	United Kingdom	C. difficile	Leeds Teaching Hospital	Whole-genome sequencing of European isolates of C. difficile, 176 ribotype.

Department of Medical Microbiology	United Kingdom	C. difficile - CloSER study	Leeds Teaching Hospital	Cooperation on study - resistance to antibiotics in prevalent ribotypes
Department of Medical Microbiology	United Kingdom	C. difficile - ORCHID study	Leeds Teaching Hospital	Cooperation on study - clinical effect of CDI
Department of Medical Microbiology	Netherlands	C. difficile	Leiden Medical Centre	Long-term cooperation in the field of C. difficile
Department of Medical Microbiology	Finland	Molecular type determination of C. difficile	National Institute for Health and Welfare, Finland, Helsinki	Project focused on analysis of the relationship of C. difficile isolates.
Department of Biology and Medical Genetics	United Kingdom	Common research project	University Newcastle Upon Tyne	Participation in a common project
Department of Biology and Medical Genetics	France	Common research project, Orpha.net	INSERM	Participation in a common project
Department of Biology and Medical Genetics	Norway	Common research project, PDP3 Norway Grants	Frambu	Participation in a common project, exchange of experience
Department of Biology and Medical Genetics	Norway	Common research project, PDP3 Norway Grants	Haukeland University of Bergen	Participation in a common project, exchange of experience
Department of Biology and Medical Genetics	Belgium	Cooperation in the field of NGS	University of Leuven	Exchange of experience and recommendations regarding NGS
Department of Biology and Medical Genetics	Spain	Genomics and bioinformatics	Centro Nacional de Analisis Genomico, CNAG	Prof. Ivo Gut

Department of Biology and Medical Genetics	France	Molecular cytogenetics and reproductive medicine	Department of Chromosomal Genetics, CHU Montpellier	Prof. Frank Pellestor
Department of Biology and Medical Genetics	Slovenia	Human phenotype ontology in bioinformatics	KIMG, University Medical Centre, Ljubljana	Prof. Borut Peterlin
Department of Biology and Medical Genetics	Germany	Human phenotype ontology in bioinformatics	Charite University Medicine, Humboldt University, Berlin	Prof. Peter Krawitz
Department of Biology and Medical Genetics	Danemark	Reproductive genomics	Laboratory of Reproductive Biology, University Hospital of Copenhagen	Prof. Claus Y. Andersen
Department of Biology and Medical Genetics	United Kingdom	RD-connect.eu - association with this project	John Walton Muscular Dystrophy Centre, University of Newcastle	Prof. Hanns Lochmuller
Department of Biology and Medical Genetics	Germany	Reproductive genomics	University Clinic Schleswig-Holstein, Gynecologic endocrinology and reproductive medicine, Luebeck	Prof. Georg Griesinger
Department of Biology and Medical Genetics	Switzerland	Bioinformatics	Phenosystems S.A, Lausanne	Dr. David Atlan
Department of Biology and Medical Genetics	Belgium	Non-invasive prenatal diagnostics	Faculty of Pharmaceutical Sciences, Ghent University	Prof. Filip van Nieuwerburgh
Department of Biology and Medical Genetics	Netherlands	Genomics of sensory diseases	Radboud University Medical Centre, Department of Otolaryngology, Nijmegen	Prof. Ronald J.E. Pennings
Department of Biology and Medical Genetics	Netherlands	Genomics in hereditary cancer syndromes	Radboud University Medical Centre, Department of Human Genetics, Nijmegen	Prof. Nicoline Hoogerbrugge

Department of Biology and Medical Genetics	Netherlands	Genomics, bioinformatics	Radboud University Medical Centre, Department of Human Genetics, Genome Diagnostics, Nijmegen	Prof. Joris Veltman
Department of Biology and Medical Genetics	United Kingdom	Genomic analysis of variants, education activities	GoldenHelix Foundation, London	Assoc. Prof. George Patrinos
Department of Biology and Medical Genetics	Slovakia	Molecular pathology	Jessenius Faculty of Medicine in Martin, Comenius University Bratislava	Prof. Lukas Plank
Department of Biology and Medical Genetics	Danemark	Rare diseases in cardiology, cardiomyopathy	Aarhus University Hospital, Department of Cardiology	Dr. Morten K. Jensen
Department of Biology and Medical Genetics	Netherlands	Rare diseases in cardiology, cardiomyopathy	St. Antonius Hospital Nieuwegein, Department of Cardiology	Dr. Max Liebrechts
Department of Biology and Medical Genetics	Spain	Cystic fibrosis	University Hospital Val d'Hebron, Barcelona	Assoc. Prof. Silvia Gartner
Department of Biology and Medical Genetics	United Kingdom	Postgraduate education in medical genetics	University of Plymouth, UK	Prof. Heather Skirton
Department of Biology and Medical Genetics	Portugal	Cystic fibrosis	Faculty of Sciences, Biosystems and Integrative Sciences Institute, Lisboa	Prof. Margarida Amaral

Africa

Department	Country	Field of cooperation	Partner institution	Other notes
Children's Heart Centre	Kenya	Participation of Czech paediatric cardiac surgeons on surgeries, providing of education for foreign cardiac surgeons, surgeries in children in Rabat or Prague	Hôpital Cheikh Zaid	MEDEVAC program of the Ministry of the Interior of the Czech Republic
Children's Heart Centre	Morocco	Participation of Czech paediatric cardiac surgeons on surgeries, providing of education for foreign cardiac surgeons, surgeries in children in Nairobi or Prague	The Mater Hospital, Nairobi	MEDEVAC program of the Ministry of the Interior of the Czech Republic



ECONOMIC ACTIVITIES

Balance Sheet (in thousands of CZK)	situation on 1 st January 2016	situation on 31 st December 2016
ASSETS	10,975,157.88	10,844,753.61
Permanent assets	8,934,203.36	8,924,772.03
Long-term intangible assets	24,730.64	13,611.48
Long-term tangible assets	8,900,109.94	8,899,884.04
Long-term financial assets	0.00	0.00
Long-term claims	9,362.77	11,276.51
Current assets	2,040,954.52	1,919,981.58
Reserves	134,790.78	158,568.64
Claims	1,055,514.26	726,203.19
Financial assets	850,649.47	1,035,209.75
LIABILITIES	10,975,157.88	10,844,753.61
Own Resources	9,890,146.27	9,740,699.26
Property funds	8,954,515.49	8,944,655.90
Financial and monetary funds	2,365,452.09	2,221,714.06
Economic result for current accounting period	2,951.62	4,150.61
Accumulated loss from previous years	-1,432,772.93	-1,429,821.31
Economic result in licensing procedure		
Foreign sources	754,594.22	1,104,054.34
Reserves	766.80	0.00
Long-term liabilities	217,477.53	275,759.74
Current liabilities	866,767.27	828,294.60
Bank accommodations and loans	0.00	0.00

Profit and loss statement (in thousands of CZK) situation on 31 st December 2016	
Material costs	3,457,113.55
Repair and service expenses	743,957.36
Wage expenses	3,286,350.03
Taxes and charges	300.75
Other costs	61,450.52
Depreciations, sold property, reserves and adjusting items	579,797.03
Financial costs	4,763.58
Cost of indisputable rights (the state budget, local governments, state funds)	0
Total costs	8,133,732.82
Revenues for medical outputs and wares	7,467,823.44
Other revenues	508,527.52
Financial income	871.88
Income of indisputable rights (the state budget, local governments, state funds)	161,198.29
Total revenues	8,138,421.13
Economic result before taxation	4,688.31
Income tax	0
Additional income tax payments	537.70
Economic result after taxation	4,150.61

Summary of economic indexes		in thousands of CZK		
Index	2014	2015	2016	16/15 in %
Yields	7,488,001	7,778,152	8,138,221	104.63
Expenses	7,486,988	7,775,201	8,134,271	104.62
Economic result	1,013	2,951	4,150	140.63
Accumulated loss from previous years	-1,432,773	-1,429,821	-1,425,671	99.71
Tangible investment assets	8,716,755	8,900,109	8,899,884	100.00
Reserves	107,485	134,790	158,569	117.64
Claims	1,092,528	1,055,514	726,203	68.80
Obligations	753,575	866,767	828,295	95.56
Payroll Fund	0	0	0	0.00
Cultural and Social Services Fund	17,619	19,033	24,664	129.59
Reserve fund	46,475	51,220	56,840	110.97
Fund for reproduction of investment assets	2,656,946	2,295,197	2,140,210	93.25

I. Liabilities and claims

Short-term trade liabilities	431,092,087.57 CZK
Short-term trade claims	123,594,667.70 CZK
Long-term liabilities	275,759,745.92 CZK
Long-term claims	11,276,509.62 CZK
Liabilities after the due date	128,124.02 CZK
Claims after the due date	55,047,714.30 CZK
Liabilities for employees	148,676,381.38 CZK
Claims against employees	11,219,854.08 CZK

Liabilities of the Motol University Hospital were during the year 2016 regularly paid off within 60 days after the arrival of the invoice, i.e. in full compliance with the Civil Code. Payments are covered in accordance with the term of maturity and only invoices that have to be investigated due to material and time discrepancies, become liabilities after the due date. However, the amount of liabilities after the due date of this type is minimal. Short-term trade liabilities are about 42 million CZK lower compared to the year 2015. Liabilities after the due date are at the same level as in the previous year and being collected by individual departments of orders.

There are no liabilities of more than 60 days after the due date. Liabilities for employees are equal to the volume of unpaid wages and will be fully paid in January 2017.

The amount of short-term claims was stable during the year, except for the end of the year 2016 when all health insurance companies with the exception of the Military Health Insurance Company paid all invoices before the time of maturity. Therefore, the amount of claims significantly declined in the end of December 2016, however, this will not happen again in the following months.

Claims after the due date are mostly claims after foreigners that are difficult to collect and these are therefore continuously written off during the reporting period in accordance with the decree 410/2009 Coll. In the volume of claims after the due date are included also overdue claims for regulatory fees in the amount of 7.38 million CZK which are being continuously exacted. Written off claims are still kept in off-balance sheet accounts. With the validity since 1. 1. 2010, accounting adjustments to claims are being created and claims are continuously written off into expenses. During the year 2016, a total of 2.69 million CZK of claims and 3.985 million CZK of accounting adjustments were written off.

The Motol University Hospital keeps the payments of financial flows balanced. During the year 2016, the hospital paid for the reconstruction of the Children's Hospital from its own resources. The hospital will be paying off the supplier loans also in the year 2017 and these payments will affect the cash flow. The payment discipline and maintenance of the balanced cash flow belong to priorities of the Motol University Hospital and the records of both liabilities and claims have been thoroughly monitored. In accordance with law 563/1991 Sb., on Accounting, as amended, the final balances of claims and liabilities were approved as well as their correctness and the process of creation of in-

ventories was performed according to Decree No. 270/2010 Coll., on inventory of assets and liabilities.

II. Inventories

The situation on inventories of the MUH:

- material, low value tangible fixed assets	32,625,906.34 CZK
- pharmaceuticals, consumer medical material	104,283,733.48 CZK

The number of inventories of material and low value tangible fixed assets remains almost the same compared to the previous period. The MUH is trying to minimize the inventories, what is enabled for instance by quick deliveries from suppliers.

In the area of pharmaceuticals and consumer medical material, there was a growth of 14.6 million CZK compared to the year 2015. This increase was affected mainly by an increase of pharmaceuticals in the amount of 14.3 million CZK. The main reason was an increase in centric drugs where the prices of individual items are high and the second reason was an increase in the overall volume of medication due to higher number of health care performances. In the field of consumer medical material, the amount of inventories is comparable to the year 2015, there was a slight increase of CZK 0.3 million, what corresponds again with the increase in the number and structure of health care performances.

Inventories of pharmaceuticals and consumer medical material are kept to a minimum, because the distribution of supplies of these goods is very fast and the creation of high stocks is economically disadvantageous. The Motol University Hospital ensures purchases of pharmaceuticals and consumer medical material through electronic auctions so that it succeeds to buy the goods in many cases at substantially lower prices and therefore it reduces the direct costs per patient.

III. Assets

Acquisition of fixed assets:	507,065,464.86 CZK
Acquisition of low value fixed assets:	57,311,160.90 CZK
Fixed assets implementation:	624,560,043.48 CZK
Low value fixed assets implementation:	52,043,465.31 CZK
Disposal of fixed assets:	165,926,324.77 CZK
Disposal of low value fixed assets:	44,114,671.48 CZK

In 2016, less fixed assets was acquired compared to the previous period. The reason was mainly the fact that the largest part of the reconstruction of the Children's Hospital took place in 2015. The amount of acquired low value fixed assets was on the other hand higher by 7 million CZK than in the previous period, it was caused mainly by purchasing of small assets after the reconstruction in 2015. The implementation of fixed assets was also higher by an amount of 124 million CZK compared to the last year.

IV. Situation on accounts

Account balances on 31th December 2016

Current account	935,435,199.46 CZK
Deposit account	88,736,294.85 CZK
Account of Cultural and Social Services Fund	10,928,762.00 CZK

At the end of the year, the already mentioned payments of almost all health insurance companies were received resulting in an extra increase in the balance of the bank account on 31. 12. 2016.

The balance of the deposit account is mainly created from donations in the amount of 51.7 million CZK, the remaining 37.03 million CZK on the account are the deposits of patients of the hospital, other deposits and guarantees for public contracts.

Account of cultural and social services fund is influenced by its income which was in 2016 1.5 % of gross wage and its output. For the year 2016, the collective agreement was signed and the fund was created and drawn in accordance with it and with the current applicable legislation.

The approval of Act 128/2016 Coll. amending Act No. 218/2000 Coll., on budgetary rules, with the effect from 10. 5. 2016, stipulated the obligation to transfer all accounts to the Czech National Bank by 10. 2. 2017. In August, negotiations with the CNB have started, the hospital created new accounts and funds were one by one transferred from the account of KB (Komerční banka) to the account of the Czech National Bank.

V. Expenses and yields in 2015 and 2016

Costs connected directly with a patient

Item	year 2015 in thous. CZK	year 2016 in thous. CZK	growth in thous. CZK	growth in %
Medicaments	1,529,382.36	1,691,912.71	162,530.35	1.11
Blood	87,676.65	82,417.12	-5,259.53	0.94
Consumer medical material	854,008.40	931,344.44	77,336.04	1.09
Foodstuffs for Patients	47,261.22	47,760.87	499.65	1.01
Total	2,518,328.63	2,753,435.14	235,106.51	1.09

Expenses for electricity, water, gas

Item	year 2015 in thous. CZK	year 2016 in thous. CZK	growth in thous. CZK	growth in %
Water	24,677.62	33,424.17	8,746.55	1.35
Gas (heat energy)	66,600.57	65,981.64	-618.93	0.99
Electricity	88,515.41	88,227.02	-288.39	0,99
Total	179,793.60	187 632,83	7 839,23	1,04

Other indexes

Item	year 2015 in thous. CZK	year 2016 in thous. CZK	growth in thous. CZK	growth in %
Material in general	93,977.81	97,140.58	3,162.77	1.03
Material for maintenance	6,772.77	8,295.40	1,522.63	1.22
Linen	11,136.99	11,289.02	152.03	1.01
Repairs and maintenance	323,650.41	360,481.60	36,831.19	1.11
Services	343,582.39	366,216.40	22,634.01	1.06
Total	779,120.37	843,423.00	64,302.63	1.08

Costs of wages and salaries

Item	year 2015 in thous. CZK	year 2016 in thous. CZK	growth in thous. CZK	growth in %
Wages and salaries	2,293,635.61	2,438,805.74	145,170.13	1.06
Health insurance	204,468.12	217,580.40	13,112.28	1.06
Social security	558,611.13	593,944.87	35,333.74	1.06
Creation of the Cultural and Social Services Fund	22,542.57	36,019.00	13,476.43	1.06
Total	3,079,257.43	3,286,350.01	207,092.58	1.06

Revenues for medical outputs

Item	year 2015 in thous. CZK	year 2016 in thous. CZK	growth in thous. CZK	growth in %
Revenues for medical outputs – General Health Insurance	6,574,866.43	6,858,295.85	283,429.42	1.04
Other medical outputs	115,142.82	104,382.34	-10,760.48	0.90
Total	6,690,009.25	6,962,678.19	272,668.94	1.04

When comparing the costs directly connected with the patient, there was an increase of 9 % in the year-to-year comparison. The highest growth of 11 % occurred in pharmaceuticals affected mainly by an increase of generic drugs.

The expenses of energy, water and heat energy increased by 4 %, mainly due to energy prices on the market, respectively centrally set purchase prices by the Ministry of Health of the Czech Republic. The costs of electricity did not exceed the level of the previous year. For heat energy, the expenses were also comparable to the previous year. Costs of water increased by 35%. The reason for the growth of these expenses was a poor water measurement of Prague Waterworks in the past period resulting in the need of the hospital to pay the difference in 2016.

The other expenses experienced an increase of 8 % in year-to-year comparison. The growth of costs of general material by 3 % was influenced by higher amount of small assets purchased after the reconstruction, consumer IT materials and printed paper. For laundry, the turnover was comparable. Maintenance costs grew by 22%, that is a result of extensive repairs in the adult section and in other hospital buildings or due to statutory inspections and technical service work. Costs of services grew by 6%. This increase was mainly affected by an increase of security, cleaning services, waste removal and other works, as the wing B of the Children's Hospital was put in operation. Also a growth of health services occurred, i.e. services which were provided during the last year by other hospitals.

In year-to-year comparison of personnel expenses, there was an increase of 6 %, the same increase rate as in the year-on-year comparison of 2014 and 2015. On 1.1. 2016, a wage adjustment which have increased wages by 5% was enforced in accordance with the Government Decree 278/2015 Coll. The MUH managed the growth of personnel expenses set by the government although it was not fully coordinated with the hospital's reimbursement decree. The hospital needed to analyse its savings. Besides that, in 2016 experienced the hospital the lack of nursing staff on the labor market which resulted in an increase of overtime hours. This increase has highly influenced the hospital's total expenses as personnel expenses reached 40%. The MUH managed to keep the increase in personnel expenses, in terms of the percentage value were the total personnel costs the same compared to 2015.

Within the revenues for medical outputs in patients, the number of medical procedures experienced a growth of 4 % in year-to-year comparison. The principles of the reimbursement decree 2016, namely the triple regulation measures and the segmentation between seven health insurance companies, have unfortunately caused unpaid performances of more than 3 % for the hospital. However, thanks to an increase in the number of hospitalizations and the number of hospital outpatient services, the hospital kept the profit balanced. The other medical services were reduced, mainly by reducing of the number of self-payers and by limited capacity due to the reconstruction of the hospital.

VI. Changes in accounting

In 2016, the accounting was performed in accordance with the legislation for state-funded organizations by Act on accounting no. 563/1991 Coll., Decree no. 410/2009 Coll., which is being implemented together with some provisions of Act no. 563/1991 Coll., on accounting and the Czech accounting standards, as amended. During the year, mandatory reports of the organization were handed over to the state accounting authority in accordance with the Decree no. 383/2009, on accounting records in the technical form of selected accounting entities and their transmission to the central system of state accounting information and on requirements of the technical and mixed forms of accounting records (technical regulation on accounting records), as amended. Simultaneously, the PAP reports quarterly updated as set by legislation, were processed. When processing the financial statements for the year 2016 into the central governmental system of accounting information, the cash flow statement and an overview of changes in equity were created. All the accounting of final account in 2016 was carried out according to the guidelines of the Ministry of Health of the Czech Republic and in compliance

with applicable legislation, related decrees, accounting standards and regulations. Since 2016, the MUH has been included in particular consolidation unit.

In accordance with Act no. 218/2000 Coll., on budgetary rules, as amended, pursuant to § 58 of the Act, a re-accounting of the Fund for asset reproduction, repairs and maintenance in the amount of 318.6 million CZK was carried out.

The fund for asset reproduction is budgeted for the coming years with regard to investments acquired in 2016 and with a prospect to the future. The balance of the Fund for asset reproduction was 2,140.21 million CZK on 31st December 2016. This balance has been budgeted for: co-investment in construction for the year 2017, an investment plan and investment covering from hospital's own resources and financing of repairs and maintenance.

The estimated items were created within the framework of § 7 and § 8 of Act no. 563/1991 Coll., on accounting, as amended. The estimated items which are related to the time and place of the accounting period at MUH were accounted.

VII. Conclusion

The economy of the Motol University Hospital to 31. 12. 2016 was balanced and the accounting period ended up with a profit - the economic result after taxation reached 4.15 million CZK., out of which the main activity of the hospital ended with a loss of -40.674 million CZK and the economic activity reached a profit of 45.363 million CZK. The hospital managed to reach the economic profit in this year thanks to efficiency of the whole management, strict adherence to set limits and introduction of a system of control regulatory measures throughout the year 2016.

The management of the Motol University Hospital puts stress mainly on provisions for keeping the economy balanced while maintaining the same level of quality and comprehensiveness of provided health care for patients from the whole Czech Republic. The maintenance of the quality of provided health care for patients with limited amount of funds is a natural fact in accordance with the statute of an accredited hospital.

PERSONNEL ACTIVITIES

In 2016, Motol University Hospital employed:

In revised numbers (RN): 5,180 employees, of which 4,120 medical professionals
In natural persons (NP): 5,820 employees, of which 4,726 medical professionals

Profession structure

	2014	2015	2016	2014	2015	2016	INDEX 16/15	
	FO	FO	FO	PP	PP	PP	FO	PP
Total	5 709	5 780	5 820	5 127	5 160	5 180	1,01	1,00
PHYSICIANS	1 197	1 215	1 218	888	888	888	1,00	1,00
PHARMACISTS	32	33	33	26	27	29	1,00	1,07
NURSES	2 060	2 009	2000	1 916	1 890	1 851	1,00	0,98
MP WITH PROF. QUALIFIC	375	378	390	355	359	362	1,03	1,01
MP WITH SPEC. SKILLS	234	235	249	190	196	200	1,06	1,02
MP UNDER SUPERVISION	707	758	774	697	725	741	1,02	1,02
JOP WITH PROF. QUALIFIC	55	71	62	41	45	50	0,87	1,11
TOS (TECHNICAL/OFFICE STAFF)	699	717	740	663	680	708	1,03	1,04
WORKERS	350	364	354	351	350	351	0,97	1,00

(NP) average number of natural person (RN) average revised number

Qualification Structure, situation on 31st December, 2016

Education achieved by nurses and midwives	Total	%	Of which specialized	%
Secondary health care	1,338	67	551	41
Higher Health Care	195	10	168	86
University – Bachelor Degree	320	16	231	72
University – Master degree	147	7	72	49
Total	2,000	100.00	1 022	51

Employees according to age and sex and education – situation on 31th December, 2016

Reached education	Men	Women	total	%
Elementary	111	133	244	4
Trained	90	108	198	3
Secondary vocational	230	183	413	7
Full secondary	296	2,057	2,353	41
Vocational	56	246	302	5
University	789	1,521	2,310	40
- of which bachelor	55	421	476	
- of which masters	734	1,100	1,834	
Total	1,572	4,191	5,820	100

Employees according to age and sex – situation on 31th December, 2016

Age	Men	Women	total	%
To 20 years	12	38	50	0.86
21 – 31 years	321	817	1,138	19.55
31 – 40 years	430	996	1,426	24.50
41 – 50 years	300	1,099	1,399	24.04
51 – 60 years	280	979	1,259	21.63
61 years and older	229	319	548	9.42
Total	1,572	4,248	5,820	100
%	27.01	72.99		

1) **Health care professionals according to Law 95/2004. Coll.** = physicians and pharmacists: in total 1,251. Out of 1,218 physicians, a total of 364 (30 %) are doctors with professional competence only. Specialist qualification (i.e. 2nd degree attestation, special medical license, license of the Czech Medical Chamber, certificate of the Ministry of Health) have 854 (70 %) physicians.

2) **Health care professionals according to Law 96/2004 Coll.** = paramedical professions: in total 3,475 of whom 2,000 are nurses and midwives.

Wages area

On the payroll was spent a total of 2,395,011,656 CZK (without other personnel costs-remuneration for work performed outside employment). Compared to the year 2015, there was an increase of **146,955,146 CZK**, i.e. **6.5 %**.

The growth of wages was the result of the salary adjustments since 1.1.2016 according

to Government Decree no. 278/2015 Coll. Furthermore, the growth of wages was influenced by aging and changes in the qualification structure of the employees.

The average gross salary in the hospital on 31. 12. 2016 was 38,529 CZK. Compared to the year 2015 there is an increase of 6 %.

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Total	26835	27711	29925	30824	33356	35016	34364	34893	36302	38529
Doctors	48906	49199	50565	51373	61510	67464	65564	66474	68962	71753
Nurses	24860	26724	29171	30206	31307	32853	32079	32035	33425	36390

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